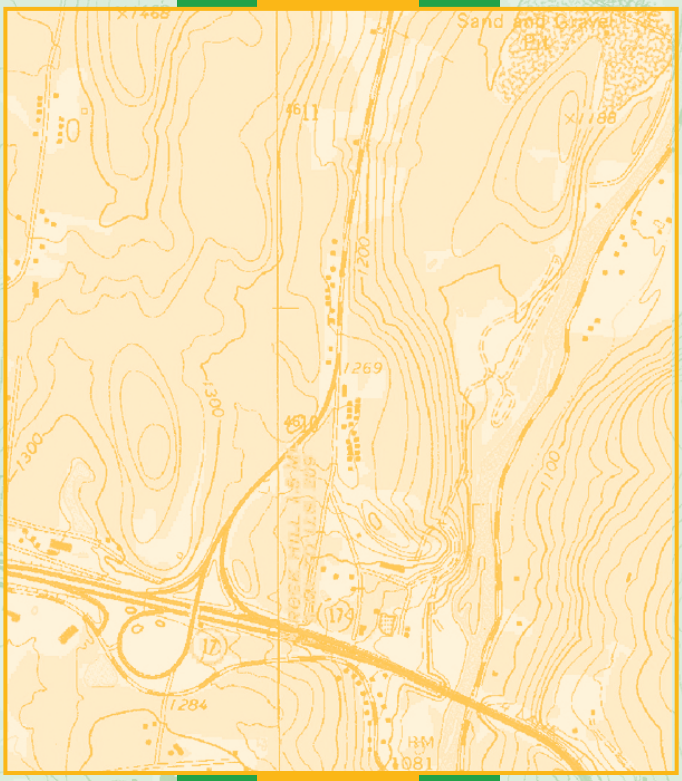
Final Environmental Impact Statement
Proposed Stockbridge-Munsee Casino

Town of Thompson, Sullivan County, New York

Bureau of Indian Affairs

Prepared by:

TETRA TECH



Appendices

January 2014

Appendix A

Scoping Comments

Appendix A
Comments and Response to Comments

A-1 Scoping Session Public Meeting Transcript

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Appendix A-1

Scoping Session Public Meeting Transcript

COPY

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
EASTERN REGIONAL OFFICE

- X

BIA/NEPA Scoping Session

For

Stockbridge-Munsee Casino

- X

Sullivan County Government Center
Legislative Meeting Room
December 4, 2003
7:00 P.M.

A P P E A R A N C E S :

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Indian Affairs
Regional Office
711 Stewarts Ferry Pike
Nashville, Tennessee 37214
BY: KURT CHANDLER, Consultant

ALSO PRESENT:

Robert Chicks - President

Bridgette Swanke, Esq. - Counsel for Applicant

Amy Green - Engineer for Applicant

JERIC CORPORATION
Court Reporting Services
P.O. Box 385
Narrowsburg, New York 12764
(845) 252-3515

Reported By: Rosemary A. Meyer

(Stockbridge-Munsee Scoping Session)

MR. CHANDLER: Good evening. My name is Kurt Chandler with the Bureau of Indian Affairs. The Bureau of Indian Affairs is the proponent and the lead federal agency for this project. Tonight we're going to be taking public comments on the proposed Stockbridge-Munsee Casino here in Sullivan County.

If you would, we would like you to go ahead and sign up if you want to make comments. We're going to take them one by one. You'll come up here to speak at this microphone, which I've been told that you are very used to.

Mr. President, Robert Chicks with the tribe, he's going to introduce the tribal members and then on, we'll introduce the project. After you understand a little more about the project then you're welcome to make comments.

MR. CHICKS: Thanks, Kurt.

Good evening everyone. My name is Bob Chicks. I'm the president of the Stockbridge-Munsee Tribe. I see a lot of familiar faces. We have been here over the past couple of years quite a few times, both here in the county government center and over at the Town of Thompson and the Village of Monticello. It's good to be back again.

What I'm going to do is just introduce some of the folks who have traveled with me here from Wisconsin and then I'm going to turn it over to one of our staff attorneys who is

(Stockbridge-Munsee Scoping Session)

going to then kind of go over the outline with you a little bit. She's going to pass it off to Amy Green from Rizzo Associates who is going to cover it in detail.

I want to introduce Sterling Schreiber who is our vice president. Seated next to him is Vicki Doxtator who has just recently been elected to the tribal counsel. And coming in through the door is Kim Peekor who is our project coordinator. And over on the far side of the room is Misty Davids who is our public relations manager for the tribe; and Bridgette Swanke who is one of our tribal attorneys. Seated next to her is Amy Green from Rizzo and Associates. And I'd like to recognize Jacob Billig who also works for us here in Sullivan County.

With that I guess Bridgette, it's all yours.

MS. SWANKE: I don't know if any of the other local officials, if they want to introduce themselves. You can do that. You can feel free to stand up and do that right now if you want to. Otherwise I can start with our summary of where we've been up to now. Anyone?

(No response.)

MS. SWANKE: Okay. I'll just go ahead and start then.

The tribe has been working on this project, working on the environmental work for this project, as well as the project itself, since 2001. We completed the original

(Presentation)

Environmental Assessment in November of 2001. This Environmental Assessment was submitted to the BIA in February of 2002 as part of the tribe's completed land and trust application. The tribe worked with the BIA to address some internal comments and a final document was released for public comment approximately one year ago, on December 24, 2002.

There were seven comment letters received on this document. The tribe addressed these comments and resubmitted our EA to the BIA. However, before a final determination was made on the Environmental Assessment it was withdrawn and the tribe elected to complete an Environmental Impact Statement.

In addition to the previous work on the EA the tribe has also been working with the U.S. Army Corps of Engineers and the U.S.E.P.A to obtain wetland permits. We have also been working with the New York State Department of Environmental Conservation and the New York State Department of Transportation on various issues.

Finally, the tribe had begun working on the SEQRA process with the Town of Thompson acting as Lead Agency. However, in light of the tribe now doing an EIS, we anticipate that the EIS will be integrated with the SEQRA as provided for under state law.

I will now turn over the podium to Amy Green who will then go through the handout provided to you.

1 (Presentation)

2 MS. GREEN: Good evening. Again, at the front and the
3 back there is an outline of what the proposed scope is for the
4 EIS so if you want to pick one up now or on the way out, by
5 all means. And also, again, if you want to make comments, if
6 you'd sign in I'd appreciate it.

7 I'll just give you a very brief project overview and then
8 we'll open the floor to your comments since that's the main
9 reason we're here tonight.

10 The project site is approximately 333 acres. It's
11 immediately adjacent to Exit 107 of Route 17. We have some
12 aerial photographs over there that you can look at if you'd
13 like.

14 The land is on both sides of County Highway 161 but the
15 proposed casinos and facilities are entirely on the east side
16 of the road where the old auto salvage and sand and gravel
17 operation used to be.

18 The casino will include 3,000 slot machines and 190
19 gaming tables, restaurants, specialty bars, retail and support
20 or backup house. In a Phase 2 there will be a 750 room hotel
21 proposed immediately adjacent to the casino. Parking will be
22 almost entirely in structures in order to minimize the land
23 impact.

24 As Bridgette said, a Draft EA was prepared and submitted
25 for public comment. At this point what was in that Draft EA

(Presentation)

will mostly be the bulk of what's going to be in the EIS with specific updates and a broader analysis of issues, most especially storm water management, socioeconomic impacts, traffic and air quality analysis and cumulative impacts. The cumulative impacts will address up to a total of three casinos as opposed to the two casinos that we had assumed in our EA.

As listed in the public notice, which I also have copies of up here if anybody wants, I have them with me right now, specific issues will include, that we discussed in the EIS but not limited to, soil erosion, sediment control, storm water management, wetland impact mitigation, minimization of impacts to fish and wildlife and protection of the Neversink River, avoidance of cultural resources, and as I said earlier, the traffic, air quality, socioeconomics and cumulative impacts. The full range of alternatives that were considered will all be presented in the EIS.

With that, I'm going to open the floor to comments. Let me just get the sign in sheets.

Also, if you don't want to make comment tonight but you want to make comment on the project or on the scope for the EIS, the comment period is open until December 19th. The comments can be made in writing to Mr. Chandler at the Bureau of Indian Affairs. His address and fax number is in the public notice. And again, I have copies that are available if

1 (By Brantz, Harry)
2 you want to submit this in writing or by fax.
3 So Mr. Harry Brantz, do you still want to make a comment?
4 MR. BRANTZ: I've been in thing for six years. You ask
5 me, what's here, 107, they have Old Liberty Road. Not Old
6 Liberty Roads. Old 17. They said that they're not going to
7 widen it. How about the land by the Neversink River? Some
8 people said it's going to be changed. You can't change the
9 river.
10 The second thing. I'd been talking and people come to
11 me, what's the answer, will we have casinos or not. I don't
12 know. Everybody asks me why. I don't know. I can't build
13 myself a whole new wall if we're going to have or not have it.
14 Been talk, talk, talk, talk, talk, talk all the time. The
15 problem is when are we going to have it.
16 And now I want to tell you something. The federal court
17 and the New York State court is holding it up. Ain't nobody
18 else. If we get through the court it's constitutional. If
19 they don't go through the court it's unconstitutional.
20 And referring to the community here, we're going to have
21 big problems after the casino is here. Mental health, people
22 are going to get depressed. I saw it in the depression. A
23 lot of people jumped off the roof because they were gaming on
24 the stock market. We have to face those things. How are we
25 going to improve ourselves without knowing in advance what the

HB-1

(By Contrys, James)

problem is? I'd like to have a study done on that matter, too. Thank you.

MS. GREEN: Thank you. Mr. James Contrys.

MR. CONTRYS: Maybe I'm saying this at the inappropriate time. There's not a lot of people here.

I own a property at the end of Foss Road, 55 Foss Road. I have highway frontage. I have to have access in between 161. Just reading through everything you guys are going to build, obviously, this is a very major project, this is not just a little hotel. We haven't been contacted by anybody other than Mr. Billing, and that was in reference to prices of the property which were unbelievable.

You have impacts here. Now, we got some paperwork from Rizzo and Associates that stated that you were going to build this on the Guildick side of the land but you own the land on the other side of 161. You basically own everything on the westbound lane between the Neversink River and Peppy's Motel which is halfway to 106. We haven't heard anything about what's going to happen to us. I run a business there. I feed my family there. We have running water that goes through our property. Nobody's ever contacted us. I'm very concerned at this point because it looks like this is going to happen. I've been here for 41 years. I just celebrated my 41st birthday here. My parents own a business here. I now run a

(By Contrys, James)

business on that Foss property. I'm concerned. I have three children. We have running water for our horses that go through there. You're going to manipulate a lot of the land down there. God bless you, I welcome this. But being in the predicament that I'm in, for 12 years we've owned this property. We started with nothing. We started a little business. I have a wonderful business. It's growing, just like most things here in Sullivan County. I want to build but I don't want to build if you guys are going to build this thing and kick us out of there. I don't want to waste my time breaking my back to build this. I really need to get some kind of interaction with you people. We're concerned. You know, if they're going take the highway, and we've got a guy in the paper the other day, he's talking about a six lane highway up 17. Truthfully, I don't see it. But if it does, then it's taking all my property.

Getting in 161, you're going to put your entrance -- according to the associate's paperwork that we got from the Army Corps of Engineers, you're going to put that entrance in to your casino, the first stage, right after the Maywood Estates. Well, that's right after the entrance coming into Foss Road which is where I get and out 100 times a day. How is that going to affect me getting in and out, taking my children to school, go on a tow, go get parts, whatever we're

1 (By Contrys, James)
2 going to do down there? It's three years going on.
3 I've talked to Mr. Israel a couple of times. At first we
4 were like, eh, you know, casinos, like the other gentleman
5 said. And you're smiling back there. You see it too. We've
6 been hearing this for 41 years. I've been hearing this since
7 I've been a little kid. Now all of a sudden it's going
8 through legislation, it looks like it's going to happen. And
9 I, for one, I am for it. But me being led in the blind or in
10 the dark, left in the dark as we are, I'm a little concerned
11 and I'm getting more and more concerned every day. So I don't
12 know if this is the proper time to bring it up, but this is
13 the only time I've ever had to speak to anybody that has to do
14 with this big project that's going on. And I'd like to see a
15 little bit more interaction with the four or five homeowners
16 that are stuck right in the middle. I mean you own both sides
17 of me. So I'd really appreciate letting us know what you're
18 doing. This is not really enough.
19 MS. GREEN: Thank you. Cesar Loraca.
20 MR. LORACA: Good evening everybody. I want to thank the
21 Bureau and I want to thank the tribe for giving us this
22 opportunity to talk to you about what's happening in our
23 county and what's happening with our properties. The reason
24 why I thank you is because we also have been living here for a
25 number of years. I've been living in the county since '76. I

1 (By Loraca, Cesar)
2 raised my family here and I want to continue to live here
3 until the day I die because I love this place.
4 I'm involved with the Federation for the Homeless. I'm
5 the chairperson and the president of an agency that deals with
6 people who are hungry and people who are poor. We are very
7 much in favor of progress. We're in favor of the casinos,
8 we're in favor of our land manifesting itself and giving jobs
9 to people who need the jobs. But one of the concerns that we
10 have is that as these projects are beginning to come on, our
11 land, the inflation, is very high. Now, starting in January,
12 a family, a three-bedroom apartment, will have to pay $920 as
13 a fair market value rate in order to live in this county. We
14 are going to be house out unless we begin to look at our
15 property and look at the values that we have in this county.
16 We are out of housing. Everybody in this county knows that
17 for a while people were coming in, trying to buy new homes.
18 They were not able to buy them. Many people talk about the
19 doctors who want to come in and talk about the people with
20 white collar jobs that want to come in. Of course they're
21 able to afford it. But what about the moderate to low income
22 family people? What about those people who work for Walmart
23 or the people who are now going to be working at Home Depot?
24 Or how about those people who have been working for the county
25 government who make an average of 24, 26,000 dollars a year?

CL-1

1 (By Loraca, Cesar)
2 What about them? Can they afford to live in this county? I
3 beg of you to look at the housing problem in this county. I
4 beg of you to start helping us figure out how to resolve this
5 problem. One single agency cannot handle this massive task.
6 Really, it's going to take all of us in this county to figure
7 out how we're going to be able to live together and how the
8 inflation that's occurred in our properties are going to
9 stabilize and how we're going to be able to serve the people.
10 The reason why we're building the casinos are to help the
11 people who are economically disadvantaged in this county.
12 We're bring it so we can increase our finances in this county.
13 But yet those people who have been living in this county,
14 waiting for the dream to come, are not going to be able to
15 live the dream because we're not going to be able to afford
16 it. So please look into that.
17 MS. GREEN: Thank you. And Dick Riseling.
18 MR. RISELING: Good evening everyone. My name is Dick
19 Riseling. I'm a local farmer. I've been here 31 years.
20 I think this is a wonderful set of issues. I wish there
21 were some response from you folks about how you're going to
22 respond to these issues. These are the issues. Perhaps we
23 might have a different set of priority than the ones listed
24 here. And I'm sure that these are priority, of course, for
25 the business plan.

DR-1

1 (By Riseling, Dick)

2 Where's the business plan for this? We'd like to know
3 how many employees. It's interesting to know that we have
4 3,000 slot machines coming but we'd like to know what's the
5 average wage, what's the profile of the wage from the top to
6 the bottom.

7 Here are some things. Since you don't supply much
8 information, here's some things I wish you would think about
9 and I will put these in writing to you surely before the 19th.
10 I'm sure most of you are aware, and those aren't should be,
11 that the congressional authorized commission study on gambling
12 in the United States, casino gambling in particular, came out
13 with a set of recommendations.

14 Its first recommendation was that casino gambling
15 throughout the United States should have a moratorium. There
16 should be no expansion of gambling of any kind throughout the
17 United States.

18 A second part of that recommendation was that we should
19 recriminalize. That is, wherever there is a slot machine or a
20 video lottery terminal, slot machines should be
21 recriminalized. Wherever they are, they should be shut down.
22 Shut down. They should no longer be allowed to function
23 anywhere.

24 The third one was a very, very important finding for this
25 particular group tonight and this particular project and the

1 (By Riseling, Dick)
2 others before and after it. And that is a very, very
3 significant finding that the cost benefit analysis, the EAs
4 and the EISs, are normally not worth the paper they're written
5 on. I would reference Mr. Earle Grenolds who often testifies
6 before congress and a commission from Tennessee, and John
7 Kent, a professor with the University of Illinois, for
8 everyone who has an issue or a stake in this to read their
9 documents. They're easily to be found and I'll be glad to
10 give reference. I know that our county officials can. I know
11 they're under study here by our county now. Now, not before.
12 We've got the cart before the horse. I'm an organic
13 horse-powered farmer. I put the horse up in front and the
14 cart behind. We've got the cart up in front here. We've had
15 it up here for years. We need information before we can give
16 you public comment so the only public comment I can give you
17 is that you should be aware that these studies are out there.
18 Our public is not aware. Our public needs to be aware, a rich
19 variety, a great diversity of information. No one knows all
20 the answers here. I, myself, am not opposed to a casino; I am
21 not. But I really am for, emphatically, a wider sharing and a
22 much more effective sharing of the information about the
23 impacts of the casinos.
24 Here are just a couple of examples, hundreds and hundreds
25 and hundreds of studies. We know that a slot machine, on

1 (By Riseling, Dick)
2 average, generates $500 a day. If you have 3,000 slot
3 machines how much is that per day, how much is that year per?
4 Well, on an annual basis, about 45 million. No. 450 million,
5 a little less than half a billion bucks.
6 We do know that we have a lawsuit going forward in the
7 Appellate Division in New York State with an argumentation
8 next scheduled for December 16th which claims, it may not
9 prevail, it hasn't prevailed in the past but it may prevail as
10 it moves up to the Supreme Court level, saying that the New
11 York State Constitution strictly prohibits gambling in New
12 York State. Now, there are other points of view about that.
13 The courts will decide that. But even when the courts decide
14 whatever they decide, that doesn't decide the issue. We are
15 prohibited, as citizens here in Sullivan County, by state law,
16 from having a referendum on this issue. We have not had a
17 voice. We have not had any mechanism whatsoever, ineffective
18 or effective, of finding out what our people really think.
19 But to the contrary, we have many very emphatic, very
20 enthusiastic comments from county leaders saying that
21 everybody in Sullivan County is very enthusiastic, or the
22 great majority, whatever the words are, but certainly the
23 great majority are very much for casinos. I'd like to know
24 what the people think. And I'd like to know that everyone
25 here in this room, especially the Bureau of Indian Affairs and

(By Riseling, Dick)

the managers and proponents of this project, I'd like to think that they think that's a very, very important question. And I think they should show great interest in that answer.

Here's a study about 55 native American casinos, all operating on their own territory. There's no doubt about economic growth, folks. They went from 100 million to 8.62 billion in seven years. Lots of money. Over that ten year period, grinding poverty on those reservations actually became worse and there was a net negative employment. Despite an explosion of money, from 100 million to 8.62 billion, there was a net decline on the reservation and in the 35 mile feeder area, a net decline of employment of 5 percent. That's not economic development folks. Okay?

DR-2

There are lots of things we have to talk about. We know we've done the cost factoring here for the Monticello School. After we get the tax levy from -- say there's 10,000 casino jobs coming in here. Say two-thirds of those, 7,500 of those, something like that, come to live here. We know how many jobs that will be so then we know how many people will have children coming to our schools. Then we assume the tax levy on the educational side. We still have an unfunded deficit of over $9,000 per child. Where's that going to come from, our economic tax basis? There are many, many issues like this.

DR-2

We know that in general population six-tenths of one

1 (By Riseling, Dick)
2 percent of people are addictive gamblers. We know if you give
3 access across the nation, especially in groups that have
4 demographics like we have here, in Minnesota and Arkansas and
5 Mississippi, which we have all kinds of studies, I'll be glad
6 to share them with anybody who wants here, it's about 2.5
7 percent. There are many, many issues here about the
8 mitigating cost, whether it's transportation, whether it's
9 social pathology issues, whether it's public safety, whether
10 it's health care. There's a great deal that has to be talked
11 about here. We would like very, very much, be very excited
12 and very enthusiastic about receiving information about what
13 are the mitigating factors here, what do you think it's going
14 to be. We are all responsible. We're taught that as
15 children: Be responsible for what we cause to happen. Let's
16 get this information out. Let's get it forward. There may be
17 some issues that are contested. But above all, let's be our
18 best. Let's talk to each other, let's provide this
19 information. This information is basically lacking here. We
20 definitely have the cart before the horse.
21 I'll put the rest of my comments in writing, and I thank
22 you very much, gentlemen and ladies, for coming tonight. I
23 honor the work you do. Public service is the most honorable
24 thing that I've ever heard of. I thank you for your
25 attention.

OR-3

(By Newberg, Janet)

MS. GREEN: Thank you. Janet Newberg.

MS. NEWBERG: Hi. I'm co-chair of an environmental group called SPECS. Our group SPECS, Special Protection of the Environment for the County of Sullivan, is a not-for-profit corporation deeply committed to the environmental issues in our community.

We are concerned about the potential negative effects of this project on the ecology of the Neversink River and its habitat. We are requesting a well communicated public hearing. We urge a thorough review by your agency of this application to protect the beauty and environmental health of this precious natural resource. We need your expertise to ensure that this massive commercial development will not negatively impact the environment.

JN-1 Two of SPECS' specific concerns regarding the proposal are that the natural habitat of preexisting wetlands cannot adequately be replaced by newly created ones and that the

JN-2 increased traffic will have a negative effect on the general environmental health of the Neversink River and the lands that surround it.

The Nature Conservancy has additionally advised us of concerns for the wildlife and fish life which we believe will be impacted by this project. The Neversink is a tributary of

JN-3 the Delaware River and this project could have far-reaching

(By Newberg, Janet)

consequences.

We thank you for your attention and your help. Thank you.

MS. GREEN: Thank you. Is there anybody else who would like to make comment now?

MR. BARRONE: Yes.

MR. CHANDLER: Please sign in.

MR. BARRONE: Hello. My name is John Barrone. I'm an attorney representing the Theodore Gordon Fly Fishermen. We are a well-known organization here in Sullivan County, about 400 members strong.

As one suspects, we have environmental concerns, similar concerns, so I'm not going to repeat everything that she had just said. But mainly with the Neversink River, the Delaware River. This area is well-known throughout the country for its trout fish. It brings in many fly fishermen, many fishermen in general. We do have concerns that this casino will have an adverse effect on the environment and as of now are opposed to it. Hopefully, a public hearing could give us more information as to the environmental impact it will have. We'd like to make our opinion clear in the Environmental Impact study.

Just to reiterate, there is historical significance with this area. Many fly fishermen actually help the economy in

JB-1

1 (By Barrone, John)
2 the area by coming in throughout the spring and autumn seasons
3 so there is a competing economic issue here between your fly
4 fishermen that you bring in and between the casino, what that
5 will bring in.
6 That's all. Thank you.
7 MS. GREEN: Is there anybody else?
8 (No response.)
9 MS. GREEN: Are you sure?
10 MR. SORENSON: My name is Alan Sorenson. I'm a resident
11 of Rock Hill.
12 The observation, one thing I see in the scoping document
13 is that you will take into consideration the cumulative impact
14 of the three casinos as proposed. The one thing that I would
15 ask, especially as a resident of Rock Hill, is that in that
16 analysis, if there are any plans to widen Route 17 to three
17 lanes that that be looked at very carefully. In Rock Hill in
18 particular, adding an extra lane, travel lane in either
19 direction, would destroy our environment. It would remove the
20 very limited buffer between the residences in the Lake Louise
21 Marie community and our community in Emerald Green. That
22 would give me very grave concerns, not to mention the amount
23 of blasting and whatnot that would be needed to happen in Rock
24 Hill alone just to accommodate traveling in either direction.
25 If the discussion does lead to that direction due to the

AS-1

AS-2

(By Sorenson, Alan)

magnitude of the amount of development that's proposed, I would recommend an alternative which would simply be to reduce the magnitude of the development proposed so that the traffic can be accommodated with the existing two travel lanes in either direction. Thank you.

MR. CHANDLER: Anyone else?

(No response.)

MR. CHANDLER: If we have no other comments, we'll close out the meeting. You have until the 19th to send me your comments. What we're going to do with that is that I'll compile all the comments. We'll have the contractor for the tribe to ensure each one of those is addressed in the EIS, to make sure your voice has been heard and that they will be addressed.

Thank you for coming. Have a good evening

(Time noted: 7:32 p.m.)

* * *

Appendix A-2

Written Comments

THE ASSOCIATION OF MONTICELLO CLERGY

THE REV. GENE M. SMITH, CONVENOR
445 BROADWAY
MONTICELLO, NY 12701
TELEPHONE & FAX (845) 794-7043

December 5, 2003

Mr. Franklin Keel, Regional Director
Bureau Of Indian Affairs, Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214 Fax (615) 467-1701

Re: Proposed Casino for Stockbridge-Munsee Band of Mohicans

Dear Mr. Keel:

I am writing to express strong opposition to the above project. "Environmental impacts" are not only roadways, streams, school enrollments and sewage systems, but also the human environment–and the impact of casinos on the Monticello community would be tragic. AMC-1

The increase in drugs, prostitution and sexually transmitted diseases, street crimes, family abuse and related social ills already so well documented in other communities where casinos have been established would be particularly cruel to Monticello, which already has an AIDS/HIV rate second only to New York City, crime and family abuse levels that already have jails stuffed beyond capacity, and with fully 1 in 4 people living below the poverty line–precisely the prey that casinos exact their profits from and create new generations of poverty and abuse.

Gambling requires that someone must lose so that someone else can win. Monticello already has vast pockets of persons requiring treatment and counsel for the very conditions that casinos would breed. Please do not knowingly contribute to the further festering of an ugly–but not irreparable–situation by siting the proposed casino in this community.

Sincerely,

Rev. Gene M. Smith, Pastor, The United Methodist Church Of Monticello

GMS:s

TOWN OF THOMPSON
CONSERVATION ADVISORY COUNCIL

Town Hall, 4052 Rt. 42, Monticello, N.Y. 12701
Phone: (914) 794-2500

December 15, 2003

FRANKLIN KEEL
REGIONAL DIRECTOR
EASTERN REGIONAL OFFICE
BUREAU OF INDIAN AFFAIRS
711 STEWARTS FERRY PIKE
NASHVILLE, TENNESSEE 37214

Re: Proposed Stockbridge-Munsee Casino, Sullivan County, New York

Dear Mr. Keel:

We the Conservation Advisory Council of the Town of Thompson are writing to you in regards to the proposed Stockbridge-Munsee Casino in the Town of Thompson.

The group of individuals comprising this organization each has their own personal opinion regarding gaming in Sullivan County. However, all members are committed to the protection of the environmental health of our town.

This is a very large project that encompasses many wetland areas and is in very close proximity to a major waterway, the Neversink River. These natural features could be adversely impacted during the construction and post construction phases of this project. We are asking that during your environmental impact study for this project, that extra measures above and beyond the usual are considered and taken to protect this environmentally sensitive region. TTCAC-1

In addition to the location of this project itself, the Neversink River shortly after passing through the project location enters a pristine, primitive region, the Neversink River Unique Area. This portion of the Neversink River Valley's environment is very much today as it was when the ancestors of the proposed project were its main inhabitants. It would be a sad irony if this area were adversely affected by a project of an Indian Tribe.

Please keep our group informed of any future meetings or other developments in regards to this project.

DEC-23-200

Thanking in advance for your considerations regarding this project.

Very truly yours,

James Green,
Chairman, Town of Thompson C.A.C.

cc: Anthony Cellini, Supervisor, Town of Thompson
Stewart Satenstein, Councilman, Town of Thompson
William Rieber, Councilman, Town of Thompson
John Washington, Councilman, Town of Thompson
Sharon Jankiewicz, Councilman, Town of Thompson
James Lyttle, Chairman, Town of Thompson Planning Board

JG/ga

New York State Department of Environmental Conservation
Division of Environmental Permits, 4th Floor
625 Broadway, Albany, New York 12233-1750
Phone: (518) 402-9167 • **FAX:** (518) 402-9168
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

RECEIVED
DEC 19 2003

December 15, 2003

Franklin Keel, Regional Director
Eastern Regional Office
Bureau of Indian Affairs
711 Stewarts Ferry Pike
Nashville, TN 37214

Re: **Proposed Stockbridge-Munsee Casino**
Town of Thompson, Sullivan County
(DEC No. 3-4846-292/1)

Dear Mr. Keel:

The Department of Environmental Conservation submits the following comments regarding the environmental impact statement being prepared for the Stockbridge-Munsee Casino to be located off County Route 161 in the Town of Thompson, Sullivan County, New York.

Department staff have met with consultants and attorneys preparing the environmental assessment for the proposed casino. The Department also received and reviewed a Final Environmental Assessment dated July 15, 2003 for the Stockbridge-Munsee Casino.

Some of the following comments may have been provided in the past, but the Department has not received an adequate response to ensure that issues will be suitably characterized and evaluated in the upcoming environmental impact statement. The Department provides the following comments for consideration in scoping and preparing the environmental impact statement:

- The Bureau of Indian Affairs (BIA) has not taken into federal trust the land on which the proposed casino is to be located and no compact exists between the state and the Stockbridge-Munsee Community, Band of Mohican Indians of Wisconsin. Accordingly, it is our position that we have regulatory jurisdiction under New York State Environmental Conservation Law (ECL), and that we have the authority to grant or deny Water Quality Certification under Section 401 of the Clean Water Act. 1

- The conceptual SWPPP adequately addresses the general requirements of the State Pollution Discharge Elimination Systems (SPDES) General Permit (GP) for Storm Water Discharges from Construction Activity (GP-02-01). However, due to the sensitive nature of the 2

receiving waters (the Neversink River), the Department would like to point out that the conceptual preliminary SWPPP lacks the project details necessary to evaluate the SWPPP's compliance with the SPDES GP. Prior to starting construction, the applicant must develop a detailed SWPPP. Additionally, that SWPPP must identify any chemical product that may be used as a flocculent at the site. The use of the product must be authorized by this Department.

- The wastewater flow projections indicate that this project will be almost identical in size to the Mohegan Sun casino. The projections then proceed to provide water consumption figures. Use of the other casino as a model is acceptable, but there needs to be a breakdown based upon number of hotel rooms, typical occupancy rates, square footage of gaming areas, number and type of eateries (24-hour, fast food, conventional restaurant, employee cafeterias, etc.), with their number of seats, and so on. The statement "almost identical", may be obscuring minor differences that might be quite significant. We want to compare these figures to our design standards, which requires a much more detailed breakdown than that provided in the Appendix. There may be other factors that need to be specified, for example: does Connecticut have a law requiring water conserving fixtures, and how does it compare to New York's statute? If they are using lower use fixtures at Mohegan Sun than would be the case in New York, a corrective factor would need to be applied. 3

- Average daily flow is based upon a definition contained in the local ordinance that doesn't correlate with the Department's definition. Although the difference may appear inconsequential it may, in fact, be significant particularly when applying a peaking factor. 4

- An average daily wastewater flow of 80 gpd/room is projected for the hotel portion, with a peak of 128 gpd. This is compared to the Department's standard of 120 gpd. The Department's design standard is 120 gpd/room <u>average</u>, not peak. Use of water conserving fixtures may reduce the average to the 120 gpd/room rate, still considerably above the rate of 80 gpd/room. 5

- The peak flow (whether daily, hourly, or instantaneous) would be considerably more than the 80 gpd. The peak factor of 1.6 appears to be low. "Ten States Standards" specifies a peaking factor of 3.0 (hourly peak to daily average) for a population of 10,000, and increases to over 4.0 for a population under 1,000. These factors are consistent with observed patterns and typical design factors for a conventional hotel. The casino, having a somewhat different type of operation, may use a different calculation, but a peaking factor that is only half of the normal would not be expected. The smaller the population, the greater the peaking factor since a few individuals represent a greater percentage of the total and slight variations by small groups are magnified. 6

- A map showing the route of the preferred alternative sewer line would be useful, with a clearly demarcated location for the limits of ownership (tribal / municipal). 7

- The discussion of cumulative impacts (section 5.11) should address potential induced growth along the proposed sewer route. Currently it only addresses the existing homes and commercial establishments, without acknowledging the greater density of development that would be made possible by the presence of sewers on otherwise marginal properties that, because of access to the sewer line, now may be developed and are likely to attract other businesses as a result of the proximity to the casino. 8

- When discussing the capacity of the sewer plant the Environmental Assessment mentions the other proposed casinos and the Concord Hotel. The Concord has been essentially shut down 9

for the last several years. It is already in the sewer district, with several connections, so it would be exempt from any review or approval from the department. Apparently the Concord already has some sort of local approval to reconstruct up to 1,500 rooms, and news articles indicate that they may be partnering with another tribe to establish a casino there. Even without a casino the hotel would represent some 200,000 gpd of sewage flow. There may be other casinos opting to tie into the same sewage treatment plant. Although there is currently excess capacity, the discussion as to how much there is and how it may be utilized (including how to resolve any conflicting demands) remains inadequate and inconclusive. 10

- According to the assessment, construction will involve the excavation and blasting of 1,500,000 cubic yards of overburden and rock with 751,000 cubic yards of fill material needed to implement the project. No explanation is provided for the disposition of the 749,000 cubic yards of excess cut material. While mention is made of the impacts associated with the prior on-site sand and gravel mine, the excavation associated with the casino construction far exceeds the total extraction quantity from the mining operation during the entire projected 20 year life of mine period. The potential impacts associated with cuts and fills of this magnitude are substantial and could endanger the Neversink River, one of the most significant water resources in the region. The extraction of minerals will either require a Mined Land Reclamation permit or a formal, written exemption for in aid of on-site construction. 10

- The environmental assessment acknowledges "some moderate visual impacts" but contains no visual assessment or definitive proposal to mitigate these "moderate" impacts. The DEC website (www.dec.state.ny.us) contains guidance on the preparation of visual assessments. A view shed analysis with a minimum radius of 5 miles should be prepared based on the height of the proposed hotel. 11

Thank you for the opportunity to provide comments on this project. Please call me at (518) 402-9154 if you require any additional information.

Sincerely,

Charles B. Gardner

Charles B. Gardner
Environmental Analyst II

c. M. Moran
T. O'Connor
M. Naughton
P. Duke
V. Altieri
J. Isaacs
J. Sansalone
R. Martin
P. Ferracane
J. Gregg
A. Green
K. Chandler

United States Department of the Interior

NATIONAL PARK SERVICE
Upper Delaware
Scenic & Recreational River
RR 2 Box 2428, Beach Lake PA 18405-9737

DEC 19 2003

IN REPLY REFER TO:

N1618 (UPDE RM)

December 16, 2003

Mr. Franklin Keel
Regional Director
Bureau of Indian Affairs Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Dear Mr. Keel,

The Stockbridge-Munsee Band of Mohicans casino proposed to be built along Rt 17 in the Town of Thompson, New York has a potential to impact the Upper Delaware Scenic and Recreational River. The Upper Delaware Scenic and Recreational River, a component of the National Wild and Scenic Rivers System, is a 73.4 mile section of river extends from the confluence of the East and West Branch of the Delaware River at Hancock, New York downstream to Sparrowbush, NY.

The flow of water in the Upper Delaware River is influenced by a very complex system of dammed and un-dammed tributary releases that are mandated by a Supreme Court decree. This complex river release system includes the Neversink River which could be influenced by the construction of the above mentioned casino.

Our main concern is any additional flow coming from the Neversink could count toward the minimum base flow required at the Montague USGS river gauge. If this were the case additional flows from the Neversink would mean less water being released from upstream impoundments. Less flow in the Upper Delaware section of this Wild and Scenic River could adversely affect recreation activities and/or aquatic life and habitat within our area of federal concern. NPS-1

Thank you for the opportunity to comment on this potential impact. If you have any further questions, please feel free to contact me at 570-729-8251.

Sincerely,

David C. Forney
Superintendent

12/18/03

Attn Mr. Keel,

I recently moved out of Brooklyn to Swan Lake N.Y. I wanted to leave the crime, traffic and pollution behind! GT-1

Please - I implore - put a stop on the Casino in the Catskills!! Let the Indians have all the gambling they want on their own territories!!

If you have any comments you can reach me at 845-292-9238 or 917-613-7005.

Thanking you for your consideration,
I remain,

Gedalye Teitelbaum

THEODORE GORDON FLYFISHERS

Theodore Gordon Flyfishers Inc.

P.O. BOX 2345, GRAND CENTRAL STATION, NEW YORK, NY 10163-2345

RECEIVED
DEC 19 2003
By

December 18, 2003

Speers

VIA FAX and FEDEX
Mr. Franklin Keel
Regional Director, Eastern Regional Office
Bureau of Indian Affairs
711 Stewarts Ferry Pike
Nashville, Tennessee 37214

Re: Environmental Impact Statement for the Proposed Stockbridge–Munsee Casino, Sullivan County, New York

Dear Mr. Keel:

I write on behalf of the members of the Theodore Gordon Flyfishers (TGF) regarding the proposed gambling casino in the Town of Thompson, Sullivan County, New York. Our organization has been assisting communities throughout the Catskill region for decades in handling various issues, including, but not limited to, environmental conservation. Based upon our review of the public notices for the subject gambling casino and the Environmental Assessment (EA) that was released for public comment in December 2002, our organization is deeply concerned about the reasonably foreseeable detriments to water quality, fish and wildlife habitat, wetlands, conservation, aesthetics and historical and recreational preservation associated with this development. Therefore, we hereby demand that the issues and alternatives raised in this letter be addressed in the subject Environmental Impact Statement (EIS) and we request a public hearing to fully assess the impact of this project to the overall public interest.

Clearly, the proposed development outlined in the public notices and the EA could have a devastating impact on the Neversink and Delaware Rivers as well as the fish in these rivers and the wildlife of the surrounding area. This development could forever change the Catskills as a symbol of New York's natural beauty and place of historical significance to those of us who treasure the outdoors. The Neversink, along with the Delaware River into which it flows, are both world class trout streams that support sizable wild trout populations. However, these sensitive ecosystems could easily be destroyed by the plainly foreseeable negative impacts on water quality caused by the location of this project literally on bank of the Neversink River.

Water quality is the single most important element for a healthy trout population. The current temperature and sediment levels in the Neversink River are critical for trout propagation and survival, and essential for the continued reproduction of the many insect species which are a

crucial food source for the trout. Simply put, trout and the insects on which they feed need cold, clear water and a sediment free riverbed to live. As it is, the Neversink already has problems maintaining cold temperatures and adequate water levels during the hot summer months (mainly due to inadequate cold water releases from the Neversink Reservoir) and any increase in water temperatures or decrease in water levels will have a devastating impact on the river as a trout fishery. The ecosystem is so delicately balanced right now that there is simply no buffer that will allow it to absorb the changes that will occur if the casino is built at the proposed location.

Currently, surface water and ground water within the subject location flow east toward the river, but these water flows are filtered and quantity levels that reach the Neversink River are reduced by the natural vegetation and wetlands that will be displaced by the casino development. Given the incredible size of the paved surfaces and roofing surfaces associated with the proposed casino, storm water runoff and flooding will create water flows that will significantly raise water temperatures and gather large quantities of sediment from those surfaces and deposit them in the river. Such particulate and thermal pollution from the proposed development will inevitably cause increased water temperatures, turbidity and sedimentation in the Neversink River that is unavoidably associated with a land use of this size. Another related issue is soil erosion, which will considerably rise due to the removal of natural vegetation and the increased water flows. The surface water runoff and increased flow of ground water associated with such large buildings and parking lots will quite likely ruin this valuable trout habitat and will affect the trout populations of the Delaware River. These issues must be dealt with thoroughly and scientifically in the EIS. TGF-1 2 3

Another concern we have in this area is where the water comes from that will be required to operate the casino, hotel and associated buildings and how, where and in what condition waste water will be returned to the watershed. Water supply and usage at the site could have a severe effect on the Neversink fishery because it could reduce water levels that are already minimal at certain times of the year. Wastewater treatment is important from our perspective because it, like lower water levels, can affect water temperatures in the river. These issues must be fully addressed in the EIS. 3

Due to the sensitivity of the Neversink fishery and the fact that this fragile ecosystem is already stressed by current circumstances as outlined above, TGF insists that a detailed and complete hydrologic and geomorphic study[1] be included in the EIS in order to accurately assess the current conditions of the Neversink River as a fishery. 4

Throughout Section 4.2 of the EA, the report addressed impacts caused by ground and surface water flows, but such analyses lacked adequate detail and in general, the expectations of controlling, minimizing and improving current conditions regarding all direct impacts to the Neversink River seem quite unrealistic and overly optimistic. Also in Section 4, the EA stated that without the proposed development, the site location would continue to be subjected to sediment accumulations that have been enhanced by local mining operations. However, the EA fails to accurately compare the impacts of current conditions, in which trout populations have thrived, to the probable negative impacts that shall be caused by the construction and operation 1

[1] Similar in scope and detail to the Trout Unlimited study published in December 2002 for the nearby Beaverkill and Willowemoc Rivers entitled "Beaverkill-Willowemoc Watershed Initiative." We can provide a copy if necessary.

of the proposed development. Finally, the EA failed to provide detailed sections in the report regarding any viable alternatives, such as moving the project site to other locations. Such omissions are inexcusable and the question still remains as to why this development must be built 100 feet from the Neversink River and cannot be moved at least several miles from the Neversink watershed to minimize the effects on the river and its watershed. TGF-5

The Neversink watershed is also unique because its marshes and meadows harbor over 132 species of birds (including osprey and bald eagle), 17 reptile species and 14 amphibian species as well as the greatest diversity of freshwater mussels in the Delaware River basin. Of particular interest are the federally endangered dwarf wedge mussel and the state-threatened brook floater. In addition to several trout species, including wild trout, there are more than 40 other fish species in the Neversink, including migratory fish such as American shad, blueback herring, alewife, striped bass and American eel. The Neversink's rich and varied collections of insect species, particularly dragonflies, are an excellent indicator of a healthy habitat. The river and wetlands which will be destroyed by this development took nature eons to build and cannot be effectively substituted in a few short months by the suggestions listed throughout Section 4 of the EA for replacement of vegetation and wetland loss. The impact of the proposed development on each of these species must be covered in adequate scientific detail in the EIS. 16

Another foreseeable problem caused by the subject project is the incredible amount of traffic that will crowd Route 17/Interstate 86 to bring gamblers to the casino and consequently will introduce pollution that can only have a negative impact on the air, water and tranquility of the area for miles around. To us, there is no reasonable aesthetic comparison between a beautiful quiet Catskill trout stream and the noise, congestion and tawdriness of a casino. In balancing the detriments against the benefits, the greater public good would be served if alternative sites were chosen for the proposed casino. Traffic and its associated water, air and noise pollution must be fully addressed in the EIS. 17

Finally, due to the numerous foreseeable negative impacts mentioned above, the continued preservation of one of the most unique cultural and recreational resources in Sullivan County is in serious jeopardy. The trout streams of the Catskills, and the Neversink River specifically, are world renown as the birthplace of American flyfishing and the home waters of our namesake, Theodore Gordon, who is widely viewed as the father of flyfishing in the United States. The trout streams of the Catskills attract thousands of fishermen each year because of the historical and aesthetic values of the region and the quality of the trout streams as fisheries. Any negative impacts to the trout habitat in the Neversink will have far-reaching effects which could devastate fishing, and the many aspects of the local economy related to it, throughout Sullivan County. 18

The possible impacts to the significant cultural resource of flyfishing in Sullivan County are almost completely ignored by the EA. Section 4.11 of the EA states, "there are no recreational facilities on the project site." However, some of the best fishing water on the Neversink is right at the Thompson Bridge and downstream of the proposed site in the pristine Neversink Gorge. The Neversink Gorge is truly one of the most beautiful places in New York State and it must be protected. The EA fails to consider the negative impact to recreational flyfishing in the Gorge, fishing at public access points along other parts of the Neversink and the 18

fishing at access points along the Delaware River, into which the Neversink River flows. If the fisheries of the Neversink suffer at the project site, then fishing throughout the watershed will suffer. Such shortsightedness by the EA displays the glaring problems of the report. Our organization expects to see accurate, detailed and unbiased information in the EIS regarding the issues mentioned throughout this letter and the various issues raised by other concerned groups and individuals.

We understand the government's desire to assist the Stockbridge-Munsee Community, but we believe that noble goal can be accomplished by acquiring land for the casino elsewhere in the state – well away from the rivers in the Delaware watershed. The large tract of land at the defunct horse racing track not far away in Monticello, New York comes to mind as a potential alternative site. In addition to being a single large property, that site is not close to any major rivers or streams and has better highway access than the proposed site. 19

TGF will be monitoring this proposed project with great interest and will do whatever is necessary to protect the historical, unique and ecologically sensitive rivers of the Catskills. Please inform us of all future public hearings and opportunities to comment on the project or the approval process. Thank you for your time and consideration.

Sincerely,

Terrence E. McCartney
Chairman, TGF Conservation Committee

cc: Governor George E. Pataki (via Phillip Perrone)
Commissioner Erin M. Crotty, NYS DEC
James H. Cannon, US Army Corps of Engineers, NY District
Mario A. Paula, US EPA, Region 2, Water Programs Branch
Charles Gauvin, President/CEO, Trout Unlimited (National)
Steven J. McCormick, President, The Nature Conservancy

Upper Delaware Council

P.O. Box 192, 211 Bridge Street, Narrowsburg, New York 12764-0192 (Tel.) 845-252-3022 • (Fax) 845-252-3359

William E. Douglass, Executive Director • David B. Soete, Senior Resource Specialist
Laurie Ramie, Public Relations/Fund Raising Specialist • Carol Coney, Office Manager

December 19, 2003

FRANKLIN KEEL, REGIONAL DIRECTOR
EASTERN REGIONAL OFFICE
BUREAU OF INDIAN AFFAIRS
711 STEWARTS FERRY PIKE
NASHVILLE TN 37214

RE: Draft EIS for the Proposed Stockbridge-Munsee Casino, Sullivan County, NY

Dear Mr. Keel:

The Upper Delaware Council (UDC) is aware from a notice in the November 20, 2003 issue of the *Federal Register* that "*the Bureau of Indian Affairs (BIA), with the cooperation of the Stockbridge-Munsee Community, Band of Mohican Indians (Tribe), intends to gather the information necessary for preparing an Environmental Impact Statement (EIS) for the proposed Stockbridge-Munsee Casino, Town of Thompson, Sullivan County, New York. The purpose of the proposed action is to help the Stockbridge-Munsee Community meet tribal economic needs and to serve as one part of the land claim settlement between the Tribe and the State of New York. This notice also announces a public scoping meeting to identify potential issues and content for inclusion in the EIS.*" We understand that the comment deadline is December 19, 2003, so we are sending this letter via telefax.

As stated in the notice:

> *"The Tribe proposes that 333 acres of land into trust on behalf of the Tribe, on which the Tribe, through a development agreement with Trading Cove New York, proposes to build a casino. The property is located on County Highway 161 at State Route 17, Exit 107, in the Town of Thompson, Sullivan County, New York. The project would consist of a 584,000 square foot casino and supporting facilities, including food and beverage outlets, retail facilities, a service station, a warehouse and parking, to be constructed entirely on the proposed trust acquisition. In a second phase of the proposed project, a hotel would be built immediately adjacent to the casino."*

The UDC concurs with the National Park Service that the proposed casino has the potential to impact the Upper Delaware Scenic and Recreational River. The flow of water in the Upper Delaware River is influenced by a very complex system of dammed and un-dammed tributary releases that are mandated by a 1954 Supreme Court decree. This complex river release system includes the Neversink River which could be influenced by the construction of the above-mentioned casino.

Our main concern is any additional flow from wastewater effluent discharges and stormwater runoff coming from the Neversink River could count toward the minimum base flow required at the Montague USGS river gage. If this were the case, additional flows from the Neversink would mean less water being released from upstream New York City impoundments, particularly Cannonsville reservoir. Less flow in the Upper Delaware section of this National Scenic and Recreational River could adversely affect recreation activities and/or aquatic life and habitat within our area of federal concern.

UDC-1

We are also concerned about the quality of the water from wastewater effluent and stormwater runoff which may be discharged to the Neversink River and enter the Delaware River. There is a population of state and federally-endangered dwarf-wedge mussels which could be adversely impacted. Other aquatic life in the rivers could also be adversely affected. UDC-2

The Upper Delaware Council is the oversight body responsible for the coordinated implementation of the River Management Plan for the Upper Delaware Scenic and Recreational River, a component of the National Wild and Scenic Rivers System. Our voting members are the two states (NY and PA) and eleven local governments (NY Towns and PA Townships) which border on the Upper Delaware River. The Delaware River Basin Commission (DRBC) is a non-voting member of the Council. We operate under a direct contractual relationship with the National Park Service for the oversight, coordination, and implementation of many elements of the River Management Plan.

Please add the Upper Delaware Council to your list of interested parties for this proposal.

Thank you for the opportunity to comment on the scoping process for this Draft EIS.

Sincerely,

William E Douglass

for Harold G. Roeder, Jr.,
Chairman, UDC Project Review Committee

cc: Hon. Charles Schumer, US Senator NY
Hon. Hillary Clinton, US Senator NY
Hon. Arlen Specter, US Senator PA
Hon. Rick Santorum, US Senator PA
Hon. Sue W. Kelly, US Congresswoman NY 19th District
Hon. Maurice D. Hinchey, Jr., US Congressman NY 22nd District
Hon. James T. Walsh, US Congressman NY 25th District
Hon. Donald Sherwood, US Congressman PA 10th District
Hon. George E. Pataki, Governor, New York
Hon. Edward G. Rendell, Governor, Pennsylvania
Hon. Michael R. Bloomberg, Mayor, New York City
Hon. John Bonacic, NY State Senator 42nd District
Hon. Charles D. Lemmond, Jr., PA State Senator 20th District
Hon. Aileen Gunther, NY State Assemblywoman 98th District
Hon. Clifford Crouch, NY State Assemblyman 107th District
Hon. Jerry Birmelin, PA State Representative 139th District
Hon. Sandra J. Major, PA State Representative 111th District
Jane M. Kenny, Regional Administrator, US EPA - Region 2
Donald S. Welsh, Regional Administrator, US EPA - Region 3
Christopher Ward, Commissioner, NYC DEP
Carol Collier, Executive Director, DRBC
Gary Paulachok, Deputy Delaware River Master
William Rudge, NYS DEC and UDC Rep.
Wayne Elliot, Fisheries Manager, NYS DEC
Marian Hrubovcak, PA DCNR and UDC Rep.
David Lamereaux, PA DEP and UDC Alt.
Ross B. Decker, Mayor, Port Jervis
James Chandler, Supervisor, Town of Deerpark
Richard V. Gassmann, Mayor, Matamoras
Kenneth L. Thiele, Chairman, Westfall Township Supervisors
David Forney, Superintendent, National Park Service - UDSRR
file

December 19, 2003

By Facsimile (615) 467-1701

U.S. Department of the Interior
Bureau of Indian Affairs
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214
ATTN: Franklin Keel, Regional Director

RE: Scope of the Environmental Impact Statement for the Proposed Stockbridge-Munsee Casino, Sullivan County, NY
Comment Period Expiration Date: December 19, 2003

Dear Mr. Keel:

I am writing in my capacity as the Catskill Coordinator of Trout Unlimited (TU), in support of the comments submitted by The Nature Conservancy's Neversink River Program (TNC) on the scope and implementation of the Environmental Impact Assessment to be filed by the Stockbridge-Munsee Community Band of Mohican Indians. TU and the New York Counsel of TU hereby endorse the comments submitted in response to the Draft Environmental Assessment by TNC, and concurs in TNC's views about the issues that were not fully addressed in the Final Environmental Assessment.

TU is a private, non-profit organization dedicated to conserving, protecting, and restoring North America's trout and salmon fisheries and their watersheds. For over 40 years, TU has accomplished this mission on local, state and national levels with an extensive and dedicated volunteer network. Currently, TU has over 130,000 members and 500 chapters nation wide, and over 8,000 members and 30 chapters located in the state of New York.

As an advocate for coldwater fisheries and the watersheds that support them, TU has taken an especially strong interest in the economic and ecological importance of the rivers that make up the Upper Delaware Watershed. The rivers of this watershed, including the Neversink River, make up one of the single most famous fly fishing destinations in the world. The Catskills' fisheries generate tens of millions of dollars for the local economy.

TU fully supports all points listed in TNC's comments, and would like to add additional emphasis on the following areas of concern:

Rocci Aguirre, TU Catskills Coordinator, P.O. Box 337 Roscoe, NY 12776
(607) 498-4671 • http://www.tu.org/trout/ • raguirre@tu.org

1. Adequate case study and evaluation of wetlands as a viable means of mitigation for projects of similar size with similar limited buffer issues. TU-1
2. Detailed standards for constructed wetlands that relate to storm and waste water management and wildlife habitat. 2
3. Detailed monitoring plan for the constructed wetlands as viable mitigation measure. 3
4. In depth analysis of the cumulative impacts of proposed wastewater loadings into the Neversink River. 4
5. Modeling of various environmental impacts, ie. elevated thermal and sediment discharge, on downstream communities, with particular emphasis on Neversink Gorge State Unique Area and its resident population of wild native brook trout. 5

In its current state, the proposed project presents a number of serious environmental issues. The pristine nature and ecological importance of the Neversink River makes any project extremely problematic. TU believes that the Draft Environmental Impact Statement will be incomplete in its evaluation and scope without fully addressing the issues raised by TNC about this project. Please include me in any and all on going dialogues and meeting agendas. I can be contacted at: PO Box 337, Roscoe, NY 12776 (607) 498-4671.

Sincerely,

Rocci Aguirre
Trout Unlimited Catskill Coordinator

The Nature Conservancy

Neversink River Program
One of the Last Great Places

NEVERSINK RIVER PROGRAM
Box 617
Cuddebackville, NY 12729
914-858-2883
Fax: 914-858-2883

Spear

U.S. Department of the Interior
Bureau of Indian Affairs
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214
ATTN: Franklin Keel, Regional Director
Fax: (615) 467-1701

December 19, 2003

RE: Scope of the Environmental Impact Statement for the Proposed Stockbridge-Munsee Casino, Sullivan County, NY
Comment Period Expiration Date: December 19, 2003

Dear Mr. Keel,

I am writing in my capacity as Director of The Nature Conservancy's Neversink River Program to comment on the scope and implementation of the Environmental Impact Assessment to be filed by the Stockbridge-Munsee Community Band of Mohican Indians. This letter builds upon comments submitted in response to the Draft Environmental Assessment, many points of which The Nature Conservancy believes were not fully addressed in the Final Environmental Assessment and therefore may not be addressed in the Draft Environmental Impact Statement.

The Nature Conservancy (TNC) is a private, non-profit organization dedicated to preserving the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. The Conservancy has an interest in this application through its Neversink River Program, a program that has been working to protect and restore biodiversity in the Neversink River Basin for over a decade. The Neversink River Program began as a result of the 1990 discovery of the globally endangered, federally listed dwarf wedgemussel (*Alasmidonta heterodon*). The Neversink supports one of the world's largest and healthiest populations of dwarf wedgemussels and a large population of the swollen wedgemussel (*Alasmidonta varicosa*). The Upper Delaware Basin is the only place known where the two mollusks occur together.

LOWER HUDSON CHAPTER OFFICE: 41 SOUTH MOGER AVENUE • MOUNT KISCO, NEW YORK 10549 • 914-244-1271
recycled paper

In the Bridgeville portion of the Neversink River basin there are several biological elements of concern to The Conservancy's efforts including the assemblage of native freshwater mussels and larger "upper" Neversink River ecological system which is characterized by having a high/moderate gradient and being formed mostly in sandstone, conglomerate, and mudstone bedrock. The physical and biological constraints of the "upper" Neversink ecological system produce a significantly different range of habitat conditions from those found lower in the basin. Further, the floodplain of the mainstem and its tributaries is narrow, and supports a slightly more mesic riparian forest than found at lower elevations, in many areas consisting of northern hardwood species. The "upper" Neversink ecological system still contains populations of native brook trout, and its headwater streams in particular probably contain distinct assemblages of macro-invertebrates due to differences in geochemistry and physical habitat.

To achieve our mission, The Nature Conservancy seeks to "conserve" the diversity of life on Earth. Operationally, The Nature Conservancy interprets the term "conserve" as meaning to maintain or improve the ecological integrity of those species, communities, or ecological systems that are the focus of our conservation efforts.

From The Conservancy's perspective a natural resource has full ecological integrity when all of its important ecological components and processes are intact and functioning within their natural ranges of variation. The composition, structure, and function of all natural resources – species, communities, and ecological systems – are naturally dynamic. This dynamism is, of course not random, but limited to a particular range of variation that is recognized as natural and consistent. The outer limits of this range of variation constitute a critical ecological threshold, outside of which one would expect to observe – or sometimes unfortunately has *already* observed – the natural resource begin to degrade. When these attributes of a species, natural community or lifecycle are significantly altered or eliminated the natural resource either ceases to exist or inexorably transforms into some other type of community or ecological system with very different ecological properties, values, and benefits.

Following are comments covering two main topics: *wetlands and waterways* and *freshwater mussels*. At the end of the discussion of each topic I have listed a *sample* of The Conservancy's current knowledge on ecological thresholds for critical biological, physical or chemical parameters. These thresholds may be useful in assisting with the evaluation of the permit proposal.

Wetlands and Waterways:

The destruction of 1.6 acres of existing wetland (with compensation through on-site mitigation creating 3.7 acres of forested and emergent wetland) and the relocation and destruction of intermittent waterways are both of significant concern to The Nature Conservancy. Generally, assuming that the existing natural wetland is in a fairly good ("natural") condition, it likely provides habitat for a variety of amphibians, birds, and other species as well as serving to retain nutrients and sediment runoff from the surrounding landscape. Although the proposed constructed wetland to be created as mitigation will be larger than the wetland to be filled, its condition, quality and habitat

values are likely to be significantly less (or different) than those found in a natural wetland due to the difficulty involved in constructing wetlands to mimic natural species composition, structure and function. This is especially true in cases where detailed "models" of these attributes have not been developed based on local examples of natural wetlands and riparian areas. At this site, an added difficulty in mimicking natural composition, structure and function is also due to the proposed constructed wetland's location in a narrow band between the casino development and the river.

Furthermore, it appears that the wetland mitigation area will essentially act as a key portion of the stormwater management system for the large impervious surface displayed in this site plan. If this is the case, it may lack the ability to provide critical ecosystem services such as basic filtration functions or wildlife habitat values. Without a better understanding what these values are specifically or how they may (or may not be met) by a constructed wetland, even a 2.5 to 1 mitigation ratio may be inadequate to replace these function and values. **TNC requests that the Draft Environmental Impact Statement include detailed performance standards for the constructed wetland, including standards that relate to both stormwater management and wildlife habitat.** TNC-1

The constructed wetland (described in Section 4.3.2.4 of the Draft EA) is within the 100-year floodplain and should be designed in a manner that takes this into account more completely. Although the Draft EA mentions that the constructed wetland will be impacted only as a backwater, it seems that this will greatly diminish the effectiveness of this wetland in managing stormwater and pollutants Furthermore, few details on type of plantings (species/natural communities, spatial distribution, etc.), monitoring, or adaptive/ongoing maintenance is provided so it is difficult to evaluate the proposed constructed wetland for ecological integrity (composition, structure or functionality) or ecological benefits (some true evaluation of the impact of the proposed mitigation measure). Such a detailed evaluation is critical, since the wetland mitigation site will have a direct outlet to the Neversink River and therefore may have significant impacts on Neversink River and its biota through this wetland area. **TNC requests that the Draft Environmental Impact Statement include modeling of the filtration effectiveness of the constructed wetland during high river flows (10 to 100 year flows) and a detailed monitoring plan for the constructed wetlands viability as a mitigation measure.** -2

The stormwater management plan for the project, outlined in Section 4.2 of the Draft Environmental Assessment, sets appropriate goals but may underestimate the direct and indirect impacts to the Neversink River and its associated wetlands. Water quality and thermal impact from the site are particular concern. The infiltration basins discussed in Section 4.2 can handle a 1-year storm event, yet the proximity of these basins (as well as the water quality basins and swales) to the Neversink River may lead to significant pollutant discharge to the river during a wide range of storm events. Pollutants that infiltrate into groundwater will only move a short distance through alluvial soils before entering the Neversink River, a distance that may be inadequate to filter these pollutants. The effectiveness of infiltration basins are known to be closely related to the infiltration rates of the soils upon which they are located. Infiltration rates that are too high can lead to inadequate treatment while low infiltration rates can lead to clogging of the system.

The Draft EA (4.2.5.1) states that the basins will be placed in "porous soils to maximize the opportunity for groundwater infiltration of runoff." Without tests to determine local soil conditions, it is impossible to determine whether the infiltration rates are adequate to provide sufficient treatment considering the proximity to the river. Finally, infiltration basins, along with other stormwater management techniques, are known to fail by clogging due to inadequate maintenance. **TNC requests that details and schedules of proposed maintenance activities be included in the Draft EIS as part of the stormwater management plan for this project. TNC also recommends that the Draft EIS include a stormwater water quality monitoring program, including goals for pollutant discharge.** This monitoring program should allow for the evaluation of effectiveness of the system during high runoff events. Critical monitoring parameters could include: total suspended solids, pH, specific conductance, hydrocarbons, pesticides, herbicides, and temperature. **Finally, TNC request that the Draft EIS detail the plans for, and quantity estimates of, the application of pesticides, herbicides, road salts, and fertilizers in the project area in order to clearly define appropriate stormwater monitoring parameters.** -3 -4

The preparation of a New York State Department of Environmental Conservation approved Stormwater Pollution Prevention Plan is a critical step in ensuring that stormwater management on the site is protective of the environment. It is also important that an adequate streamside buffer is maintained, to protect water quality and as a wildlife corridor associated with the Neversink River, which currently has a fairly well intact riparian area throughout the watershed. The buffer area between development and the Neversink River is stated, in Section 4.4.1 of the Draft EA, to be at least 100 feet. A 100 foot vegetated buffer is below The Nature Conservancy's draft ecological integrity threshold for riparian buffers (see below) and may be inadequate to meet the water quality goals set out in the Draft EA, especially if the buffer is on a slope or has limited vegetation. **TNC requests that detailed information on the width, slope, and vegetation composition of all stream and wetland buffers be included as part of the Draft EIS.** -5

Ecological Integrity Thresholds: Wetlands and Waterways

Since the current condition and habitat values of the existing wetlands and waterways are only briefly described in the Draft EA (Appendix C) it is difficult to assess the current state of ecological integrity of the wetlands in question and evaluate future potential impacts. Without a thorough assessment of current ecological integrity it is also difficult to assess the ecological benefits and risks of the proposed constructed wetlands versus the natural wetlands on the site or establish restoration goals (or a "desired future condition") for the constructed wetland.

Through literature reviews and working with outside scientists The Nature Conservancy's Neversink River Program has begun to identify critical components to the ecological integrity of riparian and floodplain wetlands in the "upper" Neversink River ecosystem. The following is only a sample of The Conservancy's ecological model and threshold

work. Additional detail and supporting information are available upon request. This work is only mean to provide guidance in evaluating impacts and establishing restoration or conservation "goals":

1. *Native species richness* – the *richness of native (emergent wetland plant species) species* in wetlands of the upper Neversink River ecological system act as an important indicator to the health, or ecological integrity, of wetlands. There are a handful of *specific indicator species*, species which can provide a strong signal of biological condition in a wetland, which should be a component of this suite of native species. Conversely, the *absence of exotic or weedy species* such as purple loosestrife (*Lythrum salicaria*) and phragmites (*Phragmites australis*) is a critical indicator of integrity for natural wetlands.

For native species richness parameters The Nature Conservancy recommends the following draft ecological integrity thresholds for assessing current condition and establishing post construction/mitigation integrity goals:

Native species richness (emergent wetland plant species)	Exotic species dominate; very few native species; most or all native indicator species absent	Mix of native and exotic species; many native indicator species absent; exotics may be common but rarely dominate over native component.	Native species dominate but some typical native indicators absent; some exotics may be present
Absence of exotic or weedy species (% cover of purple loosestrife)	>40%	20-40%	6-19% (<5% optimal)

1. *Hydrochemistry* – Water chemistry parameters such as *specific conductance* (mS/cm at 25°C) and *pH* are especially critical for wetlands in this portion of the Neversink watershed. While these parameters can vary greatly from location to location the range of variability at a given site or location is critical to maintaining the condition of a wetland, its biodiversity and associated habitat values.

For hydrochemistry parameters The Nature Conservancy recommends the following draft ecological integrity thresholds for assessing current condition and establishing post construction/mitigation integrity goals:

Specific conductance mS/cm at 25°C	Average > 2.0	Average >1.5 but less than 2.0	Average equal to 1.1–1.5 at all times
PH	< 5.5 or > 9.0	5.7-5.4 OR 9.4-9.0	6.5-9.3 occasional lower or higher pH readings during large runoff events

2. ***Upland buffer*** – both the *width of perimeter of vegetated buffers* and the *percent of perimeter of vegetated buffer* are important ecological factors for the integrity of smaller wetlands, fens, and waterways in this larger ecological system.

For upland buffer parameters The Nature Conservancy recommends the following draft ecological integrity thresholds for assessing current condition and establishing post construction/mitigation integrity goals:

[illegible]	[illegible]	[illegible]	[illegible]
Upland buffer width (mean in meters)	>60 m	61- 121 m	122-183 m
Percent of perimeter of vegetated buffer	<76%	76-90%	90-100%

Freshwater Mussels and Other Biota:

Negative impacts on the biota of the Neversink River are possible due to the destruction of wetlands, destruction and relocation of intermittent streams, and runoff from site development (either through the constructed wetland or around it). Furthermore, cumulative impacts on fish and wildlife (discussed in Section 5.4 of the Draft EA) from other expected development in the watershed (e.g. Water Park at Holiday Mountain, Mohawk Mountain Resort and Casino) may be significant and seems likely to impact Neversink River biota. **Therefore, TNC requests that assessment of environmental impacts in the Draft EIS include cumulative effect scenarios on the Neversink River from the project site downstream to the river's confluence with the Delaware River.** -6

There are a number of sensitive species to be considered in relation to this Draft EA. Directly adjacent to the site is a population of state threatened mussel, *Alasmidonta varicosa*, the brook floater, classified as a species of concern by the USFWS. This mussel has been found adjacent to the casino site (at its southern end) by The Nature Conservancy and the U.S. Geological Survey as part of unpublished survey work throughout the basin. The brook floater, or swollen wedgemussel, has been found to occur upstream at least Ranch Hill Road and downstream to the Delaware River in mussel surveys completed by TNC, USGS, and David Strayer of the Institute of Ecosystem Studies. *Alasmidonta undulata* and *Elliptio complanata* and *Strophitus undulatus* are other mussel species that have been found directly adjacent to the property by the TNC-USGS search team. Furthermore, the federally endangered dwarf wedgemussel (*Alasmidonta heterodon*) has one of its largest populations in the world approximately 15 miles downstream from this planned development. The proposed actions may put the state threatened *Alasmidonta varicosa*, which is unique in the context of the Neversink River with the federally endangered dwarf wedgemussel at high risk. Both *A. varicosa* and *A. heterodon* are found farther downstream, below the Cuddebackville Dam in large numbers.

All mussel species can be impacted negatively by runoff from surrounding developed and disturbed lands. Documented impacts to mussels have been documented for constituents like suspended solids, heavy metals, pesticides and herbicides, and nutrients (sources available

upon request). In a recent review of scientific papers on mussels, G. Thomas Watters (2000) summarized a number of studies that show land-use changes, particularly in riparian areas, can have impacts on mussel populations, even those miles downstream of the disturbance. The approximately 60 acres of impervious surface created near the river under this proposal and the apparent alteration of the limited riparian buffer area provides reason for concern about impacts to mussel species in the immediate area as well as downstream. The population of federally endangered dwarf wedgemussel (Alasmidonta heterodon) occurs approximately 15 miles downstream from this planned development. Water quality impacts from the casino site could have a significant impact on this population. **TNC requests that details of a water quality and mussel population monitoring plan for the area adjacent to the project site be included as part of the Draft EIS.** TNC is willing to assist in designing such monitoring plans in order to ensure water quality and *Alasmidonta varicosa* population impacts, if any, are discovered soon enough to be acted upon. -7

A potential impact is the movement and exposure of large volumes of soil. "Construction" activities provide tremendous opportunities for erosion and sedimentation, major causes of localized mussel mortality. Sedimentation interferes with feeding activities of fish, mollusks and other invertebrates and cause suffocation if deposits are of sufficient thickness. Erosion and sedimentation eliminate suitable habitat for fish spawning and interrupt the lifecycles of mollusks. These processes also increases nutrient loading in the river, which may increase macrophyte growth and cause algae blooms, thus changing habitat and water quality.

The table below summarizes findings of a study of average pollutant removal using properly maintained infiltration basins that were sized to treat runoff from a one-inch storm. Although the majority of each of these pollutants was removed using infiltration basins, the table makes it clear that a significant fraction of these pollutants can end up in waterways. Considering the potential total loading from a project of this size, pollutants such as total suspended solids (TSS) are likely to have an impact on the more sensitive biota upon reaching the Neversink.

Pollutant Removal Efficiency of Infiltration Basins (from Schueler, 1987)

Pollutant	Pollutant Removal(%)
TSS	75
TP	60 – 70
TN	55 – 60
Metals	85 – 90
Bacteria	90

The current extent of impervious surfaces created under this plan and the very narrow buffer area between this site development and the Neversink River provides reason for concern about impacts to mussel and other riverine aquatic species in the area. Furthermore, significant water quality impacts from the casino site may easily be transferred this far downstream potentially impacting the large population of federally endangered dwarf wedgemussels. Beyond mussels, more than 20 species of fish are known to use the habitat directly adjacent to the site and further downstream.

Many of these species, as well as the aquatic insect fauna they feed upon, would be impacted by improperly handled runoff. Finally, native brook trout populations live year-round in the Neversink Gorge State Unique Area just a few miles downstream of this location in a sensitive habitat prone to upstream impacts, especially elevated thermal and sediment discharges.

Cumulative impacts on fish and wildlife are of particular concern with respect to new wastewater discharges into the Neversink River through various tributaries in the Bridgeville area. Due to significant water withdrawals from the basin via New York City's Neversink Reservoir, the flow of the Neversink River at Bridgeville is artificially low throughout the year. These lower flows limit the waste assimilation capacity of the river. The cumulative wastewater flows from the proposed Mohawk and Stockbridge-Munsee casinos would, according to estimates in the Draft EA, approach 1 million gallons per day. **TNC requests that the Draft EIS include an analysis of the cumulative impact of proposed increases in wastewater loadings into the Neversink River.** In particular, whether already diminished flows in the Neversink River at Bridgeville will allow adequate waste assimilation. Pollutants of concern include not only nutrients, metals, and pathogens, but temperature which has the potential to impact the viability of the local trout fishery significantly. -8

Ecological Integrity: Freshwater Mussels

Since the current ecological condition or "health" of nearby mussel populations are not described in the Draft EA it is difficult, if not impossible, to assess the current state of ecological integrity and evaluate the potential impacts of the proposed activities. Without a thorough assessment of current ecological integrity ("health") it is also difficult to assess the benefits and risks of the proposed constructed wetlands in light of native wetland habitat values and ecological integrity versus the natural wetlands on the site.

Again, through literature reviews and working with outside scientists The Nature Conservancy's Neversink River Program has begun to identify several critical components to the ecological integrity for the Neversink River's assemblage of freshwater mussels:

1. ***Spatial distribution*** – an important indicator of ecological integrity for the Neversink River basin's assemblage of freshwater mussels is ***mussel species mainstream diversity***.

For spatial distribution parameters The Nature Conservancy recommends the following draft ecological integrity thresholds for assessing current condition and establishing post construction/mitigation integrity goals:

Mussel species mainstream diversity	No native unionids	Dominance of one native species throughout mainstem (e.g., Elliptio complanata)	All native unionids present, with a population of each species present in multiple reaches of mainstem

2. ***Recruitment*** -- the life histories of these unionid mussel species all include a parasitic larval stage (glochidia) involving several host fish species for the dissemination of the glochidia upstream and downstream. As a result, *occurrence of host fish* and *population age structure* are both important indicators of this critical ecological factor.

For mussel recruitment parameters The Nature Conservancy recommends the following draft ecological integrity thresholds for assessing current condition and establishing post construction/mitigation integrity goals:

Occurrence of host fish	No host fish present	Host fish occuring in small patches isolated from native unionids	Host fish and unionids occurring together throughout Neversink.
Population age structure	No individuals less than 3 years old	Unequal distribution of age classes favoring older individuals	All age classes present in all populations with increasing numbers of juveniles

3. ***Hydrochemistry*** – as with wetlands water chemistry parameters such as *temperature* and *dissolved oxygen*, and *pH* are critical for the river's mussel species.

For hydrochemistry parameters The Nature Conservancy recommends the following draft ecological integrity thresholds for assessing current condition and establishing post construction/mitigation integrity goals:

Temperature-Dissolved Oxygen-nose velocity regime (nose velocity = bottom velocity)	DO < 5.0 mg/L & water temperature greater than 25 °C with nose velocity below 1.0 cm/s for more than 24 hours	DO < 5.0 mg/L & water temperature greater than 25 °C with nose velocity between 1.0 – 2.0 cm/s for 1- 24 hours	DO >5.0 mg/L; water temperatures always less than 30 °C ; nose velocities always >2.0 cm/s.
Interstitial Dissolved Oxygen	<4.0 mg/l	4.0-4.5 mg/L	> 5.5 mg/L
Spawning temperature	Always < 15 or > 21 °C during glochidia release	< 15 or > 21 °C for 25-99% of the time during glochidia release	always 15 - 21 °C during glochidia release
PH	< 5.6 or > 9.0	5.7-6.4 OR 8.4-9.0	Between 6.5-9.3 at all times

4. ***Physical habitat*** – for the basin's mussel assemblage *channel stability* is a critical indicator of physical habitat. The Neversink River's mussel species generally occur in patches, where highly localized habitat conditions favor their settling and remaining relatively undisturbed by channel dynamics. Altered sedimentation and erosion regimes due to nearby development can disrupt the natural range of variation of habitat conditions.

For physical habitat parameters The Nature Conservancy recommends the following draft ecological integrity thresholds for assessing current condition and establishing post construction/mitigation integrity goals:

Channel stability	No areas of stability within channel; excessive scour and deposition occurring throughout area normally occupied by mussels	Very few areas of stability within channel (1-25 per river reach); excessive scour and deposition occurring throughout areas normally occupied by mussels	Abundant areas of stability exist within the channel (i.e. >75 per river reach), which allow mussels to persist through moderate flood events (2-25 year interval)

General Comments on Proposed DEIS Level of Information Outline:
The Nature Conservancy would also like to provide the following general comments on the scope of work for the Draft Environmental Impact Statement.

Topography, Geology and Soils

TNC -9

- ***Identify wetland and/or prime farmland soils:***

All soil types (not just those currently classified as hydric) surficial geology and physical landforms known to be critical for "moisture dependent" species and natural communities should be identified.

Identifying only wetland and/or prime farmland soils may miss environmental conditions which support a variety of wetland dependant and associated species and natural communities on the site and surrounding landscape (e.g. vernal pools and ponds).

A more comprehensive approach should be used which would classify ecological characteristics using a combination of physical and biological factors, such as climate, geology, topography, soils, water, and vegetation. These factors are known to control or influence biotic composition and ecological processes. In combination they provide a useful approximation of ecosystem potential and would assist in identifying biophysical conditions which support important species and natural communities across major environmental gradients.

The Nature Conservancy would recommend following the National Hierarchical Framework of Ecological Units (NHFEU), a hierarchical ecological land classification system, and connecting this analysis with biological inventories of natural communities on the site and the surrounding landscape.

- ***Describe bedrock and subsurface conditions as they would relate to construction:*** 10

Bedrock geology, surficial geology and soils should be described as they relate to the viability/integrity of important species, natural communities and ecological processes (including key habitats and important disturbance regimes).

Major environmental gradients (e.g. porosity, moisture, elevation, chemistry, etc.) which are ecologically significant for supporting native biodiversity should be described in detail in addition to the "raw" geologic conditions.

As suggested above, The Nature Conservancy would recommend following National Hierarchical Framework of Ecological Units (NHFEU) ecological land classification system to create a comprehensive and ecologically meaningful baseline of biophysical conditions.

Water Resources

- ***Groundwater -- describe regional conditions and depth to groundwater:*** 11

The investigation of groundwater resources should include groundwater flow models with sufficient resolution to assess the impacts of groundwater withdrawals (and additions) on streams, wetlands and vernal pools/ponds (both on the site and throughout the immediate area).

The description of groundwater resources should also include an assessment of the interactions (on both an inter and intra-annual basis) between groundwater resources and surface water resources (including seasonal habitats such as vernal pools/ponds) with respect to the influence of these interactions on water dependant (and associated) species, natural communities and ecological systems. There must also be a thorough assessment of the timing, magnitude and duration of groundwater depth changes on inter- and intra annual basis.

Description of static conditions, such as average depth to groundwater, will not be sufficient to determine the impacts of development biodiversity.

- ***Surface Waters and Drainage - provide maps and descriptions of waterways and drainage:*** 12

The description of waterways and drainages should include a thorough characterization of physical (bedrock geology, surficial geology/soils, elevation, slope/gradient, and geomorphology) and chemical with respect to the ecological and life history requirements for the species, natural communities and ecological systems found on the site and surrounding landscape.

The description of surface water resources should include an assessment of current and historic flow patterns (magnitude, timing, duration, frequency and rate of change) with respect to important freshwater species and natural communities (particularly pearly mussels, salmonid fish and rare odonata). Information on instream flows and how they vary on inter and intra annual basis is critical for evaluating the ecological impacts of any runoff or discharge from development.

The description of surface water resources should also include an assessment of the interactions (on both an inter and intra-annual basis) between surface water resources and groundwater resources (including seasonal habitats such as vernal pools/ponds) with respect to the influence of these interactions on water dependant (and associated) species, natural communities and ecological systems.

- ***Floodplains - describe floodplain areas; provide maps:*** 13

Description of floodplain areas should be coupled with biological inventory and mapping of natural communities and an assessment using the National Hierarchical Framework of Ecological Units (NHFEU) ecological land classification system to create a comprehensive and ecologically meaningful baseline of biophysical conditions for the riparian/floodplain corridor. Description of floodplain areas should also include an assessment (development of a baseline) of its role in terms of providing habitat and influencing/supporting important species and natural communities.

Vegetation and Wildlife

- ***Describe vegetation communities and species:*** 14

The description of vegetation and communities and species should include a thorough biological inventory of natural communities using the National Vegetation Classification. The results should be cross walked to the New York Natural Heritage Program Natural Community Classification.

This description of vegetation communities and species should also include a thorough assessment of viability for all identified communities using the New York Natural Heritage Program element occurrence ranking guidelines.

Biological inventories should be completed for reptiles and amphibians, freshwater mussels, odonates (damselflies and dragonflies), rare herbaceous plants and fish.

Baseline viability or integrity should be established for all identified species using the best available science in consultation with agencies like New York Natural Heritage Program, U.S. Geological Survey, The Nature Conservancy and Institute of Ecosystem Studies.

This information is crucial for assessing the impacts (including cumulative impacts) to biodiversity.

- ***Include information on potential species or communities of concern; include correspondence from U.S. Fish and Wildlife Service and the NY Natural Heritage Program:*** 15

Particular attention should be paid to those species and natural communities which are:

1. *Threatened and endangered species.* Species listed as endangered, threatened or special concern by either the U.S. Fish and Wildlife Service or New York State DEC.

2. *Globally rare species and natural communities.* Species and natural communities ranked as G1 through G3 by the New York Natural Heritage Program,

3. *Endemic species and natural communities.* Endemic species are those which are restricted to a small geographic area and depend entirely on a single area for survival, and therefore are often more vulnerable.

4. *Disjunct species and natural communities.* Disjunct species and natural communities have populations that are geographically isolated from those of other populations.

5. *Vulnerable species and natural communities.* Vulnerable species are usually abundant, may or may not be declining, but some aspect of their life history makes them especially vulnerable (e.g., migratory concentration or rare/endemic habitat).

6. *Keystone species.* Species whose impact on a community or ecological system is disproportionately large for their abundance and which contribute to ecosystem function in a unique and significant manner through their activities. As a consequence, their removal initiates changes in ecosystem structure and often a loss of diversity.

7. *Any species or natural community aggregations, groups, and/or hot spots of richness.* These species or natural communities are unique, irreplaceable examples for the species that use them, or are critical to the conservation of a certain species or suite of species or natural communities.

This information should also include the best available information on life history as well as baseline conditions and minimum viability/integrity thresholds for critical aspects of viability for each species and natural community. Again, this information is crucial for assessing impacts to local biodiversity.

- ***Describe wildlife habitat and use*** and ***Include fisheries information for waterbodies as applicable or available:*** 16

Description of wildlife habitat use and fisheries information for water bodies should be incorporated into a thorough assessment of how specific habitat conditions and ecological conditions influence the viability/integrity of the species and natural communities found on the site and surrounding landscape. This information should include the best available information on ecological integrity/viability requirements as well as establish baseline conditions and minimum integrity thresholds for viability for important elements of biodiversity.

- ***Describe wetland locations and types; federal and state jurisdictional areas; include maps:*** 17

The description of wetland resources should include National Wetland Inventory (NWI) wetland data.

Wetland information should be linked to the biophysical setting, groundwater/surface water interaction, and species and natural community viability information previously recommended and should include an analysis of how specific wetlands or wetland types on the site and surrounding landscape relate to the integrity/viability/life history of species and natural communities.

Conclusion:

While property owners along the river certainly cannot be denied the use of their properties, there are some uses and activities that provide much greater hazards than

others. Large-scale construction and wetland filling activities such as the ones proposed by the applicant can be extremely disruptive and present exceptional opportunities for degradation of nearby rivers. The Nature Conservancy believes that the project as proposed in the Draft EA may present a number of serious environmental problems. Given the relatively pristine nature of the Neversink River and the rare species found therein, any proposed activity in close proximity to the river must be closely evaluated.

The Nature Conservancy believes that it would be appropriate to develop a detailed monitoring and mitigation plan for the project. Ecological integrity thresholds, such as those above, should be considered for inclusion in such a plan so that monitoring can be focused toward ensuring that some degree of ecological integrity is maintained during and after project construction (using current conditions as a baseline). Mitigation could be required based on data collected on site, rather than on the kind of pre-project speculation of impacts that may be inadequate when dealing with a project of this complexity. The Nature Conservancy would be willing to assist in designing and implementing such a plan. Without exploring this option and addressing the concerns described in the body of this letter, The Nature Conservancy believes that the Draft Environmental Impact Statement will be incomplete in its evaluation and proposed mitigation of the potentially significant impacts associated with the project.

Sincerely,

George E. Schuler
Neversink River Program Director

Appendix A-3

Response to Comments

Response to Comments at Scoping Session (12/4/04)

Harry Brantz

HB-1: Section 5.10.2 discusses potential impacts on community services and the proposed mitigation, as set forth in the Local Government Agreement.

James Contrys

JC-1: As discussed in Section 5.1 and 5.2, drainage patterns within the overall project area will not be changed. Drainage which currently passes under County Highway 161 towards Mr. Contrys property will remain unaltered.

JC-2: Section 5.7.3 discusses roadway improvements. Mr. Contrys and his neighbors will be able to take the extended Foss Road out to County Highway 161 where there will be a new traffic signal to make sure that residential traffic can access the area safely and effeciently.

Cesar Loraca

CL-1: A review of existing housing stock is provided in Section 4.10.2, and potential impacts discussed in Section 5.10.2. Appendix G also provides more in depth information.

Dick Riseling

DR-1: Information on employees and indirect employment issues are discussed in Section 5.10.2 and Appendix G.

DR-2: An analysis of direct and indirect revenues generated by the Casino Project, as well as the potential impact on community services such as schools is provided in Section 5.10.2 and Appendix G.

DR-3: Transportation impacts are evaluated in Section 5.7, with proposed mitigation and discussion of payment for the mitigation. Section 5.11 discusses impacts to community services, including public safety and health care.

Janet Newberg

JN-1: Existing wetland resources were inventoried (see Section 4.3) in order to provide a basis for impact analysis and mitigation design. In addition, reference wetlands were investigated for additional data on creation area design (see Section 5.3.2.1 and Table 5-9). Substantial efforts were made to avoid and minimize wetland impacts to the greatest extent practicable (see Section 2.3). The unavoidable impacts are being mitigated in accordance with USACE requirements, and the wetland creation area will be monitored for success (Section 5.3.2).

JN-2: Runoff from the roadways is being treated to meet or exceed state standards, as discussed in Section 5.1 and 5.2. Emissions from the new traffic will not cause any NAAQS exceedances (see Section 5.8).

JN-3: The Delaware River will not be impacted by the proposed project. Water quality and quantity is being controlled onsite (see Section 5.1 and 5.2). The Delaware River is approximately 25 miles from the project site.

John Barrone

JB-1: Protection of the Neversink River was a key component of site planning. Water quality and quantity is being controlled onsite (see Section 5.1 and 5.2) to meet or exceed state standards. The lower mining area adjacent to the Neversink will be reclaimed as a wetland (see Section 5.3.2). The approximately 50 acres of currently exposed soils on the site will be stabilized (see Section 5.3.1.1). The 33 foot fishing easement will remain intact (see Section 5.4.1).

Alan Sorenson

AS-1: Cumulative impacts, including numerous other proposed and potential projects in the area (most notably two other casinos) are considered in the analysis (see Section 6.0).

AS-2: The project is not proposing the addition of a third lane to State Route 17 (see Section 5.7.2).

Response to Written Comments

The Association of Monticello Clergy (AMC)
December 5, 2003

AMC-1: The DEIS discusses the socio-economic effects of the project in Section 5.10.

Town of Thompson Conservation Advisory Council (TTCAC)
December 15, 2003

TTCAC-1: There will be no new point discharges to the Neversink River; all runoff will be pretreated for water quality and controlled for water quantity before discharge. Project design incorporates multiple measures to protect the Neversink River including control of erosion (Section 5.1), stormwater management (Section 5.2), wetland creation, restoration and enhancement (Section 5.3.2) and landscaping (Section 5.3.1). These protections also afford protection of the Neversink River Unique Area, located approximately 2 miles downstream.

New York State Department of Environmental Conservation (NYSDEC)
December 15, 2003

NYSDEC-1: Should construction begin before the land is taken into trust, NYSDEC would maintain jurisdiction for all state permits, including a Section 401 Water Quality Certificate. However, no work will begin until the land is in trust. As such, the federal government and Tribe will have environmental jurisdiction.

NYSDEC-2: Final SWPPPs for all the construction packages will be prepared and filed prior to construction. The chemical product to be used as flocculent, if necessary, is described in Section 5.1.2.1 and the SWPPP (Appendix H). This would only be one part of the erosion control plan and is only necessary if large deposits of colloidal soils are encountered, which is not expected. The flocculent will be mixed and/or applied in accordance with all Occupational Safety and Health Administration Material Safety Data Sheet (MSDS) requirements.

NYSDEC-3: Appendix K of the DEIS is a Technical Memorandum entitled, *Derivation of Water Demand and Wastewater Generation*, dated January 20, 2004. This provides a detailed back-up of the water demand and wastewater generation for the proposed project based on historic water usage data from the Mohegan Sun Casino in Uncasville, CT. The Phase 1 Mohegan Sun Casino is virtually identical to the proposed Stockbridge-Munsee Casino in terms of overall size, internal uses and support spaces. A detailed breakdown of the development program uses and square footages for the proposed casino development is provided. Visitation of the two facilities is expected to be similar. Additionally, water records related to the hotel represent full occupancy. The Technical Memorandum also provides a calculation of estimated wastewater flows based on NYSDEC Design Standards and other recognized industry standards where there was no

NYSDEC standard available. The resultant wastewater flow estimates using design standards were within four percent of the estimates based on historic water records. Since accurate historic water records are available for an identical facility, we believe that using this data will be a more accurate prediction of water demand for the proposed facility. This notwithstanding, using NYSDEC/industry standards confirms the validity of this approach.

NYSDEC-4: See the Technical Memorandum on water demand and wastewater generation in Appendix K of the DEIS. The Average Daily Flow for wastewater is estimated based on the average of the actual historic monthly water meter readings for the comparative facility at Mohegan Sun in Connecticut. It represents the average daily volume of water usage over a continuous period of time extending over 12 months. Therefore, we believe that the calculated flow projected for the project is consistent with NYSDEC's definition for Design Average Flow. Furthermore, the calculated average flow was then increased by 10 percent to be conservative. Peaking factors were then applied to this value to estimate Maximum Day and Peak Hourly demands.

NYSDEC-5: See the Technical Memorandum on water demand and wastewater generation in Appendix K of the DEIS. The estimated wastewater flow value for the hotel to be compared to the Department's standard is the Maximum Daily Demand of 91,200 gpd. This equates to 121.6 gpd/room, and is consistent with the Department's (Design Flow) standard of 120 gpd/room. This project demand is a multiple (1.6 times) of the Average Daily Demand and represents the highest historic visitation and occupancy day (24-hour period) at the Mohegan Sun facility, including full occupancy of the hotel. This maximum day factor (1.6) also includes a 9 percent contingency factor.

NYSDEC-6: See the Technical Memorandum on water demand and wastewater generation in Appendix K of the DEIS. As calculated for wastewater, the ratio of Peak Hourly Flow to Average Daily Flow is estimated to be 3.0 (Peaking Factor). This was based on total occupancy during a concert event occurring at the Mohegan Sun facility during a peak summer period, the highest instantaneous occupancy observed at the facility for the analysis period. Therefore, the calculated peaking factor is consistent with the guideline in the "Ten States Standards" for peak flow. The peaking factor being used for the project also includes a 15 percent contingency to be conservative. The Peak Hourly water demand was not shown for the proposed casino project because this demand will be supplied from an on-site water storage tank and not from the supply source.

NYSDEC-7: A map is provided as Figure 4-8. The project site boundary, as shown, demarcates the limit of land owned by the Tribe.

NYSDEC-8: All wastewater from the Casino Project will be collected to an on-site pump station. The sewer line from this pump station to the connection to the Town's interceptor sewer at Route 42 will be by force main. The only opportunity for additional tie-ins, and therefore potential induced growth, will be at a second pump station in the Thompsonville area to the north of the site along Route 161. Consequently, other than the limited service area, there will be no other opportunities for connection to the proposed off-site sewer line. As described in Section 5.11, the

existing development includes approximate 25 single family homes and the future development includes a residential subdivision and a hotel. Both of these future development projects are in the planning stages. Other future development will require separate service lines and separate capacity allocation in on of the Town's wastewater treatment facilities.

NYSDEC-9: As discussed in Section 5.12.2, the Town of Thompson Kiamesha Lake Sewer Treatment Facility has a permitted design capacity of 2,000,000 gallons per day. It currently operates at 35 percent capacity. Therefore, the treatment facility currently has an excess capacity of 1,300,000 gallons per day. The Tribe has entered into an agreement with the Town of Thompson to reserve up to 345,000 gallons per day (Average Daily Flow) capacity in the Kiamesha facility for the Casino Project. The Town is also aware of the peak flow fluctuations and pumping rates associated with each phase of the development (summarized in the Technical Memorandum on water demand and wastewater generation in Appendix K of the DEIS). It is understood that the Town may enter into agreements with other potential users and commit a portion of their remaining excess treatment plant capacity to accommodate these specific needs.

NYSDEC-10: Section 5.1.1 of the DEIS has updated earthwork quantities to reflect more detailed site grading plans that have been prepared, especially associated with the wetlands creation area which will require the filling of two large mining ponds. The revised quantities show a significant reduction in the amount of excess cut material related to the construction of the overall project from 749,000 cubic yards to 365,000 cubic yards. A significant portion of this material will be used directly for the proposed off-site roadway and interchange improvements along County Highway 161 and State Route 17. The remainder will be transported off-site to projects needing fill material.

NYSDEC-11: A visual assessment has been prepared and is provided in Section 5.13 and Appendix L.

National Park Service (NPS)
December 16, 2003

NPS-1: The project has been specifically designed to control stormwater runoff from the site before it enters the Neversink River. The proposed stormwater management plan is designed to replicate the existing site hydrology, both in terms of runoff volume as well as peak rate during storm periods. The proposed plan also includes measures to treat the quality of runoff to mitigate the impacts of development on the site, including thermal impacts. This comprehensive stormwater management plan is presented in detail in Section 5.2 of the DEIS. Table 5-2 has been revised to show pre and post-development runoff volumes as well as rates and data for the 1-year frequency storm has been added. It shows that peak discharge rates from the developed site will be slightly less than under existing conditions. Additionally, runoff volumes for the proposed conditions closely approximate the existing runoff volumes for the entire range of statistical storm events analyzed. This is due to the use of a combination of detention and infiltration facilities to process runoff flows from the developed portions of the site. Consequently, flows in the Neversink River will not be affected due to the proposed site

development, either during storm periods or during base flow conditions. The project will not result in a reduction in the amount of water required to be released from upstream impoundments. It should also be noted that the Montague river gauge is located over 30 miles from the project site and that the Montague gauge has a tributary area of 3,480 square miles, compared to the tributary area of the gauge at the project site which is 171 square miles.

Gedalye Teitelbaum (GT)
December 18, 2003

GT-1: The DEIS discusses socio-economic (Section 5.10), traffic (Section 5.7), and air (Section 5.8) and water pollution (Section 5.1 and 5.2) impacts and proposed mitigation.

Theodore Gordon Flyfishers Inc. (TGF)
December 18, 2003

TGF-1: As detailed in Sections 5.2 and 5.3, the proposed project has multiple controls to manage stormwater management so that there will be no impact to the Neversink River. Backup data are provided in Section 4.2 and Appendices H and I. See also the response to TTCAC-1.

TGF-2: Control of soil erosion during construction is discussed in Section 4.1 and a draft SWPPP provided in Appendix H. It should be noted that the existing site supported approximately 50 acres of unstabilized/exposed soils as part of the mining and auto salvage operations (see Table 5-5).

TGF-3: Water supply will be provided by the Village of Monticello public water system (see Sections 2.6, 3.4.1 and 5.12.1). Wastewater will be treated offsite at the Town of Thompson Kiamesha treatment facility (see Sections 2.7, 3.4.2 and 5.12.2).

TGF-4: Stormwater runoff (both quality and quantity) will be treated and controlled before discharging to the Neversink River or adjacent existing or proposed wetlands. As such, detailed analysis of the Neversink River is not required. See response to NPS-1 above.

TGF-5: An alternatives analysis is provided in Section 2.0.

TGF-6: The proposed wetland mitigation plan follows the requirements of the U.S. Army Corps of Engineers, including their new draft guidance which was created to ensure success of creation areas. The proposed monitoring plan will also ensure that the wetland creation site is successful (see Section 5.3.2).

TGF-7: Traffic impacts are discussed in Section 5.7 and 6.7. Air quality impacts are discussed in Sections 5.8 and 6.8. Noise impacts are discussed in Section 5.9 and 6.9. Runoff from paved surfaces, which includes potential contaminants from vehicles, is discussed in Section 5.1 and 5.2.

TGF-8: There should be no impact to the trout habitat of the Neversink River, either at the site or downstream. There are no direct impacts to the Neversink River (Section 5.2.1.2), the runoff from the site will be controlled and will meet or exceed regulatory standards (Section 5.2.1.5 through 5.2.1.9), and the area along the Neversink River will be restored by turning the exposed soils of the mining area into a vegetated wetland (Section 5.3). In addition, the existing 33-foot fishing easement will be maintained (see Section 4.4.1 and 5.4.1).

TGF-9: The alternative location at the Monticello Raceway is discussed in Section 2.2.3.2 (under Interchange 104).

Upper Delaware Council (UDC)
December 19, 2003

UDC-1: As indicated in Sections 2.7, 3.4.2 and 5.12.2, there will be no wastewater effluent discharges to the Neversink River. In addition, the project has been specifically designed so that there would be no change in flows off the site into the Neversink River (see response to TTCAC-1 and NPS-1).

UDC-2: Multiple measures for controlling stormwater quality are addressed in Sections 5.1 and 5.2. However, as mentioned in TGF-8, there will be no direct discharge.

Trout Unlimited (TU)
December 19, 2003

TU-1: The USACE recently issued a Special Public Notice (dated December 18, 2003) citing the USACE and USEPA regulations that require compensatory mitigation for unavoidable impacts and providing guidelines and a checklist for review of mitigation plans. Although these guidelines are in draft form, they are being used in the development of the proposed mitigation design to assure success (see Section 5.3.2).

TU-2: The constructed wetlands are not being designed for stormwater or wastewater treatment. All stormwater discharges to the created wetland will be pre-treated to regulatory requirements before they are discharged to the created wetland, and wastewater will be treated offsite at the Thompson Kiamesha Lake facility. Performance standards for wildlife habitat relate to the successful establishment of vegetative communities. See Section 5.3.2 and Table 5-10.

TU-3: Monitoring will occur both during and after construction of the wetland. Section 5.3.2 provides details.

TU-4: As shown in Section 5.12.2, wastewater will be treated at the Town of Thompson Kiamesha Lake facility, which is already permitted for the proposed flows. There will be no wastewater discharges to the Neversink River.

TU-5: Sections 5.1 and 5.2 discuss the analyses performed for the stormwater impact assessment. Appendices H and I provide additional information. Because discharges are being pretreated and

controlled before they enter the Neversink River, there is no requirement to analyze the river itself. See also response to TGF-8.

The Nature Conservancy (TNC)
December 19, 2003

TNC-1: The constructed wetland is not intended for stormwater management, although the area will provide additional treatment before waters enter the Neversink River. All stormwaters will be pre-treated BEFORE entering the constructed wetland (Section 5.2). Performance standards for wildlife habitat relate to the successful establishment of vegetative communities. See especially Section 5.3.2 and Table 5-10.

TNC-2: The proposed wetland is not intended to provide the filtration for the project and, therefore, modeling is not necessary. Section 5.2.1 details the stormwater management plan. The monitoring plan for the wetland creation area will be overseen by the USACE and USEPA, and is presented in Section 5.3.2.

TNC-3: The draft SWPPP, provided in Appendix H, addresses maintenance of the stormwater management features. Because the stormwater management system is designed to meet state performance standards, it is not believed that it is necessary to monitor water quality.

TNC-4: The control of potential contaminants that are water soluble is addressed through several means. Additional information has been provided in Section 5.2.1.5 and 5.2.1.7 to show compliance with NYSDEC SMPs to control water soluble pollutants. Section 5.3.1 addresses use of herbicides and pesticides and an Integrated Pest Management approach.

TNC-5: As indicated in Section 4.3.2, there are 23 wetlands on the site. As indicated in Section 5.3, only Wetlands 4 and 21 will be impacted directly. Development will occur around Wetland 4, which consists of old gravel operation excavated pond as well as forested wetland. The development will occur more than 50 feet away from the eastern side of Wetland 3; the remainder of the buffer around Wetland 3 will not be affected. There are seventeen intermittent stream segments, four jurisdictional ponds and the Neversink River on or next to the site (see Section 4.2.2). The lower portion of three intermittent streams will be impacted (705 linear feet, total) and one small excavated pond (0.07 acres). There will be no direct impacts to the Neversink River. The development will not affect the remaining intermittent streams or ponds.

As discussed in Section 5.2.1.2, the buffer zone to the Neversink River will be stabilized. The current project site has approximately 50 acres of land that is unvegetated due to mining and auto salvage operations. Under proposed conditions, these unstabilized areas will be stabilized. There will be a total of approximately 47 acres of impervious area after Phase II. Under existing conditions, approximately 1 acre within 100 feet of the river is unvegetated. Under proposed conditions, this will be reduced to approximately ½ acre, including graded area for the new roadway and approximately 7,000 square feet of roadway pavement.

TNC-6: Cumulative effects are considered in Section 6.0. The only other proposed project on the Neversink River is the proposed Holiday Mountain expansion downstream of the casino project area. Because the proposed Casino Project will have no significant impacts to the Neversink River, there will be no cumulative impacts.

TNC-7: A survey of the mussels was conducted (see Section 4.4.3). Findings (Section 5.4.3) indicate that, because runoff from the site is being controlled and treated before it discharges to the Neversink River, there will be no significant impact to the population and, as such, monitoring of the water quality or mussel populations is unnecessary.

TNC-8: As indicated in Section 5.12.2, wastewater will be treated at the Town of Thompson Kiamesha Lake facility, which is already permitted for the flows. There will be no wastewater discharges to the Neversink River.

TNC-9: Wetland and prime farmland soils are provided in Section 4.1.4 as background information. Wetland delineations were determined on very specific field investigations. Prime farmlands are identified in accordance with NRCS criteria.

TNC-10: Background bedrock, surficial geology and soils are discussed in Section 4.1.

TNC-11: Infiltration rates are considered in Section 5.2 in the discussion on potential groundwater impacts. There will be no groundwater withdrawals other than a potential irrigation well, which will not be operational year-round (Section 5.12.1.1).

TNC-12: Detailed maps and descriptions of the waterways are provided in Section 4.2.

TNC-13: Figure 4-8 shows the 100-year floodplain limits. A description of floodplain vegetative communities is provided in Section 4.3.1. The 100-year floodplain on the site coincides with the area of the mining operations and consist of unstabilized/mined lands.

TNC-14: Inventories of vegetation and wildlife are provided in Section 4.3.1 and 4.4.2

TNC-15: Correspondence with USFWS and NYNHP are included in Appendix C. Species and communities of concern are discussed in Sections 4.3.3 and 4.4.3.

TNC-16: Vegetative community habitat types are discussed in Section 4.3.1; stream descriptions are provided in Section 4.2.2; fisheries resources are primarily limited to the adjacent Neversink River and are described in Section 4.4.1.

TNC-17: Section 4.3.2 describes wetland delineations and the USACE jurisdictional determinations. The NWI maps only show 4 wetland areas on the site; the 23 areas identified during field investigations overlap, but extend, the NWI maps.

Appendix B

Traffic Impact Study

FEIS Traffic Impact Study
Stockbridge-Munsee Casino

Thompson, NY

Submitted to:
Trading Cove Associates

January 2012

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1.0 Introduction

Tetra Tech Rizzo has been retained by Trading Cove New York to conduct a study of potential traffic impacts associated with a proposed casino, hotel and entertainment facility at a site located on County Highway 161 (Heiden Road) off of State Route 17 Interchange 107 in Thompson, New York. This study was originally submitted as part of the Draft Environmental Impact Statement (DEIS) for the project. Since the DEIS was filed, the project design year has changed as well as the potential background developments. As such, new traffic counts were conducted including automatic traffic recorder counts (ATRs) for County Highway 161 and Route 17 to establish a current baseline. These new counts include traffic from developments that have been built since the original 2001 baseline counts were conducted. Additionally, the study has been updated to include current background development projects. The new design year is 2018, the expected completion date for the proposed hotel component of the project. Although Phase I is expected to open in 2014, it was conservatively assumed here that Phase I could be constructed as early as 2013.

The study begins with an evaluation of existing (2010) traffic conditions along the primary roadways serving the site. Traffic volumes are then projected to the 2018 design year based on non-project and project-related traffic growth. Anticipated future traffic volumes were evaluated with respect to the roadway system capacity to determine expected future operating conditions without and with the project. An analysis was also conducted of assumed Cumulative Build conditions. The Cumulative Build scenario includes traffic from two large projects that are not expected to be completed by 2018 as well as traffic from an Assumed Casino #3, which is not a proposal but is assumed to be built west of the project site. (The proposed Concord Hotel and Casino, or Casino #2, is considered in the 2018 “No Build” scenario and likewise in the 2018 Build and Cumulative Build scenarios.) Thus, this updated study employs the same basic conceptual approach as the study for the DEIS.

1.1 Project Description

The project site, shown on Figure 1, is located north of State Route 17 on the eastern side of County Highway 161 and Old County Highway. The easterly side of the project site is bordered by the Neversink River. Currently the 330-acre site is undeveloped although portions of the site have been previously disturbed for mining operations. The proposed development consists of 194,000 square feet (sf) for gaming and multipurpose/event space; 68,500 sf for restaurants; 275,000 sf for the back of the house (employee uses); 25,000 sf for retail, daycare and arcade uses; a 750-room high-rise hotel; and, 91,500 sf for central plant, storage, and a bus transportation center. The total 654,000 sf development will be served by 8,480 parking spaces and two curb cuts (one main entrance on County Highway 161 and an extension of Foss Road for emergency site access to County Highway 161).

1.2 Study Area

The study area for the traffic impact analysis was selected to include the critical intersections providing access to and from the project site. Specifically, the study area includes County

Highway 161 (Heiden Road) intersections with Old Route 17 (County Road 173), State Route 17 Interchange 107, Old County Highway (Road Number 102), and the main project site driveway. The study area also includes Interchange 107 ramp intersections with Old Route 17.

Due to the nature of environmental assessments, the bulk of the analysis focuses on roadways in the immediate vicinity of the proposed casino. Although traffic impact studies are not typically required to evaluate impacts beyond the adjacent interchange, in response to comments from surrounding communities, particularly the towns in Orange County, the regional impacts of the proposed project on State Route 17 and the surrounding communities are documented.

A full regional study is not provided as it would duplicate NYSDOT efforts. NYSDOT is already looking at regional improvements along State Route 17 as part of their *Route 17 (Future Interstate 86) Interchange Spacing and Geometrics Study, Delaware, Sullivan and Orange Counties.* [1] As part of the NYSDOT project, roadway and interchange improvements will be made to State Route 17 from Interchange 84 in Delaware County, through Sullivan County, and up to and including Interchange 131 in Orange County (the interchange with Interstate 87 and Route 6) in order to upgrade this road to Interstate standards. (Portions of this project are already in final design or under construction.) The primary study area consists of all State Route 17, the mainline and ramps, and all intersecting and parallel facilities. The secondary study area covers a broad area surrounding State Route 17, with consideration given to include population centers, National Highway System (NHS) facilities, and community facilities, where appropriate. Although the original NYSDOT study did not specifically include the impacts of one or more casinos in this area, NYSDOT is aware of these developments and will include their impacts when proposed interchange improvements reach the design stage.

2.0 Existing Conditions

Existing roadway and traffic conditions were evaluated for the project study area. The existing conditions analysis is based on field engineering site visits on March 21-22, 2001 and traffic volume counts conducted in July of 2010. Information was collected regarding roadway geometrics, traffic controls, and traffic operations. The results of these investigations are described below.

2.1 Roadway Network

Study area roadways include State Route 17, County Highway 161, Old Route 17, Old County Highway, and Foss Road. Curbing and sidewalks are generally not provided along these roadways. A description of each roadway follows.

State Route 17 is expected to serve a majority of the vehicles accessing the project site. State Route 17 is an east/west highway that runs between New York City and northwestern Pennsylvania connecting many cities across the southern portion of New York State, including

[1] New York State Department of Transportation, *Transportation Project Report, Route 17 (Future Interchange 86) Interchange and Geometrics Study, Delaware, Sullivan and Orange Counties*, April 2001.

Binghamton, Elmira, and Jamestown. In the vicinity of the study area, State Route 17 is a limited access divided highway with two lanes in each direction separated by a landscaped median.

Within the next several years, the New York State Department of Transportation (NYSDOT) plans to convert State Route 17 to Interstate Highway 86. As part of this effort, NYSDOT initiated the *Route 17 (Future Interchange 86) Interchange and Geometrics Study*[2] to address interchange spacing and interchange geometric features necessary to meet Interstate standards on State Route 17. The process involves the consideration of improving or consolidating selected interchanges based upon Interstate spacing, geometrics, and service requirements. Enhancements to the State Route 17 corridor are a prerequisite for any eventual NYSDOT request for Federal Highway Administration (FHWA) approval to designate portions of State Route 17 corridor as Interstate 86. The NYSDOT study will include the necessary tasks to allow for proper judgment and study of appropriate modifications. As noted earlier, the NYSDOT study area covers State Route 17 from Interchange 84 in Delaware County, through Sullivan County, and up to and including Interchange 131 in Orange County, which is an interchange with Interstate 87. Thus, the study area includes State Route 17 Interchange 107.

County Highway 161 (Heiden Road) represents the primary access route for the proposed project. This road is a local north/south arterial roadway under County jurisdiction. County Highway 161 begins at State Route 17 Interchange 107 and travels through Thompsonville to connect with Routes 109 and 42 to the north. At meetings with town and county officials, several existing roadway deficiencies (poor sight lines and pavement conditions) along County Highway 161 north of the site were noted. Also, drivers exiting Kiamesha Lake Road (Route 109) at County Highway 161 may experience sight distance problems.

North of the study area, County Highway 161 is posted at 30 miles per hour. No speed limits are posted on County Highway 161 in the vicinity of the project site. Observed travel speeds adjacent to the site range between 40 and 50 miles per hour (mph). [3] Near the project site, County Highway 161 ranges from 42 to 49.5 feet wide (the existing right-of-way is 49. 5 feet) with one lane in each direction and nine to thirteen-foot wide shoulders. Land uses are primarily open space with some single-family residences.

Old Route 17 (County Road 173) is a local arterial roadway that runs in an east/west direction and serves as a frontage road to the south of and parallel to State Route 17. Some of the local visitors accessing the project from the east or the west would be expected to utilize Old Route17. In the vicinity of State Route 17 Interchange 107, Old Route 17 is approximately 30-32 feet wide with three to four-foot shoulders and one lane in each direction. The posted speed limit on Old Route 17 (east of County Highway 161) is 40 mph. Land uses are primarily residential with some smaller scale commercial uses in the vicinity of the interchange.

Old County Highway (Road Number 102) represents the former connection between Route 17 and points north (Thompsonville and Route 42). Old County Highway runs in a north/south direction and connects County Highway 161 at a thirty-degree angle north of Interchange 107, where it forms a STOP-controlled T-type intersection. As this intersection is located just south of

[2] New York State Department of Transportation, April 2001.
[3] Based on field observations by Rizzo Associates, Inc., March 21-22, 2001.

the proposed project site, traffic volumes traveling between the site and the highway would be expected to affect this location. Old County Highway is approximately 25 to 30 feet wide and provides one lane in each direction. No striping, curbing, or sidewalks are provided, and the pavement is in poor condition. The south end of Old County Highway is a dead end. Land uses along Old County Highway include residential and open space.

Foss Road (Road Number 11) is a narrow two-lane local roadway with one lane in each direction located east of Old County Highway and south of the project site. The north end of Foss Road connects with Old County Highway approximately 1,000 feet south of County Highway 161. Thus, residents from Foss Road use Old County Highway to access County Highway 161. The south end of Foss Road is a dead end. Land uses include residential, open space, and an old gravel pit.

To determine the potential impacts of the proposed project, existing and future conditions (where appropriate) were analyzed at the following locations:

1. State Route 17 Eastbound Off-Ramp/Old Route 17
2. State Route 17 Eastbound On-Ramp Connection/Old Route 17 (Existing and No-Build conditions only)
3. State Route 17 Eastbound On-Ramp Connection/Route 17 Eastbound On-Ramp (Existing and No-Build conditions only)
4. County Highway 161/Old Route 17
5. County Highway 161/State Route 17 Westbound On-Ramp
6. County Highway 161/State Route 17 Westbound Off-Ramp
7. County Highway 161/Old County Highway (Existing and No-Build conditions only)
8. County Highway 161/Proposed Emergency Access Driveway (future Build conditions only)
9. County Highway 161/Project Site Driveway (future Build conditions only)

In addition, ramp-freeway analyses were conducted for the ramps at Interchange 107 to determine peak hour highway ramp merge operations along State Route 17 in this vicinity.

Existing lane conditions and roadway/intersection deficiencies for the existing study area intersections are shown on Figure 2. A brief description of each intersection is below. No sidewalks or curbing are provided in the vicinity of any of the study intersections.

State Route 17 Eastbound Off-Ramp/Old Route 17. This intersection is located on the southwest side of State Route 17 Interchange 107 and operates as an unsignalized T-intersection. The one-way southbound approach to the intersection (the State Route 17 eastbound off-ramp) is under STOP-sign control. Surrounding land uses include open space and a car dealership northwest of the intersection.

State Route 17 Eastbound On-Ramp Connection/Old Route 17. This intersection is located less than 200 feet southeast of the State Route 17 eastbound off-ramp. Under existing conditions, the east leg of this intersection (the ramp connector) is 15 feet wide and one lane/one-way in the eastbound direction. The surrounding land is undeveloped.

State Route 17 Eastbound On-Ramp Connection/Route 17 Eastbound On-Ramp. The connection between Old Route 17 and the State Route 17 eastbound on-ramp is approximately 110 feet long. STOP-sign control is provided for the eastbound vehicles turning left on to the on-ramp. The surrounding land is undeveloped.

County Highway 161/Kroeger Road/Old Route 17. This intersection is an unsignalized, four-legged intersection located south of Interchange 107. Vehicles accessing the project site from the west will travel through this intersection. The north and south legs of this intersection (County Highway 161 and Kroeger Road, respectively) are STOP-sign controlled. Today, the portion of County Highway 161 south of Interchange 107 follows the curve of the eastbound on-ramp, creating a reverse curve on the approach to Old Route 17. This approach is also poorly located within a broken-back curve on Old Route 17. Broken-back curves can present a safety problem because drivers are used to succeeding curves being in the opposite direction, not the same direction. The south leg of this intersection (Kroeger Road) is currently a dead-end residential street with minimal traffic volumes. A residence is located on the northeast corner of the intersection, and the rest of the surrounding land is undeveloped.

County Highway 161/State Route 17 Eastbound On-Ramp. Vehicles traveling from the project site will use this intersection to access eastbound State Route 17. This ramp entrance is unsignalized and access to the ramp is only provided to vehicles traveling southbound on County Highway 161. Adjacent land uses include a residence east of County Highway 161 and open space to the west.

County Highway 161/State Route 17 Westbound On-Ramp. This intersection is an unsignalized T-intersection located on the north side of the interchange. The west leg of the intersection is a one lane one-way westbound on-ramp for State Route 17. This intersection serves traffic on County Highway 161 from both northbound and southbound directions. Vehicles accessing the ramp from the north have a free right turn onto the ramp separated by a small landscaped island. The surrounding land is undeveloped.

County Highway 161/State Route 17 Westbound Off-Ramp. This intersection is located approximately 450 feet north of the westbound on-ramp and also operates as an unsignalized T-intersection. The westbound approach of the intersection (the off-ramp) is one lane and one-way in the westbound direction. Vehicles on the ramp turning right onto northbound County Highway 161 are under YIELD control and must merge with northbound through traffic on County Highway 161. Vehicles turning left from the ramp to access southbound County Highway 161 are under STOP-sign control. These two westbound movements are separated by a landscaped island. The surrounding land is undeveloped.

County Highway 161/Old County Highway. This intersection is an unsignalized T-intersection located approximately 2,500 feet north of State Route 17. All three approaches of this intersection provide one lane entering and one lane exiting the intersection. The Old County Highway (“westbound”) approach meets County Highway at a thirty-degree angle and is under STOP-sign control. Surrounding land uses include residential and open space.

County Highway 161/Proposed Foss Road Extension. The proposed extension of Foss Road will connect to the eastern side of County Highway 161 approximately 800 feet south of the existing intersection of County Highway 161/Old County Road. This intersection will be signalized with an exclusive southbound left-turn lane on County Highway 161. The roadway extension will provide one lane in each direction and gated emergency access to the southern end of the proposed project site.

County Highway 161/Project Site Driveway. The proposed site driveway will be located along the eastern side of County Highway 161 north of the intersection of County Highway 161/Old County Road. This intersection will be signalized and provide exclusive turn lanes into and out of the site. The on-site project site driveway will provide two lanes in each direction.

2.2 Traffic Volumes

Daily and peak period traffic volume counts were conducted on the roadway system to quantify existing traffic volume conditions in the project study area. Manual turning movement counts for the study intersections were collected on Friday, July 9, Saturday, July 10, and Sunday, July 11, 2010 and ATRs for the County Highway 161 and Route 17 were collected during the same period. The count data are provided in Volume II, Appendix A.

2.2.1 Peak Hour Traffic Volumes

Manual turning movement counts were conducted during the typical peak traffic periods associated with casino/entertainment facilities. Traffic counts were collected between 4:00 and 6:00 p. m. on Friday and Sunday and between 7:00 and 9:00 p.m. on Saturday. [4] The data were obtained in 15-minute increments and summarized to provide peak hour traffic conditions for each of the time periods surveyed. The peak hour of roadway network traffic represents the highest total volume entering the intersection on all approaches during four consecutive 15-minute intervals. Traffic count data for the study intersections indicate that peak hour traffic volumes generally occur between 4:45 and 5:45 p.m. on Friday afternoons, between 7:30 and 8:30 p.m. on Saturday evenings, and between 4:00 and 5:00 p.m. on Sunday afternoons.

The project site is located in a summer resort area. Consequently, the collected volumes represent peak month traffic conditions. The existing summer peak hour traffic volumes presented in Figures 3, 4, and 5 (for Friday afternoon, Saturday evening, and Sunday afternoon, respectively). The highest peak hour traffic volumes on County Highway 161 north of Interchange 107 occur during the Friday afternoon peak hour, with 602 vehicles per hour (vph), including 435 (72 percent) northbound vehicles and 167 (28 percent) southbound vehicles. The lowest peak hour traffic volumes on County Highway 161 occur on Saturdays. During the Saturday evening peak hour, County Highway 161 volumes are 128 vph, with 70 (55 percent) northbound vehicles and 58 (45 percent) southbound vehicles. Sunday afternoon peak hour traffic volumes on County Highway 161 are 428 vph, with 147 (34 percent) northbound vehicles

[4] Hours for data collection were selected based on anticipated peak hours of the proposed project. Driveway count data collected between 1996 and 2001 at the existing Mohegan Sun facility in Uncasville, Connecticut indicate that peak hours of an entertainment facility of this type are generally 4:00 to 5:00 p.m. on Fridays, 8:00 to 9:00 p.m. on Saturdays, and 4:00 to 5:00 p.m. on Sundays.

and 281 (66 percent) southbound vehicles. The Friday evening and Saturday evening traffic volumes on County Highway 161 are notably higher than reported in the DEIS and may be due to new development occurring north of the project site drawing summer weekend visitors from Route 17.

2.2.2 Daily Traffic Volumes

Daily traffic volumes recorded in July 2010 for the study area are summarized in Table 1. As shown, the heaviest volumes on State Route 17 occur on Sunday when the roadway carries over 46,000 vehicles per day. The volume on County Highway 161 peaks on Friday when the roadway carries approximately 6,250 vehicles per day. Weekend volumes are lowest on Saturday.

In mid-summer, the daily traffic patterns on County Highway 161 north of Interchange 107 and on Route 17 reflect seasonal, recreational traffic. On Fridays, volumes are heavier heading into the site environs (northbound on County Highway 161 and westbound on Route 17) from the east and New York City area. On Sundays, the reverse pattern is observed.

Table 1 Daily Traffic Volume Summary

	Daily Traffic Volumes (vehicles per day)		
Location	**Friday**	**Saturday**	**Sunday**
County Highway 161 north of Old County Highway			
Northbound	3,400	1,180	2,450
Southbound	2,850	1,110	3,530
Total	6,250	2,290	5,980
Route 17 under County Route 161			
Eastbound	19,200	16,200	28,300
Westbound	24,600	17,200	17,900
Total	43,800	33,400	46,200

Source: Based on traffic volume counts conducted by Tetra Tech Rizzo between Friday, July 9, 2010 and Monday, July 12, 2010.

2.3 Traffic Operations

Existing peak hour traffic operations in the project study area were quantified by calculating intersection operating levels of service.

2.3.1 Level of Service Criteria

Level of service (LOS) is a term used to describe the quality of the traffic flow on a roadway facility during a particular period of time. In terms of accepted engineering practice, LOS is the standard measure used to determine the impacts of development projects on traffic operations. LOS is an aggregate measure of travel delay, travel speed, congestion, driver discomfort, convenience, and safety based on a comparison of roadway system capacity to roadway system

travel demand. Operating levels of service are reported on a scale of A to F, with A representing the best operating conditions and F representing the worst operating conditions. Depending upon the type of facility being analyzed, LOS A represents free-flow or uncongested conditions with little or no delay to motorists, while LOS F represents a forced-flow condition with long delays and traffic demands often exceeding roadway capacity.

Roadway operating levels of service are calculated following procedures defined in the *2000 HCM*. For unsignalized intersections, the operating level of service is based on travel delays. Delays can be measured in the field but generally are calculated as a function of traffic volume; peaking characteristic of traffic flow; percentage of heavy vehicles in the traffic stream; type of traffic control; number of travel lanes and lane use; intersection approach grades; and pedestrian activity. The specific criteria applied for unsignalized intersections per the *2000 HCM* are summarized in Table 2.

For unsignalized intersections, it is assumed that through movements on the major street have the right-of-way and are not delayed by side street traffic. Consequently, the total delay values shown in Table 2 for unsignalized intersections apply only to the minor street intersection approaches or to left turns from the major street (that must yield to oncoming traffic) to the minor street.

Table 2 Unsignalized Intersection Level of Service Criteria

Level of Service	Average Delay per Vehicle (Seconds)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Source: Transportation Research Board, National Research Council, *Highway Capacity Manual*, Special Report 209, Third Edition, Washington, DC, 2000.

2.3.2 Intersection Operating Conditions

The procedures indicated above were used to determine existing peak-hour operating levels of service at the study intersections. The analysis worksheets are contained in Volume II, Appendix B, and the analysis results are presented in Table 3.

As shown, the capacity analysis results indicate that the critical movements at all study area intersections currently operate well under capacity at LOS B or better during summer weekend peak hours.

2.4 Safety Analysis

The accident history for each of the study intersections was evaluated to (1) identify any safety deficiencies and (2) determine if any location experienced a higher than average annual accident

rate (accidents per million entering vehicles). Traffic accident data were obtained from NYSDOT and the Thompson Police Department for the three-year period between 1997 and 2000.

Historical traffic accident data for 1998 to 2000 provided by the Thompson Police Department indicates that only one accident was reported at the study intersections along County Highway 161 (excluding interchange ramps) during the three-year study period. This accident occurred in 1999 at the intersection of County Highway 161 and Old County Highway. It was an angle accident with a vehicle making a left-turn, and it occurred on a clear day during daylight hours, and minor personal injury was reported.

Table 3 Intersection Level of Service Summary – Existing Conditions

	Summer Peak Hour Conditions								
	Friday Afternoon (4:45-5:45 p.m.)			Saturday Evening (7:30-8:30 p.m.)			Sunday Afternoon (4:00-5:00 p.m.)		
Intersection/Approach[1]	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**
State Route 17 EB Off-Ramp/Old Route 17									
LR from State Route 17 Off-Ramp	10	0. 09	A	9	0. 03	A	9	0. 11	A
State Route 17 EB On-Ramp Connection/Old Route 17									
LT from EB Old Route 17	2	0. 02	A	1	0. 00	A	1	0. 01	A
State Route 17 EB On-Ramp Connection/Route 17 EB On-Ramp									
L from EB On-Ramp Connection	9	0. 04	A	9	0. 00	A	10	0. 02	A
County Highway 161/Old Route 17									
LTR from EB Old Route 17	5	0. 05	A	2	0. 01	A	4	0. 03	A
LTR from WB Old Route 17	0	0. 00	A	0	0. 00	A	0	0. 00	A
LTR from NB Kroeger Road	10	0. 00	A	0	0. 00	A	10	0. 00	B
LTR from SB County Highway 161	9	0. 05	A	9	0. 02	A	9	0. 03	A
County Highway 161/State Route 17 WB On-Ramp									
LT from NB County Highway 161	2	0. 02	A	4	0. 01	A	3	0. 02	A
County Highway 161/State Route 17 WB Off-Ramp									
LR from WB State Route 17 Off-Ramp	12	0. 42	B	9	0. 06	A	9	0. 12	A
County Highway 161/Old County Highway									
LR from WB Old County Highway	12	0. 00	B	9	0. 01	A	11	0. 01	B
LT from SB County Highway 161	0	0. 00	A	0	0. 00	A	0	0. 00	A

Notes: [1] L = Left Turn Movement; T = Through Movement; R = Right Turn Movement; EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound
[2] Average delay per vehicle (seconds)
[3] V/C = Volume-to-capacity ratio
[4] LOS = Level of service

As part of their *Route 17 (Future Interstate 86) Interchange Spacing and Geometrics Study*,[5] NYSDOT provided an analysis of historical accident data at all State Route 17 interchanges. The study evaluates the number and type of accidents that occurred in the vicinity of State Route 17 interchanges during the three-year period from September 1996 through August 1999. The results of this analysis for State Route 17 Interchange 107 are highlighted below.

- Incidents reported on the mainline of State Route 17 within Interchange 107 (between on- and off-ramps) between September 1996 and August 1999 included thirteen accidents in the eastbound direction and seven accidents in the westbound direction. Many of these incidents occurred on wet pavement and most involved collisions with animals, other vehicles, or fixed objects. These accident levels represent accident rates of 3.54 (eastbound) and 0.88 (westbound) accidents per million vehicle miles traveled. The statewide expected average for highways is 1.42 accidents per million vehicle miles traveled. The accident rate for the westbound segment of State Route 17 at Interchange 107 direction falls within the expected statewide average accident rate. However, the accident rate for eastbound traffic is nearly 250 percent higher than the expected statewide average. The NYSDOT study notes that grade, stopping distance, and median width are factors that likely contribute to accidents at this location.

- Three incidents occurred on the Interchange 107 westbound off-ramp between September 1996 and August 1999. The accident rate for this ramp is 3. 04 accidents per million entering vehicles, which is well over the statewide average rate for interchange off-ramps (0.18 accidents per million entering vehicles).

- No accidents were reported at Interchange 107 ramp intersections with County Highway 161 and Old Route 17 during the three year study period.

2.5 Public Transportation

A variety of public transportation modes, including, rail, bus, taxi, and limousine are provided to and within Sullivan County. These services are described below.

2.5.1 Train Service

The Metro North Railroad provides regional commuter service from the New York Metropolitan Area to Middletown, New York along its Port Jervis line. The Middletown train station represents the closest and most convenient rail stop to the proposed project site, approximately 17 miles to the east. Local taxi and limousine companies provide shuttle service for passengers visiting the Sullivan County area.

[5] New York State Department of Transportation, April 2001.

In 2003, the NYSDOT (2003) completed the *Catskill Rail Feasibility Study*, which looked at alternative rail alignments to Sullivan County. [6]

2.5.2 Bus Service

The Shortline Bus Company, a Coach USA Company, has provided regular service from the Port Authority Bus Terminal in New York City to the Catskill region for commuters and residents for over 75 years. An express bus service is currently available between New York City and the bus station located in Monticello behind the Government Center Complex. In addition to its primary hub in New York City, Shortline also services Long Island, Queens, Northern New Jersey, Rockland, Orange and Dutchess Counties for commuters and off-peak travel. Presently, Shortline offers multiple local and express trips per day to the Village of Monticello with scheduled stops in adjoining locations including Fallsburg, Liberty, and Wurtsboro. All of these areas are within close proximity to the project site.

2.5.3 Limousine and Taxi

Sullivan County offers six limousine and taxi services providing connections for local and long distance travel to regional and international airports, the New York City area, and all mountain resort areas in the Catskills. Service is available for groups and individuals. Two companies located in Liberty, New York, provide charter van transportation for local or long distance excursions, including airports and special events. The Village of Monticello is serviced by a local taxi service (24 hour/seven days a week service), and also provides radio dispatched cars for local and long distance trips, airports, and delivery service. Additional service is offered to people arriving at or departing from the local airports (Monticello Airport and the Sullivan County International Airport) as well to/from the local bus stations and Metro North Rail Depots.

3.0 Future Traffic Conditions

The design year for the traffic analysis is 2018, the expected completion date for the entire project. Three scenarios for the future design year were analyzed: the No-Build condition (without the proposed development but with other proposed background developments, including the proposed Concord Hotel and Casino), a Build condition (with the background developments and the proposed development), and a Cumulative Build condition. The Cumulative Build condition reflects the Build condition plus traffic from an assumed third casino and the final phases of two very large development projects in the site vicinity.

3.1 Future No-Build Conditions

Future background traffic volumes are determined from growth in existing traffic (background growth) and traffic generated by specific development projects that are expected to impact the study intersections by 2018.

[6] Based on information from an April 8, 2005 meeting with New York State Department of Transportation and New York Thruway Authority officials.

3.1.1 Background and Induced Growth

Background traffic growth generally occurs as a result of population and employment increases in a given area associated with new development. New development can include smaller projects that are not subject to an exhaustive permit process and large projects that are studied at length. For this study, an overall background traffic growth rate was used to consider the traffic impacts of smaller projects while large projects were considered explicitly.

Historic and current traffic data (including seasonal adjustments) were reviewed to determine historic background traffic growth rates. For the DEIS traffic study a traffic volume comparison was made using traffic counts collected by NYSDOT in 1999, counts collected by Sear-Brown in 2000, and traffic volume counts collected by Tetra Tech Rizzo in 2001. The comparison demonstrated that peak hour traffic volumes increased at some locations and decreased at other locations. Over these three years, annual "growth" varied from -20 to +20 percent per year. For the current traffic study, a comparison was made between 2001 volumes on Route 17 at Interchange 107 and volumes recorded in July 2010. This comparison, covering a nine-year time span, shows a three percent decrease in the Friday PM peak hour volumes and an eight percent decrease in the Saturday PM peak hour volumes. (After correcting for an error in the 2001 volumes, the Sunday PM peak hour volumes showed an 11 percent decline by 2010.) A continuation of this trendline would suggest a decline in future traffic volumes; however, to provide a conservative analysis, this study assumes a background growth rate of one percent per year from 2010 to 2013, the year in which the proposed Casino Project is expected to open. For the years 2013 through 2018 a growth rate of 1.5 percent per annum is applied, which is a combination of the one percent background growth rate plus a 0.5 percent induced growth rate reflecting new development which may occur as a consequence of the casino opening.

Traffic volumes generated by background growth and development within a study area do not generally change as a result of the development of other projects. However, because of the unique nature the Casino Project, and because existing traffic volumes on County Route 161 are relatively low, additional growth in traffic volumes may occur with the completion of a casino in the area. Thus, an additional 0.5 percent per year growth rate was also applied to account for additional "induced" growth that may result with the introduction of a casino in the area. A total growth rate of 1.5 percent per year (from 2013 to 2018) was applied to existing traffic volumes as the first step in developing future No-Build traffic volumes. This is consistent with other studies in the area [such as the *Route 17 (Future Interchange 86) Interchange and Geometrics Study*[7] and the *Traffic Impact Study – Mohawk Mountain Resort and Casino*[8]] More recent studies conducted by Alder Consulting in July 2006 for the Concord Community Resort and in 2008 for the Rock Hill Center project also used a one percent per year background growth rate. The 2008 NYSDOT Traffic Planning Study for the NY Route 17B Corridor used an annual growth rate of only 0.5 percent per year.

[7] New York State Department of Transportation, April 2001. This study reported a background growth rate of 1.5 percent per year.

[8] Creighton Manning Engineering, LLP, April 1, 2002; last revised August 8, 2002. This study assumed a growth rate of 1.5 percent per year to represent background and "induced" growth.

3.1.2 Background Development Projects

Data collected from town and county officials, planners, and engineers indicates that several new developments may affect future traffic volumes in the project study area. Table 4 provides a summary of these developments including their size, location, and the estimated peak hour vehicle trip generation. Figure 6 identifies the approximate location of each of these projects. These include all large proposals currently considered active by the Town of Thompson and large projects in neighboring communities identified in the 2008 Route 17B corridor study commissioned by NYSDOT. ("Large" includes projects in Thompson generating 50 or more peak hour vehicle trips and projects in neighboring communities generating 100 or more peak hour trips.) Certain projects that were considered in the DEIS have been built or cancelled and are consequently not included in the current list. (These are listed in the footnotes to Table 4.) Likewise, there are projects on the current list that were not proposed when the DEIS was prepared. The new projects are indicated in bold text in Table 4.

Table 4 Proposed Off-Site Developments

Name	Size	Location	Peak Hour Trips
Kelli Woods	160 dwelling units	Anawana Lake Road, Thompson	72
RNR Mobile Home Park	107 units	Old Liberty Turnpike, Thompson	54
Gated Residential Community	42 Estate Lots	Hilltop Road, Monticello	36
Zader Manor Apartments	184 units	Cold Spring Road, Liberty	94
Proposed Apartments	480 units	Concord Road. (State Route Exit 105a), Thompson	244
Thompson Heights	94 Duplex Units	Cantrell Road, Thompson	42
Proposed Sackett Lake Resort	350 room hotel 300 seat quality restaurant 30,000 sf specialty retail, golf	Off of Route 42 (south of State Route 17), Thompson	544
Concord Hotel and Casino	500 room hotel renovation, casino and support facilities	Off of Route 42 on the east side of Kiamesha Lake, Thompson	1140
Airport Rd &SR 17B	Special use	Bethel	130
Hamilton Road	106 Townhouse units	Intersection of Hamilton Road and Route 42, Monticello	48
Gan Eden Estates	905 units	Columbia Hill, Anawana Lake Road, Thompson	778
Holiday Inn Express	89 unit motel	Route 42 North, Thompson	50
Goodstein Office Building	27,000 sf office at Emerald Corporate Park	Exit 109 off of State Route 17, Rock Hill	4
Fairways at Kiamesha Lake	117 Apartment Units (2 and 3 bedroom)	Next to Concord Golf Course, Thompson	60
Holiday Inn Express	136 room hotel	Anawana Lake Rd. , Thompson	76
Comfort Inn	72 room hotel	Bard Road, Monticello	40

Name	Size	Location	Peak Hour Trips
Thompson Lake Apartments	416 units-1 and 2 bedroom upscale townhouses	Behind Home Depot, Thompson	187
Sterling Homes	75 Upscale Homes	Sackett Lake Road, Monticello	65
Proposed Motel	85 Rooms	Monticello	51
Forest Park Homes	63 homes	Fraser Road, Thompson	54
Kingwood Recreational Homes	350 units	Wild Turnpike, Thompson	126
Treasure Lake Townhouses	150 units	Rock Hill Drive, Thompson	68
Rock Hill Town Center	Phase I – 540 homes; 60,000 sf retail	Thompson	728
Woodstone Lake Homes	180 units	Bethel	155

Notes:
Projects noted in **bold** text were not included in the DEIS.
The following projects were included in the DEIS and are excluded from the FEIS as they have since been constructed or cancelled: Water Park at Holiday Mountain Ski Area, Sullivan Suites Hotel (2 locations), Home Depot, Mohawk Mountain Resort and Casino, and Bethel Performing Arts Center.
Peak hour trips are for Sunday evening. Peaks for individual projects will vary.

Many of the developments listed in Table 4 are residential and hotel developments that would be compatible with a Casino Project as they would provide nearby housing for casino employees and nearby lodging for casino patrons, respectively. Consequently, many of the trips associated with these uses might also be trips to and from the proposed casino project. This study does not consider the possibility of "double counting" these trips and therefore provides a conservative analysis.

Where available, traffic impact studies prepared for the individual background development projects were used to estimate and assign project trips to the roadway network. For other projects, peak hour project-related trips were estimated using the rates published in the Institute of Transportation Engineers (ITE) publication, *Trip Generation*, (Eighth Edition, 2008). Also for these projects, trip distribution patterns were assumed based on patterns assumed in studies for similar, nearby projects.

3.1.3 No-Build Traffic Volumes

The peak hour trips for background development projects were superimposed upon existing traffic volumes grown by 1.0 or 1.5 percent per year through 2018 as described above. The resulting 2018 No Build peak hour traffic volumes are shown in Figures 7, 8, and 9. A comparison of existing condition traffic volumes to future No-Build traffic volumes is presented in Table 5. Note that the difference between 2010 existing and 2018 No-Build traffic volumes includes the impacts of the future background growth and specific development proposals.

Table 5 Traffic Volume Summary – Existing and No-Build Conditions

	Peak Hour Traffic Volumes								
	Friday Afternoon			Saturday Evening			Sunday Afternoon		
Location	**Existing**	**No-Build**	**Difference**	**Existing**	**No-Build**	**Difference**	**Existing**	**No-Build**	**Difference**
County Highway 161									
At the Project Site	600	905	305	130	385	255	430	695	265
Old Route 17									
West of Int. 107 EB Off-Ramp	165	180	15	60	65	5	95	105	10
East of County Highway 161	105	115	10	55	60	5	95	110	15
State Route 17 Interchange 107 Ramps									
Eastbound Off-Ramp	85	145	60	25	95	70	105	170	65
Eastbound On-Ramp	140	220	80	45	105	60	230	310	80
Westbound Off-Ramp	410	505	95	65	140	75	115	180	65
Westbound On-Ramp	80	150	70	20	80	60	85	155	70
State Route 17									
West of Interchange 107	3430	6015	2585	2395	4885	2490	3210	5530	2320
East of Interchange 107	3815	6445	2630	2455	4955	2500	3365	5695	2330

Along County Highway 161, background growth and development over the eight-year period results in peak hour traffic volume increases of 255 to 305 vph (51-196 percent) at the project site. With the exception of the Concord Hotel and Casino, the background development projects identified are not expected to add significant traffic to County Highway 161. Along Old Route 17, traffic volumes increases are much less significant with increases only five to 15 vph. State Route 17 Interchange 107 ramps experience traffic volume increases between 60 and 95 vph per ramp (23-300 percent increases). State Route 17 traffic volumes are anticipated to increase by between 2,320 and 2,630 vph, which is approximately 72 and 69 percent respectively, compared to existing conditions. Again, these estimated increases are conservative as they assume that project generated trips are drawn from outside the immediate area on Route 17 rather than generated internal to the area by other nearby land uses.

3.1.4 No-Build Intersection Operating Conditions

The procedures indicated above were used to determine future No-Build weekend peak-hour operating levels of service at the study intersections. The analysis worksheets are provided in Volume II, Appendix B, and the analysis results are presented in Table 6. The results indicate that the critical movements at all of the study area intersections will continue to operate well under capacity at LOS A or B under future No-Build conditions.

Table 6 Intersection Level of Service Summary – Future No-Build Conditions

	Summer Peak Hour Conditions								
	Friday Afternoon (4:45-5:45 p.m.)			Saturday Evening (7:30-8:30 p.m.)			Sunday Afternoon (4:00-5:00 p.m.)		
Intersection/Approach[1]	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**
State Route 17 EB Off-Ramp/Old Route 17									
LR from State Route 17 Off-Ramp	10	0. 17	B	9	0. 10	A	10	0.	A
State Route 17 EB On-Ramp Connection/Old Route 17									
LT from EB Old Route 17	1	0. 02	A	0	0. 00	A	1	0. 01	A
State Route 17 EB On-Ramp Connection/Route 17 EB On-Ramp									
L from EB On-Ramp Connection	10	0. 05	A	9	0. 00	A	10	0.	B
County Highway 161/Old Route 17									
LTR from EB Old Route 17	6	0. 09	A	5	0. 05	A	6	0.	A
LTR from WB Old Route 17	0	0. 00	A	0	0. 00	A	0	0.	A
LTR from NB Kroeger Road	11	0. 00	B	0	0. 00	A	11	0.	B
LTR from SB County Highway 161	10	0. 06	A	9	0. 02	A	10	0. 04	A
County Highway 161/State Route 17 WB On-Ramp									
LT from NB County Highway 161	2	0. 03	A	1	0. 01	A	2	0. 02	A
County Highway 161/State Route 17 WB Off-Ramp									
LR from WB State Route 17 Off-Ramp	15	0. 58	B	9	0. 14	A	10	0.	B
County Highway 161/Old County Highway									
LR from WB Old County Road	15	0. 01	B	10	0. 01	A	13	0.	B
LT from SB County Highway 161	0	0. 01	A	0	0. 00	A	0	0.	A

Notes: [1] L = Left Turn Movement; T = Through Movement; R = Right Turn Movement;
EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound
[2] Average delay per vehicle (seconds) [3] V/C = Volume-to-capacity ratio [4] LOS = Level of service

3.2 Future Build Conditions

The discussion of future Build conditions includes proposed roadway improvements by others, proposed access improvements, sight distance analysis, project-generated traffic, trip distribution and assignment, Build condition traffic volumes, intersection and freeway ramp operations analyses, and public transportation impacts. Several alternatives were evaluated for the layout of the project site driveway, for the Old County Highway connection to County Highway 161, and for design improvements for State Route 17 Interchange 107. A discussion of these various alternatives is provided in the DEIS. Based on an evaluation of advantages and disadvantages associated with each alternative, a preferred alternative was recommended and assumed in this study as part of the future Build conditions.

3.2.1 Proposed Roadway Improvements by Others

Independent of this project, NYSDOT is currently undergoing the *Route 17 (Future Interchange 86) Interchange and Geometrics Study*[9] to identify and address interchange spacing and interchange geometric features necessary to meet Interstate standards on State Route 17. The process of updating State Route 17 to Interstate standards involves improving or consolidating selected interchanges based upon Interstate spacing, geometrics, and service requirements. A summary of State Route 17 improvements in Sullivan and Orange Counties is provided in Section 3. 4 ("Regional Impacts").

As part of their study, NYSDOT is planning improvements for State Route 17 Interchange 107 in Thompson. Preliminary NYSDOT plans for Interchange 107 include realignment of westbound on- and off-ramps to improve turning radii; relocation/reconstruction of the State Route 17 eastbound on and off-ramps to improve alignment and turn radii; extension of the eastbound acceleration lane on State Route 17 by 100 feet; and reconstruction of the overpass bridge to provide adequate (16 feet) vertical clearance.

NYSDOT is also considering eliminating State Route 17 Interchange 108. Interchange 108 is located 0. 9 mile east of Interchange 107 and 0. 9 mile west of Interchange 109 and offers partial access only in the eastbound direction. If this interchange closes, traffic will divert to Interchanges 107 and 109. Since these interchanges are equidistant from Interchange 108, traffic volumes will likely be divided equally between the two. Today, peak hour traffic volumes at Interchange 108 include 20 vph on the eastbound off-ramp and 30 vph on the eastbound on-ramp. Fifty percent of these trips (10-15 peak hour vehicles per ramp) diverted to Interchange 107 will not significantly impact traffic operations at Interchange 107.

3.2.2 Proposed Access Improvements

The existing roadway network in the vicinity of the project will require geometric and traffic control improvements to accommodate the anticipated project traffic. Proposed improvements include site access improvements, State Route 17 Interchange 107 improvements, intersection

[9] New York State Department of Transportation, April 2001.

improvements, County Highway 161 roadway improvements and alignment options, and on-site improvements. The proposed access improvements to be implemented with this project are shown on Figure 10 and are described below.

Site Access Improvements

- **Widen County Highway 161.** County Highway 161 will be widened between State Route 17 Interchange 107 and the proposed project site driveway to provide two lanes in each direction and a landscaped median. In the northbound direction, two lanes will be provided on County Highway 161 between the Interchange 107 westbound off-ramp and the proposed project site driveway. In the southbound direction, two lanes will be provided between the project site driveway and the Interchange 107 eastbound on-ramp. North of the interchange, the widening for the additional lanes and median will occur on the eastern side of the existing roadway to minimize right-of-way and wetland impacts. This improvement will provide sufficient capacity to accommodate traffic generated by the proposed project, and this design will provide a safe, consistent, and attractive transition between State Route 17 Interchange 107 and the project site.

- **Provide emergency access via Foss Road extension.** Emergency access is planned to connect County Highway 161 to the southern end of the project site by way of an existing portion of Foss Road. Foss Road will be extended to connect County Highway 161 approximately 1,350 feet south of the proposed project site driveway (see Figure 10). A median break and a full traffic signal will be provided at the new intersection of County Highway 161/Foss Road extension to provide safe, adequate access for the residential neighborhoods and for emergencies. The use of this driveway to the east of the Foss Road neighborhood will be gated and used only during emergencies.

- **Close off and cul-de-sac Old County Highway.** The north end of Old County Highway at County Highway 161 will be closed off and a cul-de-sac will be provided at this location. Access to the Old County Highway and Foss Road neighborhoods will be provided via the proposed Foss Road extension described above. Relocating the primary access location for these neighborhoods further to the south and reconfiguring the intersection to provide a more conventional "T" intersection improves sight distance and provides a safer distance from the proposed site driveway. The proposed traffic signal at this intersection also improves safety for vehicles turning into and out of the Foss Road/Old County Highway neighborhood.

State Route 17 Interchange 107 Improvements

As part of the Casino project, coordination meetings were held with NYSDOT to determine appropriate improvements for State Route 17 Interchange 107 that will support regional growth as well as traffic growth from the proposed casino project. As part of their *Route 17 (Future Interchange 86) Interchange and Geometrics Study*,[10] NYSDOT plans to realign westbound on- and off-ramps; relocate/reconstruct the eastbound on and off-ramps; extend the eastbound acceleration lane on State Route 17; and reconstruct the bridge to provide adequate (16 feet) clearance at this interchange. Since NYSDOT's recommendations for interchange improvements (which closely match the

[10] New York State Department of Transportation, April 2001.

proponent's proposed improvements) did not consider the increased volumes from a casino, broader scale design solutions are being considered, particularly for the eastbound on-ramp from Old Route 17.

This study concurs with and incorporates NYSDOT's proposed improvements for State Route 17 Interchange 107. Several additional improvements are also recommended. All Interchange 107 improvements are summarized below.

- **Reconstruct County Highway 161 bridge over State Route 17.** In addition to NYSDOT plans to raise the height of the County Highway 161 bridge over State Route 17, the bridge will be widened to approximately 56 feet to provide an additional (second) lane in the southbound direction, and potentially space for a second northbound lane if warranted in the future (assuming a minimum of four-foot shoulders). The additional southbound lane over the bridge will provide the needed capacity for vehicles leaving the project site and accessing eastbound State Route 17. This improvement can be coordinated with NYSDOT plans to raise the height of the bridge to comply with interstate requirements for a minimum of sixteen feet of vertical clearance. The bridge design will also accommodate future roadway widenings for State Route 17 when/if needed.

- **Realign State Route 17 Interchange 107 westbound ramps.** As recommended by NYSDOT, the left turn lane on the Interchange 107 westbound off-ramp will be moved by approximately 120 feet to the south. The westbound on-ramp that provides access from northbound County Highway 161 will also be moved 120 feet south of its existing location (see Figure 10 and Volume II, Appendix C). Both westbound ramps will be realigned to improve turning radii, provide additional vehicular stacking, and improve safety.

- **Reconstruct Interchange 107 eastbound off-ramp.** The length and turning radius of the eastbound off-ramp do not currently meet interstate highway standards. As planned by NYSDOT, this ramp will be lengthened and realigned it to improve the turning radii. The intersection of this ramp with Old Route 17 will be moved approximately 120 feet southeast of its existing location. Improvements for this ramp are shown in Volume II, Appendix C.

- **Relocate/improve Interchange 107 eastbound on-ramp connection.** The existing connection between Old Route 17 and the Interchange 107 eastbound on-ramp is unconventional (STOP-sign control is currently provided mid-way on the on-ramp) and provides unsafe conditions for drivers accessing State Route 17 eastbound. Improvements at this location include eliminating the existing eastbound on-ramp and providing a new ramp adjacent to the new eastbound off-ramp, or approximately 50 feet northwest of its existing location. Eastbound on- and off-ramps would be adjacent to each other, consolidating all ramp access to a single intersection on Old Route 17. A channelized right turn lane would be provided for vehicles turning right from Old Route 17 onto the Route 17 Interchange eastbound on-ramp. Although not warranted as a result of the Casino Project (see Volume II, Appendix D), a traffic signal may be considered at this location if/when needed in the future.

- **Widen Old Route 17 between ramps and County Highway 161.** As part of the Interchange 107 eastbound on-ramp improvements, a second westbound lane is proposed for Old Route 17 between County Highway 161 and the Interchange 107 on/off ramps. This lane

would primarily serve vehicles leaving the Casino site and accessing eastbound State Route 17. A key benefit of this improvement is that the existing STOP-sign control mid-way on the ramp is replaced with a merge movement, providing safer, more efficient operations for vehicles accessing eastbound State Route 17. The new alignment for this ramp, which is also under consideration by NYSDOT, is shown in Volume II, Appendix C.

- **Extend eastbound acceleration lane at Interchange 107.** NYSDOT reported that the eastbound stretch of State Route 17 at Interchange 107 experiences accident rates nearly 250 percent higher than the expected statewide average accident rate for similar highway elements. NYSDOT plans to extend the eastbound acceleration lane on State Route 17 by 100 feet to help improve safety at this location. This is an important improvement for the proposed project as well because approximately 75 percent of the project-related traffic is expected to use this portion of State Route 17.

- **Provide exclusive northbound left-turn lane at westbound on-ramp.** The existing peak hour volume for the northbound left-turn at the intersection of County Highway 161 and Interchange 107 westbound on-ramp is generally less than 60 vph and this turn volume will not increase as a result of the proposed development. However, the volume of traffic headed southbound at this location will increase substantially as casino patrons return to Route 17 eastbound. Given this expected increase in opposing traffic for the left-turn movement, an exclusive northbound left-turn lane is proposed to improve safety.

Meetings have been held with local, county and state transportation officials to review the proposed improvements at Interchange 107. Additional coordination meetings may be required with NYSDOT to determine appropriate improvements that will support regional growth as well as traffic growth from the proposed casino and other developments in the area. NYSDOT feels that the proposed design is acceptable, and they have requested that any recommended improvements for Interchange 107 also allow for three lanes in each direction on Route 17, if and when they are needed in the future.

NYSDOT has reviewed the common “reverse betterment” agreement process by which a private entity and NYSDOT enter into an agreement about how design, bid and construction stages of improvements get advanced and financed. In general, NYSDOT will pay for the costs of the improvements that they have already assumed, and the casino would pay for anything above and beyond that. There will likely be two agreements, one for design and a second for construction.

Discussions between proponents of the project and NYSDOT will need to continue to determine the next steps in moving ahead with the improvements. NYSDOT indicated that their build schedule is unknown due to state budget issues. Casino construction could begin in 2012. The proponent will continue to work closely with the State to coordinate, plan, implement, and provide a portion of the funding for appropriate improvements at State Route 17 Interchange 107.

Intersection Improvements

- **Signalize Site Driveway at County Highway 161.** The proposed project site driveway at County Highway 161 will be signalized and provide exclusive channelized double turn lanes

into and out of the site. Since a majority of the proposed traffic volumes will originate from south of the site, the project site driveway will be designed to provide two northbound right-turn lanes and two exclusive westbound left-turn lanes (see Volume II, Appendix C). The southbound approach will include a through movement and an exclusive left-turn lane to serve vehicles originating from areas north of the site. Signalization will occur in three phases[11] and signal timings will be optimized to maximize intersection operations and safety (see Volume II, Appendix B for analyses).

- **Signalize Proposed Foss Road extension at County Highway 161.** Although future condition traffic volumes exiting Old County Highway are low (between 15 and 30 vph), significant delays are expected to occur because of the heavy peak hour through traffic volumes anticipated along County Highway 161. Without signalization, side street movements to and from Foss Road could experience up to 70 seconds of delay during peak hours under future Build peak month conditions (analysis provided in Volume II, Appendix B). Although projected traffic volumes at the intersection of the proposed Foss Road extension at County Highway 161 do not warrant signalization under future Build conditions, signalization of this intersection has been proposed to improve traffic operations, safety, and minimize delays for side street movements.

- **Intersection Improvements at County Highway 161/Old Route 17.** Analyses of future peak month Build condition traffic operations indicate that the southbound approach of this intersection will operate at LOS C (Saturday evening) or F (Friday afternoon and Sunday afternoon) under future Build conditions if no improvements are provided. In the future, queues on the southbound approach to this intersection could potentially interfere with the large number of vehicles turning right to access the Interchange 107 eastbound on-ramp. In addition, the eastbound Old Route 17 left-turn movement increases substantially under Build conditions primarily due to shared trips among the project and other proposed casino(s). To address these issues, exclusive southbound and eastbound left-turn lanes, and a channelized southbound right turn lane are proposed for this intersection. Traffic signal warrant analyses for this intersection (see Volume II, Appendix D) under future Build conditions indicate that peak hour traffic signal warrants are not met. However, in the future, further development along Old Route 17 would add to the traffic at this intersection. In consideration of possible future development, the intersection of County Highway 161 at Old Route 17 will also be equipped with conduits and wiring necessary to provide a traffic signal at this location in the future when/if necessary. Signalization of this intersection results in LOS B or better operations for the key weekend peak hours under future Build conditions.

There has been local concern regarding the safety implications of future traffic growth and project-related traffic along County Highway 161 to the north of the proposed project site. The ability of drivers to view obstructions or other vehicles within the traveled way for an adequate distance is of primary importance in the safe and efficient operation of a vehicle on the street. Proper street design requires sight distance of sufficient length so that drivers can control the operation of their vehicles and avoid striking unexpected objects on the traveled way. North of

[11] The three phases for the proposed traffic signal include: (1) southbound left and through movements; (2) southbound through movements with northbound through and right movements; and (3) westbound left and right movements with free northbound right movements.

the project site, County Highway 161 experiences several horizontal curves and vertical grade changes that may impact sight lines for vehicles entering and exiting side streets and private driveways along this roadway. However, as discussed in detail below, alterations along County Highway 161 at intersections to the north of the site are not warranted in terms of safety standards, and are not recommended because they would be costly in terms of finances, land takings, and aesthetics.

Per standards described in *A Policy on Geometric Design of Highways and Streets* (American Association of State Highway and Transportation Officials [AASHTO], 1990), field observations by Rizzo Associates in March 2001 indicate that sight lines along County Highway 161 north of the site at its intersections with Route 109 (Kiamesha Lake Road), Thompsonville Road/River Road, and Downs Road are adequate (over 250 feet) for vehicle speeds in excess of 35 mph along County Highway 161. In this vicinity, the posted speed limit along County Highway 161 is 30 mph (both directions). Thus, adequate sight lines are currently available. In addition, alteration of the horizontal or vertical curvature along County Highway 161 would result in land takings and aesthetic impacts. The winding nature of County Highway 161 is consistent with the rural charm and character of the Catskills. Altering this roadway would result in temporary construction impacts as well as long-term impacts to the natural character of the roadway. As an alternative to roadway improvements, additional speed limit signs could be posted[12] and travel speeds along County Highway 161 could be regularly monitored by police to enhance safety for vehicles traveling to and from the north along this roadway.

County Highway 161 Roadway Alignment Options

Several alignment options are available for the southern end of County Highway 161 in the vicinity of Old Route 17. The proposed alignment for this road is similar to (or slightly east of) the existing alignment. Similar to today, the portion of County Highway 161 to the south of State Route 17 Interchange 107 follows the curve of the eastbound on-ramp, creating a reverse curve on the approach to its intersection with Old Route 17. Improvements to this alignment can eliminate the reverse and broken-back curves and, along with added turning lanes at County Highway 161/Kroeger Road/Old Route 17, provide both operational and safety benefits. Two additional options for the alignment of the southern end of County Highway 161 and associated benefits and impacts are described below.

- **Alternative 1: Realign County Highway 161 300 feet east.** A more direct connection could be provided between the south end of County Highway 161 and Old Route 17 if it were moved approximately 300 feet east of its existing location. This alignment is shown graphically in Volume II, Appendix C ("Alternative 1"). The southbound leg of County Highway 161 would be separated from the northbound leg of Kroeger Road by 300 feet, which would improve delays for left-turning vehicles at both of these locations. As part of this improvement, the horizontal alignment of Old Route 17 east of County Highway 161 would also be improved to eliminate the broken-back curve and thereby improve safety and sight lines along this roadway. The main impact of this improvement would be the taking of the home located on the northeast corner of the existing intersection.

[12] Additional speed limit signs are proposed for along County Highway 161 in the vicinity of its intersections with Route 109 (Kiamesha Lake Road), Thompsonville Road/River Road, and Downs Road.

- **Alternative 2: Realign County Highway 161 450 feet east.** As another alternative, the south end of County Highway 161 could be realigned an additional 150 feet to the east (450 feet east of its existing location) and east of the adjacent residence. This alignment is shown graphically in Volume II, Appendix C ("Alternative 2"). This option provides similar benefits in terms of LOS operations as those described for Alternative 1, but in an effort to reduce the impacts to the existing residence on the northeast corner of the intersection, the alignment of Old Route 17 is not improved with this alternative.

On-Site Improvements

In addition to off-site improvements, the proposed project will also incorporate several on-site improvements. On-site improvements are highlighted below.

- **Four-lane entrance driveway and one-way loop on-site circulation.** The proposed site driveway will consist of a two-way entrance driveway and a one-way (counter-clockwise) loop circling around the majority of the buildings on the site. The site entrance/exit will provide four lanes (two lanes in each direction) east of County Highway 161 up to and including the southern half of the "loop road. " A one-lane, one-way roadway will be provided for the northern portions of the loop. A two-way east/west connection will also be provided through the center of the loop so that vehicles may by-pass the parking garage (for example, drivers picking up or dropping off passengers). Peak hour traffic volumes entering or leaving the site include up to 1,260 vehicles in the peak direction. The proposed entrance/exit driveway has been designed to provide adequate capacity and on-site vehicular stacking space to serve these vehicles.

- **Minimize On-Site Bus Idling.** Buses that arrive and depart the site will not remain in the bay for more than 15 minutes at a time. In the event that they remain in the bay for more than 15 minutes, they will be turned off. Efficient design of bus loading/unloading areas will also minimize on-site bus idling.

The improvements included as part of this project will accommodate future traffic volumes with the proposed project, and provide safe, efficient, and optimal access to and from the site. The proponent will cover the cost of on-site and intersection improvements. County Highway 161 roadway alignments will also be funded by the proponent, subject to the approval of the County. Because the state was already planning to improve State Route 17 Interchange 107, the cost of these interchange improvements will likely be shared with NYSDOT. The proponent has met with and is currently in discussions with NYSDOT regarding the coordination with the state for interchange improvements.

3.2.3 Sight Distance Analysis

The ability of drivers to view obstructions or other vehicles within the traveled way for an adequate distance is of primary importance in the safe and efficient operation of a vehicle on the street. Proper street design requires sight distance of sufficient length so those drivers can control the operation of their vehicles and avoid striking vehicles or unexpected objects on the traveled way. Sight distance standards are described in *A Policy on Geometric Design of Highways and*

Streets (American Association of State Highway and Transportation Officials [AASHTO], 1990). Sight distance may be defined as the length of a roadway necessary to enable a vehicle traveling at a specified speed to come to a full stop before reaching an object in the roadway.

As part of this study, a sight distance analysis was conducted at the location of the proposed site driveway along County Highway 161. All vehicles generated by the proposed project are expected to use this intersection. As part of the sight distance evaluation, Tetra Tech Rizzo also conducted vehicle travel speed surveys on County Highway 161 during non-peak hours on Wednesday, March 21, 2001. Speed limits are not posted along County Highway 161 in the immediate vicinity of the project site, but observed travel speeds on County Highway 161 ranged from 40 to 50 mph in both directions. [13]

Table 7 summarizes the sight distance measurements and the AASHTO requirements for the intersection of County Highway 161 and the proposed project site driveway. Sight distance requirements are presented for the range of observed travel speeds (40 to 50 mph) along County Highway 161.

Field measurements indicate that approximately 1,100 feet of sight distance is available to the north of proposed project site driveway, and 700 feet of sight distance is available to the south. AASHTO guidelines recommend a minimum sight distance ranging from 275 to 325 feet for speeds of 40 mph and 400 to 475 feet for speeds of 50 mph. Thus, available sight distance is adequate in both directions for observed speeds on County Highway 161.

Table 7 Sight Distance Summary

	Proposed Site Driveway at County Highway 161					
	From North			From South		
Sight Distance[1] (feet)	**Measured[1]**	**Required**	**Adequate**	**Measured[1]**	**Required**	**Adequate**
Lower Range of Observed Speed (40 mph)	1,100	275-325	Yes	700	275-325	Yes
Upper Range of Observed Speed (50 MPH)	1,100	400-475	Yes	700	400-475	Yes

Source: American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 1990.
Note: [1] Sight Distance measurements performed by Rizzo Associates on Thursday, March 22, 2001.

3.2.4 Project Generated Traffic

Traffic volumes generated by the proposed project were estimated and assigned to the roadway network (with proposed improvements) in order to develop the 2018 Build condition peak hour traffic volumes. Procedures used to generate and assign trips to the roadway network are described below. A trip is defined as a one-way movement to or from the site. One vehicle entering and leaving a site constitutes two vehicle trips.

The proposed project in Thompson, New York is nearly identical to Phase I of the Mohegan Sun entertainment facility in Uncasville, Connecticut. The only significant difference is that the Stockbridge-Munsee project in Thompson will include a 750-room hotel whereas there was no

[13] Based on field observations by Rizzo Associates, Inc., March 21-22, 2001.

hotel component in Phase I of the Mohegan Sun project. Consequently, traffic forecasts for the Stockbridge-Munsee project are based on observed Phase I conditions at Mohegan Sun with traffic added to account for the hotel.

When Phase I of the Mohegan Sun casino project opened in 1996, an extensive traffic data collection program was undertaken to measure the quantity of traffic traveling to/from that site. Counts collected on a typical summer weekend (Friday, June 25, through Sunday, June 27, 1999) at the Mohegan Sun facility were used to forecast project trips for the proposed Stockbridge-Munsee project. The traffic volumes during these three days represent ninety-fifth percentile volumes[14] for the Mohegan Sun facility. A summary of the Mohegan Sun count data is provided in Volume II, Appendix E.

Trip generation estimates for the proposed hotel are based on rates from the Institute of Transportation Engineers (ITE) *Trip Generation* manual, 6th Edition, 1997, Land Use Code 310 ("Hotel"). It is likely that most of the traffic generated by the hotel will be shared trips with the casino and therefore would generate no additional ("new") trips. However, to present a conservative analysis, thirty percent of the total trips generated by the proposed 750-room hotel are assumed to be new trips. The remaining seventy percent of the hotel trips are assumed to be shared hotel/casino trips.

Similar to the Mohegan Sun facility, the Stockbridge-Munsee facility will be built in phases. Approximately 55 percent of the casino/entertainment facility space will be built in the first phase. The second phase will include construction of the hotel and the balance of the casino/entertainment facility. Both phases are expected to be built by 2018.

Table 8 summarizes the estimated trip generation for the proposed project during peak summer months.

Table 8 Project Trip Generation Summary – Total Trips

	Friday Daily Trips	Friday Afternoon Peak Hour[1] Trips			Saturday Daily Trips	Saturday Evening Peak Hour[1] Trips			Sunday Daily Trips	Sunday Afternoon Peak Hour[1] Trips		
		In	Out	Total		In	Out	Total		In	Out	Total
Proposed Casino[2]	28,650	847	1,056	1,903	34,620	1,171	930	2,101	32,770	956	1,160	2,116
Proposed Hotel[3]	1,900	83	74	157	2,080	88	69	157	1,920	68	80	148
Total Trips	**30,550**	**930**	**1,130**	**2,060**	**36,700**	**1,259**	**999**	**2,258**	**34,690**	**1,024**	**1,240**	**2,264**
Phase I Trips	**15,328**	**453**	**565**	**1,018**	**18,522**	**626**	**498**	**1,124**	**17,532**	**511**	**621**	**1,132**

Notes:
[1] Friday afternoon peak hour for the proposed project traffic is 4:00 to 5:00 pm. Saturday evening peak hour is generally between 8:00 and 9:00 pm, and Sunday afternoon peak hour is 4:00 to 5:00 pm.
[2] Based on 95th percentile of driveway counts collected between 1997 and 2001 at the Mohegan Sun facility in Uncasville, Connecticut.
[3] Based on rates from Institute of Transportation Engineers *Trip Generation* manual, 6th Edition, 1997, Land Use Code 310 (Hotel). It is assumed that thirty percent of the trips generated by the proposed hotel are new trips (the remaining seventy percent are shared

[14] For ninety-five percent of the days on which counts were collected (including both weekday and weekend days throughout the year), total daily trips to and from the Mohegan Sun included approximately 34,500 or less vehicles per day. This volume of daily traffic is generally experienced at the Mohegan Sun on Saturdays during the summer.

trips with the casino).

Peak hour trip generation for the proposed project includes 2,060 trips (45 percent entering and 55 percent exiting) on Fridays, and approximately 2,260 trips on both Saturdays (56 percent entering and 44 percent exiting) and Sundays (45 percent entering and 55 percent exiting). Of these trips, approximately 94 percent are generated by the Casino and six percent are generated by the proposed hotel. The peak hour trip forecasts for the Casino Project are considerably higher than those used in studies for other casinos in the project area. The Casino project trips are 26 to 49 percent higher than the trips estimated for the Concord Hotel and Casino. They are 62 to 88 percent higher than the predicted trips for the Mohawk Mountain Resort casino. (The Mohawk Mountain Resort casino was an active proposal when the DEIS was prepared and was included in the DEIS analysis. It referenced later in this study in the development of the Cumulative Build traffic scenario.) Accordingly, the traffic forecasts for the Casino Project are quite conservative.

Bus trips were estimated based on existing bus trip generation at the Mohegan Sun. The proposed project is anticipated to attract approximately 100 buses per day (100 bus trips in and 100 bus trips out). During the week, the bulk of the buses will enter the site during the morning hours. Bus trips will be more evenly spread out on weekends. It is estimated that buses could generate between 20 and 30 trips during the weekend peak hours. These numbers are included in the total trip generation estimates presented in Table 8.

Trips generated by background growth and development in the area are expected to generate pass-by trips into and out of the site. Pass-by trips are trips that enter and exit the project site as they pass by the site. Since pass-by trips are already on the adjacent street, they do not represent "new" trips. According to the ITE *Trip Generation Handbook*,[15] pass-by trips for retail uses can range between 20 and 60 percent of the background traffic passing by the site. If ten percent of all trips generated by background traffic on County Highway 161 were assumed to enter and exit the proposed project while passing by the site, there would be a decrease in "through" traffic volumes along County Highway 161 (both directions) of 20 to 60 vph during peak hours. To present a conservative analysis, traffic volumes were not decreased to account for pass-by trips.

A portion of the traffic generated by the proposed project will likely be trips diverted off of State Route 17. As such, these vehicles would already be traveling along State Route 17 and therefore would not represent "new" trips associated with the Casino Project. To provide a conservative analysis, all "diverted" trips are assumed to be "new" trips, and are included in the total trip generation estimates presented in Table 8.

Shared trips are likely to occur between other hotels in the area and the proposed casino. This analysis assumes no "shared" hotel trips to be conservative.

[15] Institute of Transportation Engineers, *Trip Generation Handbook, an ITE Proposed Recommended Practice*, Washington, DC, 1998.

Shared trips are also likely to occur among multiple casinos if and when built in the area. For the 2018 No Build and 2018 Build scenarios it is assumed that the Concord Hotel and Casino is operational. The 2018 Build traffic forecasts assume that shared trips occur between the Concord Hotel and Casino and the Proposed Casino. Likewise, opening of a third casino is assumed under the Cumulative Build scenario as described later in this study. Under the Cumulative Build scenario shared trip making is assumed among all three casinos. Estimation of the percentage of shared trips for each casino is based on studies done in Connecticut as described below.

Studies done at the Foxwoods and Mohegan Sun Casinos in Connecticut provide some guidance relative to the estimation of shared trips between two closely spaced casinos. The Foxwoods and Mohegan Sun Casinos are located approximately 13 miles from each other. [16] Foxwoods casino off of Route 3 in Ledyard, Connecticut, opened in 1992 without slot machines, then added slot machines in 1993. The Mohegan Sun casino in Uncasville, Connecticut, opened in 1996. To estimate shared trip rates among multiple casinos, daily traffic volumes from 1990 through 1999 were reviewed for major roadways serving these two Connecticut casinos (Routes 2, 12, 32, 84, 95, 117, and 395). Traffic volume data for these roadways suggests that addition of a second casino within a 13 mile radius of an existing casino does not double the amount of traffic on major roadways generated by the first casino. Rather, the second casino results in traffic volume increases ranging between zero and 70 percent of the traffic generated by the first casino. This suggests shared trip percentages in the range of 30 to 100 percent.

Data for Atlantic City were considered when assessing the shared trip aspects of three casinos in close proximity. Visitor count data for Atlantic City suggests that a second and third casino results in increases of approximately 35 and 30 percent, respectively, compared to the number of visitors for a single, stand alone casino. This data suggests shared trip rates of approximately 65 percent with two casinos and 70 percent with three casinos.

To provide a conservative analysis, the traffic analysis for the Casino Project assumes that only 70 percent of the trips to a second casino are new trips and that only 50 percent of the trips to a third casino are new trips. In other words, it is assumed that three casinos (each attracting the same number of visitors) will draw 120 percent more traffic to the area relative to one casino. Again, this is a conservative assumption based on the Atlantic City and Connecticut experiences. These experiences suggest that the casino market in a given area is limited. Providing multiple gaming venues does not proportionally expand the market, it only splits the existing market among multiple destinations.

For this study the Concord Hotel and Casino is considered first from a traffic perspective as it is included in the 2018 No Build scenario (which is evaluated before the 2018 Build conditions are evaluated). However, since the traffic forecasts for the Proposed Casino are much higher than those for the Concord Hotel and Casino, the Proposed Casino is considered to be the “first” casino in the market for the shared trip analysis. This provides a more conservative analysis condition, that is, it adds more new trips to the roadway system. The Concord Hotel and Casino is treated as the second casino. For the Cumulative Build scenario a third casino is considered.

[16] The Foxwoods and Mohegan Sun casinos in Connecticut are approximately 13 miles, or 21 minutes (drive time) apart. Based on location considered previously for other casinos, the proposed casinos in Thompson, New York are also likely to be within 13 miles of each other.

3.2.5 Trip Distribution and Assignment

The distribution and assignment of anticipated project vehicle trips to the roadway network is based on a market analysis prepared for this project, a review of other area studies, and existing peak hour traffic patterns in the vicinity of the proposed site. The market analysis is presented in Volume II, Appendix G, and the estimated trip distribution pattern based on this analysis is presented in Table 9.

Table 9 Market Analysis Trip Distribution

Direction	Distribution Percentage
East on State Route 17	75%
West on State Route 17	16%
North on County Highway 161	8%
East on Old Route 17	0.5%
West on Old Route 17	0.5%
Total	**100%**

The market analysis indicates that ninety-two percent of the project traffic will originate from south of the project site. Of this 92 percent, over 75 percent of the traffic generated by the project will be oriented to the east, primarily on State Route 17 to and from New York City and the surrounding metropolitan area. The remainder of the traffic (16-17 percent) is expected to originate to/from the west (primarily on State Route 17). Eight percent of the project traffic is assumed to originate from the north on County Highway 161.

Due to a number of existing and proposed camps, hotels, and resorts located north/northwest of the site (particularly the Concord Hotel and Casino), four percent of the traffic anticipated to originate from the west on State Route 17 was assumed to use local roads to access the site from the north on County Highway 161. The adjusted trip distribution pattern is presented in Table 10 and shown in Figure 11.

Separate patterns were developed for patron/customer trips and employee trips. The market studies suggest that a very high percentage of the customer trips will originate in the New York City metropolitan area. Employees are likely to reside much closer to the Proposed Casino and thereby have less of an impact on the transportation system. Studies of other casinos previously proposed in the area refer to data collected at the Foxwoods casino in Connecticut to claim that up to 35 percent of peak hour trips are employee trips. For the Casino Project, it is conservatively assumed that only 15 percent of the peak hour trips are employee trips. The assumed trip distribution pattern for employee trips, based approximately on the local population distribution, is also shown in Table 10.

Table 10 Final Trip Distribution

Direction	Distribution Percentage (Patrons)	Distribution Percentage (Employees)
East on State Route 17	75%	30%
West on State Route 17	12%	50%
North on County Highway 161	12%	10%
East on Old Route 17	0.5%	5%
West on Old Route 17	0.5%	5%
Total	**100%**	**100%**

The final trip distribution shows that over 75 percent of the patron trips originate from the east and the majority of the remaining trips are evenly distributed between points north and west of the site. Based on this distribution pattern and the shared trip assumptions described above, project-generated traffic was assigned to the traffic volume network. (For the shared trips analysis, 30 percent of the peak hour trips to/from the Concord Hotel and Casino are assumed to be oriented to the Proposed Casino site.) Weekend peak hour trips generated by the proposed project trips are shown in Volume II, Appendix H. Traffic volume network calculations are shown in Volume II, Appendix F.

3.2.6 Future Build Traffic Volumes

On summer weekends, the project is expected to generate approximately 30,550 total trips on Fridays, 36,700 total trips on Saturdays, and 34,690 total trips per day on Sundays. The distribution of daily project traffic on State Route 17 (before the effects of shared trips) is shown in Table 11. Summer weekend daily project-related trips on State Route 17 should peak at 25,000 vpd. Daily project trips are generally seven to 12 percent lower during off-season weekend days.

Table 11 Future Project-related Traffic on State Route 17

	Two-Directional Traffic Volumes (vpd)[1]	
Day	**State Route 17 to the West**	**State Route 17 to the East**
Friday	4,950	20,850
Saturday	6,490	25,050
Sunday	6,140	23,700

Notes: [1] vpd = vehicles per day. Numbers shown include both Phases I and II and do not include the effects of shared trips with other casinos.

The project-generated traffic was added to the No-Build condition peak hour traffic volumes assuming the proposed improvements described above. The future Build peak hour traffic volume networks are shown on Figures 12, 13, and 14. A summary of the distribution of background and project-related traffic volumes is provided in Volume II, Appendix F.

A comparison of future No-Build and Build condition traffic volumes is presented in Table 12. Under 2018 Build conditions, weekend peak hour traffic volumes on County Highway 161 north of the project site are between 305 and 345 vph, or approximately 34 to 87 percent more than the peak hour traffic volumes under No-Build conditions. South of the project site, Build condition traffic volumes on County Highway 161 increase between 1,615 and 1,785 vph, or two to six times the peak hour traffic volumes without the proposed project.

East and west of the interchange, traffic volumes on Old Route 17 experience relatively minor increases in traffic volumes for Build conditions (between twenty and 25 vph).

Table 12 2018 Traffic Volume Summary – Build Conditions

	2018 Peak Hour Traffic Volumes								
	Friday Afternoon			Saturday Evening			Sunday Afternoon		
Location	No-Build	Build	Difference	No-Build	Build	Difference	No-Build	Build	Difference
County Highway 161:									
North of the Project Site	905	1210	305	385	720	335	695	1040	345
South of the Project Site (North of Interchange 107)	905	2520	1615	385	2160	1775	700	2485	1785
Old Route 17:									
West of Int. 107 EB Off-Ramp	180	200	20	65	85	20	105	125	20
East of County Highway 161	115	135	20	60	85	25	110	130	20
State Route 17 Interchange 107 Ramps:									
Eastbound Off	145	335	190	95	350	255	170	375	205
Eastbound On	220	855	635	105	665	560	310	1010	700
Westbound Off	505	1030	525	140	850	710	180	760	580
Westbound On	150	380	230	80	280	200	155	405	250
State Route 17:									
West of Interchange 107	6015	6370	355	4885	5280	395	5530	5935	405
East of Interchange 107	6445	7245	800	4955	6145	1190	5695	7030	1335

Project-related traffic volume increases on each of the State Route 17 Interchange 107 ramps range between 190 and 710 vph. These increases represent between two and six times the No-Build condition peak hour traffic volumes for individual ramps.

Comparison of estimated 2018 No-Build and Build traffic volumes on State Route 17 indicates that traffic volumes increase between five and nine percent (355 to 405 vph) west of Interchange 107 and between 12 and 24 percent (800 to 1335 vph) east of the Interchange.

3.2.7 Future Build Intersection Operating Conditions

Roadway operating levels of service for the future Build condition were calculated following procedures defined in the *2000 Highway Capacity Manual* (HCM). [17] A description of intersection level of service criteria for unsignalized intersections was provided in Section 2. 4 (see Table 2). Similar to unsignalized intersection analysis, the operating level of service for a

[17] Transportation Research Board, National Research Council, *Highway Capacity Manual*, Special Report 209, Washington, DC, 2000.

signalized intersection is based on travel delays. [18] The specific criteria applied per the *2000 Highway Capacity Manual* are summarized in Table 13.

Table 13 Signalized Intersection Level of Service Criteria

Level of Service	Average Delay per Vehicle (Seconds)
A	≤ 10. 0
B	>10 and ≤ 20. 0
C	>20 and ≤ 35. 0
D	>35 and ≤ 55. 0
E	>55 and ≤ 80. 0
F	>80. 0

Source: Transportation Research Board, *Highway Capacity Manual*, Special Report 209, National Research Council, Washington, D. C. , 2000.

While levels of service for both signalized and unsignalized intersections are based on delay, care should be used when comparing results for the two different intersection types. For unsignalized intersections, it is assumed that through movements on the major street have the right-of-way and are not delayed by side street traffic. Consequently, the total delay values for unsignalized intersections shown in Table 3 apply only to the minor street intersection approaches or to left turns from the major street into the minor street which must yield to oncoming traffic. The calculated average delay per vehicle for signalized intersections, however, applies to all vehicles entering the intersection and under control of the traffic signal. Volume-to-capacity ratios are also calculated for signalized intersections indicating the degree of saturation for critical movements in the intersection.

The future Build condition analysis results assume the proposed improvements described in Section 3. 2. 2 above. The analysis results are summarized for future Build conditions in Table 14. The analysis worksheets are provided in Volume II, Appendix B.

Table 14 Intersection Level of Service Summary – Future Build Conditions (including Proposed Improvements)

	Summer Peak Hour Conditions								
	Friday Afternoon (4:45-5:45 p.m.)			Saturday Evening (7:30-8:30 p.m.)			Sunday Afternoon (4:00-5:00 p.m.)		
Intersections Approach[1]	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**
Unsignalized:									
State Route 17 EB On- and Off-Ramps/Old Route 17									
LT from EB Old Route 17	3	0. 04	A	1	0. 00	A	4	0. 02	A
LR from SB State Route 17 Off-Ramp	14	0. 44	B	11	0. 38	B	12	0. 43	B

[18] Similar to unsignalized intersections, delays at signalized intersections are generally calculated as a function of traffic volume; peaking characteristic of traffic flow; percentage of heavy vehicles in the traffic stream; type of traffic control; number of travel lanes and lane use; intersection approach grades; and pedestrian activity; as well as signal timing, phasing, and progression.

	Summer Peak Hour Conditions								
	Friday Afternoon (4:45-5:45 p.m.)			Saturday Evening (7:30-8:30 p.m.)			Sunday Afternoon (4:00-5:00 p.m.)		
Intersections Approach[1]	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**
County Highway 161/Old Route 17									
L from EB Old Route 17	8	0. 21	A	8	0. 22	A	8	0. 21	A
LTR from WB Old Route 17	0	0. 00	A	0	0. 00	A	0	0. 00	A
LTR from NB Kroeger Road	15	0. 01	C	0	0. 00	A	18	0. 01	C
L from SB County Highway 161	20	0. 08	C	19	0. 05	C	19	0. 09	C
T from SB County Highway 161	19	0. 01	C	19	0. 00	C	18	0. 00	C
County Highway 161/State Route 17 WB On-Ramp									
L from NB County Highway 161	10	0. 05	A	9	0. 02	A	11	0. 04	B
County Highway 161/State Route 17 WB Off-Ramp									
L from WB State Route 17 Off-Ramp	21	0. 17	C	17	0. 03	C	23	0. 09	C
Signalized:									
County Highway 161/Foss Road Extension	1	0. 44	A	1	0. 40	A	1	0. 47	A
County Highway 161/Project Site Driveway	24	0. 89	C	8	0. 18	B	14	0. 78	B
County Highway 161/Old Route 17	10	0. 48	B	5	0. 34	A	9	0. 71	A

Notes: [1] L = Left Turn Movement; T = Through Movement; R = Right Turn Movement; EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound
[2] Average delay per vehicle (seconds)
[3] V/C = Volume-to-capacity ratio
[4] LOS = Level of service

The capacity analysis results indicate that the study area intersections will operate at LOS C or better with a maximum delay of 24 seconds under future Build conditions. Consequently, the proposed improvements will provide adequate capacity for the local roadway system under future conditions with the project. Impacts to the residents along Old County Road and Foss Road will be minimal because the Foss Road extension will be used for casino access only during emergencies.

The southbound approach of County Highway 161 at Old Route 17 was an area of concern when the DEIS was prepared due to new development proposed on Old Route 17 east of the interchange. There are no active development projects in this area now. Consequently, the current analysis indicates that this intersection approach merits less concern as it will only experience up to 20 seconds of delay (see Volume II, Appendix B) without signalization. The southbound left turn movement on this approach is 14 (approximately one car every four minutes) to 25 vehicles per hour (approximately one car every two and a half minutes) on

summer weekends. However, should future development increase volumes on this approach, Table 14 shows that with signalization, the intersection of County Highway 161/Old Route 17 operates at LOS B or better.

Again, due to the conservative assumptions used for this analysis, traffic operations will likely be better than indicated by the results. The future Build scenario traffic analyses are based on the following conservative assumptions:

1. Peak hour traffic volumes are based on peak summer weekend conditions. Off-season background traffic volumes in the area are substantially lower, and project-related traffic volumes will be seven to twelve percent lower on off-season weekends compared to summer weekends.

2. The analysis assumes that traffic due to background growth increases by up to 1.5 percent per year (1. 0 percent per year for background growth plus 0.5 percent induced growth for 2013 to 2018 resulting from the introduction of the Proposed Casino in the area). However, actual traffic volumes on Route 17 have not increase since 2001.

3. In addition to overall background traffic growth assumptions, traffic volumes from 24 other potential developments were also added to the Build scenario. (Combining an overall growth rate with traffic from individual projects can lead to double counting future trips.) Likewise, no shared trips are assumed among the various developments.

4. The traffic analysis assumes no pass-by or diverted trips, and therefore assumes that all project trips are *new* trips. However, it is likely that some percentage of the traffic traveling to and from the casino is already on Route 17, and would not represent *new* trips for Route 17. Thus, this assumption provides a conservative analysis.

5. The traffic analysis assumes traffic volumes generated by the Casino Project are approximately 60 percent higher than the projected volume from the two other previous casino proposals in the area. In addition, a relatively low percentage of project-generated traffic is assumed to be employee-related.

Because of the conservative nature of this analysis, traffic operations will likely be better than reported above.

3.2.8 Build Condition Ramp/Freeway Operations

Freeway interchange operations analysis may consider weaving areas and ramp junctions depending on the configuration of the interchange. Since Interchange 107 on State Route 17 has no weaving areas, only ramp-freeway junctions are considered here.

Merge Capacity Analysis Methodology

A ramp-freeway junction allows for high-speed merging or diverging with minimum disruption of the adjacent freeway traffic. The operating level of service at a freeway-ramp junction is related to the average density of traffic volumes in the influence area of the ramp. Models are

used to estimate average density of traffic volumes based on independent variables such as the traffic flows entering the influence area and the length of acceleration or deceleration lane. LOS A through E assume that vehicle demand flows do not exceed capacity. LOS F signifies that vehicle demand exceeds capacity and free flow no longer occurs. Table 15 summarizes the relationship between the maximum traffic volume density and the level of service at a ramp junction.

Table 15 Level of Service Criteria for Ramp-Freeway Junction Areas of Influence

Level of Service	Maximum Density (pc/mi/ln)[1]
A	≤ 10
B	> 10-20
C	> 20-28
D	> 28-35
E	> 35
F	[2]

Source: *Highway Capacity Manual*, Special Report 209. Transportation Research Board, 2000.
Notes: [1] pc/mi/ln = Passenger cars per mile per lane
[2] Demand flows exceed capacity

Build Condition Interchange Ramp Merge Operations

The Build condition merge level of service was calculated for the two merge sections at State Route 17 Interchange 107 based on the *2000 Highway Capacity Manual* methodologies described above. The results are presented in Table 16, and indicate that the eastbound and westbound on-ramps at State Route 17 operate at level of service C for the Friday peak hour condition. During the Saturday evening peak hour condition, the ramps both operate at LOS C. During the Sunday afternoon peak hour, the eastbound ramp operates at LOS D while the westbound ramp operates at LOS C. The merge analysis worksheets are provided in Volume II, Appendix B.

Table 16 Merge Analysis – St. Rte 17 Interchange 107 Ramps – Build Conditions

	2018 Build Conditions								
	Friday PM Peak Hour			Saturday PM Peak Hour			Sunday PM Peak Hour		
Location	LOS[1]	Speed[2]	Density[3]	LOS	Speed	Density	LOS	Speed	Density
State Route 17 at Exit 107 EB On-Ramp	C	53	25	C	54	23	D	50	32
State Route 17 at Exit 107 WB On-Ramp	C	53	27	C	54	21	C	54	20

Notes: [1] LOS=Level of Service
[2] Speed is in miles per hour.
[3] Density is in passenger cars/mile/lane.

Build Condition Route 17 Mainline Conditions

One component of the merge analysis is an evaluation of the freeway mainline capacity. As noted on the merge analysis worksheets, Route 17 which provides two through travel lanes in each direction, has a capacity of 4600 passenger cars per hour in each direction. With the assumption that approximately seventy-five percent of the patron traffic generated by the proposed casino project will use State Route 17 east of Interchange 107, this segment will experience the greater impact. The proposed project will add up to 405 vph to State Route 17 west of Interchange 107 and 1,335 vph east of the interchange during summer weekend peak hours. Including traffic from background growth, background developments, and the Casino Project, peak hour traffic volumes along State Route 17 could reach approximately 7,250 vph east of the interchange, and nearly 4,200 in the peak direction. Since State Route 17 can accommodate 4600 passenger cars per hour in one direction, and since most of the Route 17 traffic during the Sunday evening peak hour is passenger car traffic, Route 17 will operate below capacity under projected Build condition traffic flows.

3.2.9 Analysis Update

As noted above, the traffic forecasts for the 2018 No Build and Build conditions assume that the Concord Hotel Resort and Casino is built and fully occupied by 2018. However, as of December 2011, the original Master Plan for this project has been withdrawn and a new firm has been selected by the proposed developers to create a new Master Plan. The announcement of this event provided no anticipated dates for either the formulation of the new Master Plan or for submission of that new Plan to appropriate governmental agencies for review and approval. Accordingly, it is now questionable as to whether or not the Concord project will, as assumed in this FEIS for a conservative analysis, be developed by 2018. As such, new traffic forecasts were developed and new capacity analysis results were prepared assuming that the Concord project, as now appears reasonable, is not built by 2018.

Tables 17 and 18 presented below illustrate the expected changes in peak hour traffic volumes assuming that the Concord project is not included in the No Build and Build conditions, respectively. As shown, removal of this project from the No Build conditions removes more than 200 peak hour vehicles from County Highway 161 north of Route 17. It also removes more than 300 vehicles from the projected Route 17 mainline volumes. The distribution of Concord project trips is different under Build conditions relative to No Build conditions as it is assumed that there would be a sharing of trips between the Concord Casino and the Stockbridge-Munsee Casino. As such, removal of the Concord project from the Build condition reduces volumes on County Highway 161 by more than 300 peak hour trips. Similar reductions would be realized on Route 17 west of Interchange 107.

Table 17 2018 Traffic Volume Summary – No Build Conditions (with and without Concord project)

	2018 Peak Hour Traffic Volumes								
	Friday Afternoon			Saturday Evening			Sunday Afternoon		
Location	**FEIS**	**FEIS w/o Concord**	**Difference**	**FEIS**	**FEIS w/o Concord**	**Difference**	**FEIS**	**FEIS w/o Concord**	**Difference**
County Highway 161:									
North of the Project Site	905	666	-239	385	141	-244	695	473	-222
South of the Project Site (North of Interchange 107)	905	666	-239	385	141	-244	700	473	-227
State Route 17 Interchange 107 Ramps:									
Eastbound Off	145	93	-52	95	28	-67	170	115	-55
Eastbound On	220	156	-64	105	49	-56	310	253	-57
Westbound Off	505	452	-53	140	71	-69	180	126	-54
Westbound On	150	87	-63	80	24	-56	155	95	-60
State Route 17*:*									
West of Interchange 107	6015	5703	-312	4885	4564	-321	5530	5236	-294
East of Interchange 107	6445	6131	-314	4955	4636	-319	5695	5405	-290

Table 18 2018 Traffic Volume Summary – Build Conditions (with and without Concord project)

	2018 Peak Hour Traffic Volumes								
	Friday Afternoon			Saturday Evening			Sunday Afternoon		
Location	**FEIS**	**FEIS w/o Concord**	**Differenc e**	**FEIS**	**FEIS w/o Concord**	**Difference**	**FEIS**	**FEIS w/o Concord**	**Difference**
County Highway 161:									
North of the Project Site	1210	907	-303	720	405	-315	1040	738	-302
South of the Project Site (North of Interchange 107)	2520	2485	-35	2160	2135	-25	2485	2472	-13
State Route 17 Interchange 107 Ramps:									
Eastbound Off	335	257	-78	350	251	-99	375	296	-79
Eastbound On	855	811	-44	665	686	21	1010	871	-139
Westbound Off	1030	1087	57	850	930	80	760	825	65
Westbound On	380	287	-93	280	201	-79	405	315	-90
State Route 17*:*									
West of Interchange 107	6370	6068	-302	5280	4967	-313	5935	5637	-298
East of Interchange 107	7245	7119	-126	6145	6107	-38	7030	6819	-211

The impact of these volume changes on traffic operations (peak hour operating levels of service) were evaluated for two representative locations. These include the Proposed Site Drive/County Route 161 intersection and the Route 17 Eastbound On-Ramp merge with the Route 17 mainline. Only the Sunday evening peak hour conditions were analyzed as traffic operations during this time period are generally worse than projected for the other peak traffic hours studied. As shown in Table 19, elimination of the Concord project from the traffic forecasts improves the expected Sunday evening peak hour operating level of service at the site driveway. The intersection will operate at only 64 percent of capacity without the Concord project compared to 78 percent of capacity with the Concord project. Similarly, Route 17 operations improve slightly without the Concord project. Level of Service D operations are expected during the Sunday evening peak hour for the Eastbound On-ramp merge with the Route 17 mainline with or without the Concord project; however, without the Concord project the mainline operating speeds will be higher.

Table 19 Intersection Level of Service Summary-2018 Build Conditions (with and without Concord project)

	FEIS			FEIS w/o Concord		
Intersections Approach[1]	**Ave. Total Delay[1]**	**V/C[2]**	**LOS[3]**	**Ave. Total Delay**	**V/C**	**LOS**
County Highway 161/Project Site Driveway	14	0. 78	B	11	0. 64	B
	Speed[4]	**Density[5]**	**LOS**	**Speed**	**Density**	**LOS**
Route 17 Eastbound On-ramp/Mainline Merge	50	32	D	51	31	D

[1] Average Total Delay in Seconds per Vehicle
[2] Volume-to-capacity ratio for critical movements
[3] Level of Service
[4] Speed in miles per hour
[5] Density in passenger cars per lane per mile

3.2.10 Public Transportation Impacts

It is expected that public transportation to and from the region will increase in response to the opening of the proposed Casino Project. Future arrangements with local bus companies including the Shortline, Greyhound and other private bus companies to provide direct service to the Casino on a regular basis will be pursued. The Shortline Bus Company has already expressed interest in reviewing its current schedule and expanding its trip frequency to accommodate increased ridership.

Similar services are in place for the Mohegan Sun and Foxwoods resorts. As an example, Greyhound's Lucky Streak Casino service offers an additional 30 weekday/40 weekend runs to Atlantic City from New York's Port Authority for casino visitors in the New York/NJ metropolitan area. The advent of new resort style casinos in Sullivan County will contribute to increased bus ridership and offset the number of vehicles that would typically be on the local roadways and major highways. As bus service increase, private automobile trips will be reduced.

Incentives to encourage use of bus services could include frequent and convenient service with minimal stops, comfortable buses with restroom facilities, reduced ticket prices, and/or casino coupons for bus riders. Existing local limousine, charter and taxi services are expected to expand their services as well to provide connections to meet increased demand. These services could be used to transport patrons from the bus and rail stations directly to the Casino Project.

3.3 Future Cumulative Build Conditions

This section includes the analysis of cumulative traffic impacts. The "Cumulative Build" condition adds traffic to the Build condition volumes based on certain land use assumptions. These include the following:

- The proposed Concord Hotel and Casino included in the 2018 No Build and Build conditions is the first phase of much larger multi-phase project. The later phases encompass 1700 acres, 3000 housing units, 500 hotel rooms and more than one million square feet commercial floor space generating up to 5300 peak hour vehicle trips. The full build out of the **Concord Resort master plan** project was considered in the Cumulative Build scenario.

- **Rock Hill Phase II**. Traffic from Phases I of the Rock Hill project is also included in the 2018 No Build and Build conditions. However, the last phase of this project is not expected to be completed until 2025 to 2030. Accordingly, the approximately 1100 housing units that comprise Phase II and its related traffic is considered in the Cumulative Build scenario.

- **Potential Casinos #3**. When the DEIS was prepared there were two other active casino proposals in the site vicinity. The prior study included the Mohawk Mountain Resort and Casino as part of the background development projects. It was to be located north of Interchange 105 (west of the Stockbridge-Munsee casino site). The project consisted of a 165,000 square feet casino and 750-room hotel generating 1400 peak hour trips. Similarly, the DEIS assumed construction of the Cayuga Casino as part of the Cumulative Build scenario. It was to be located at the Monticello Raceway, (west of the Stockbridge-Munsee site); include a 160,000 square feet casino; and, generate 1600 peak hour trips. Neither of these projects is currently active. However, for the Cumulative Build scenario it is assumed that one casino (of the same size and with the same traffic impacts of the prior Mohawk Mountain Resort and Casino) is built west of the Stockbridge-Munsee casino site. This would constitute a third casino in the market.

As discussed above, (see Section 3. 2. 4), when multiple casinos are built in the same market, trip making among casinos is commonplace such that the second and third casinos into the market generate fewer new trips than the first casino. Consequently, when accounting for shared trips, it was assumed only 50 percent of the trips generated by the assumed Casino #3 were new trips. The shared trips were assumed to travel among the three casinos considered in the Cumulative Build scenario. This assumption has the effect of changing the trip distribution for the Stockbridge-Munsee casino shifting some of the traffic oriented to the east under Build conditions to the west under Cumulative Build conditions.

3.3.1 Cumulative Build Traffic Volumes

Cumulative Build condition traffic volumes are documented in Volume II, Appendix F, and shown graphically in Figures 15, 16, and 17. A comparison of future Build condition traffic volumes to future Cumulative Build traffic volumes is presented in Table 17. The Concord Resort master plan project adds significantly to volumes on County Route 161 past the project site. The other development projects considered add to Route 17 mainline volumes at Interchange 107. Compared to Build conditions, Cumulative Build condition traffic volumes on State Route 17 increase by 28 to 32 percent (1705 to 1760 vph) west of Interchange 107 and by 13 to 15 percent (910 to 1030 vph) east of Interchange 107. The impact of these added volumes are considered in the ramp merge analysis provided below. County Highway 161 will experience increases between 365 and 460 vph (approximately 16 to 51 percent).

Table 17 2018 Traffic Volume Summary – Cumulative Build Conditions

	2018 Peak Hour Traffic Volumes								
	Friday Afternoon			Saturday Evening			Sunday Afternoon		
Location	Build	Cumu-lative Build	Difference	Build	Cumu-lative Build	Difference	Build	Cumu-lative Build	Difference
County Highway 161:									
North of the Project Site	*1210*	1655	445	*720*	1085	365	*1040*	1430	390
South of the Project Site (North of Interchange 107)	2520	2980	460	2160	2540	380	2485	2895	410
Old Route 17:									
West of Int. 107 EB Off-Ramp	*200*	195	-5	*85*	80	-5	*125*	120	-5
East of County Highway 161	*135*	130	-5	*85*	75	-10	*130*	125	-5
State Route 17 Interchange 107 Ramps:									
Eastbound Off-Ramp	335	630	295	350	670	320	375	655	280
Eastbound On-Ramp	855	760	-95	665	590	-75	1010	900	-110
Westbound Off-Ramp	1030	1000	-30	850	725	-125	760	680	-80
Westbound On-Ramp	380	680	300	280	555	275	405	730	325
State Route 17:									
West of Interchange 107	6370	8130	1760	5280	6985	1705	5935	7665	1730
East of Interchange 107	7245	8275	1030	6145	7055	910	7030	7965	935

3.3.2 Cumulative Build Intersection Operating Conditions

Anticipated future intersection operating levels of service were calculated based on the projected 2018 Cumulative Build condition traffic flows and analysis procedures outlined in the *2000 Highway Capacity Manual*. [19] The Cumulative Build condition analysis results assume the proposed improvements described in Section 3. 2. 2 above. The analysis results are summarized in Table 18, and the analysis worksheets are provided in Volume II, Appendix B.

[19] Transportation Research Board, *Highway Capacity Manual*, Special Report 209, National Research Council, Washington, DC, 2000.

Table 18 Intersection Level of Service Summary – Future Cumulative Build Conditions (including Proposed Improvements)

	Summer Peak Hour Conditions								
	Friday Afternoon (4:45-5:45 p. m.)			Saturday Evening (7:30-8:30 p. m.)			Sunday Afternoon (4:00-5:00 p. m.)		
Intersections Approach[1]	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**	**Avg. Total Delay[2]**	**V/C[3]**	**LOS[4]**
Unsignalized:									
State Route 17 EB On- and Off-Ramps/Old Route 17									
LT from EB Old Route 17	3	0. 04	A	1	0. 00	A	4	0. 02	A
LR from SB State Route 17 Off-Ramp	29	0. 83	D	18	0. 72	C	20	0. 74	C
County Highway 161/State Route 17 WB On-Ramp									
L from NB County Highway 161	10	0. 04	A	9	0. 01	A	10	0. 04	B
County Highway 161/State Route 17 WB Off-Ramp									
L from WB State Route 17 Off-Ramp	39	0. 29	E	28	0. 05	D	39	0. 16	E
Signalized:									
County Highway 161/Foss Road Extension	1	0. 52	A	1	0. 46	A	1	0. 54	A
County Highway 161/Project Site Driveway	49	1. 01	D	18	0. 78	B	25	0. 81	C
County Highway 161/Old Route 17[5]	5	0. 59	A	5	0. 65	A	6	0. 64	A

Notes:
[1] L = Left Turn Movement; T = Through Movement; R = Right Turn Movement; EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound
[2] Average delay per vehicle (seconds)
[3] V/C = Volume-to-capacity ratio
[4] LOS = Level of service
[5] The analysis assumes future signalization at the intersection of County Highway 161/Old Route 17. Before signalization (geometric improvements only, including exclusive southbound and eastbound left turn lanes), the southbound County Highway 161 approach to this intersection operates at LOS F during summer weekend peak hours.

Table 18 shows that the two signalized site driveways (main driveway and emergency access via the proposed Foss Road extension) operate at LOS D or better under future 2018 Cumulative Build conditions. Likewise, the County Highway 161/Old Route 17 intersection assuming signalization operates at LOS A or better during all peak hours. Two of the three unsignalized intersections in the study area also operate at LOS D or better. The third location is the County Route 161/State Route 17 Westbound Off-ramp intersection where the State Route 17 WB Off-Ramp left turns are expected to operate at LOS E during the Friday afternoon and Sunday afternoon peak hours. The left turn volumes are relatively minor, five to 45 peak hour vehicles turning left onto southbound County Highway 161 and the turn movement operates well below capacity. (Calculated volume-to-capacity ratios for the Friday and Sunday peak hours are 0. 29

and 0. 16, respectively.) The delay for this movement is projected to reach a maximum of 39 seconds during the summer weekend peak hours. The maximum threshold for LOS D operations is 35 seconds.

Table 19 summarizes the traffic operations analysis for 2018 No-Build, Build, and Cumulative Build scenarios. As shown in Table 19, study area intersections operate at LOS B or better under future No-Build conditions and LOS C or better under future Build conditions. Under Cumulative Build conditions operations decline to LOS D or better with one location operating at LOS E. As discussed above, the volumes experiencing LOS E operations are minimal and the movement in question operates well below capacity. Overall, the proposed traffic mitigation project for the Casino Project provides adequate capacity on the local roadway network to accommodate Cumulative Build traffic volumes.

3.3.3 Cumulative Build Condition Interchange Ramp Merge Operations

The Cumulative Build condition merge level of service was calculated for the two merge sections at State Route 17 Interchange 107 based on the *2000 Highway Capacity Manual* methodologies described earlier and the results are presented in Table 20. The State Route 17 westbound on-ramp merge operates at LOS D or better for all three peak time periods under Cumulative Build conditions. (LOS C operations were calculated for Build conditions.) The eastbound on-ramp also operates at LOS D or better except during the Sunday evening peak hour when summer weekend visitors to Sullivan County are headed back to the New York City metropolitan area. LOS F operations are expected during this time period. (This merge situation operates at LOS D under Build conditions.) Additionally, the merge analysis indicates that the LOS F operations result from Route 17 eastbound mainline volumes, 4684 vph, exceeding the theoretical mainline capacity of only 4600 passenger cars per hour. The merge analysis worksheets are provided in Volume II, Appendix B.

In addition to the conservative assumptions applied to the Build Year analysis, several additional conservative assumptions are applicable to the cumulative impact assessment:

1. The Cumulative Build analysis assumes a third casino, although there is no active proposal. If the analysis is conducted without the traffic associated with this assumed casino, the LOS F for the eastbound on-ramp to Route 17 during the Sunday evening peak hour where the merge occurs with the mainline improves to LOS E.

2. The analysis does not incorporate any traffic mitigation measures that might be implemented by the other projects.

3. The analysis does not account for any future widening of State Route 17 by NYSDOT which would add a through travel lane in each direction and greatly increase the roadway capacity. (Improvements currently being designed and constructed by NYSDOT allow for the addition of an additional through lane in each direction.)

Similar to the cumulative intersection analysis, as a consequence of the conservative nature of this analysis, traffic operations will likely be better than shown in Table 6-4. In addition, as noted earlier, these conditions would not occur by 2018, and might not occur until a decade or more

later. Accordingly, implementation of some or all of NYSDOT's planned improvements to State Route 17 in the vicinity of Interchange 107 as part of the proposal to bring the roadway to interstate standards would help mitigate these potential impacts.

3.3.4 Sensitivity Analysis

An analysis was completed to determine impact of the assumed "third casino" included in the Cumulative Build condition on the Sunday evening, eastbound Route 17 merge operations. Given that there is no proposal for a third casino in Sullivan County, traffic from a third casino was removed from the Cumulative Build scenario and assumed shared trips to/from the Proposed Casino and the assumed Concord Resort Casino were reassigned accordingly. The new or "Alternative Cumulative Build" scenario volumes were evaluated for the Sunday evening merge condition. Based on this analysis it was found that the Sunday peak hour State Route 17 Interchange 107 eastbound merge operations improve from LOS F to LOS E by eliminating consideration of a third casino in the Cumulative Build condition. The level of service change relates to a reduction in the traffic density on Route 17 from 36 to 35 passenger cars per mile per lane and in increase in calculated operating speed from 47 to 48 mph. More importantly, the Route 17 eastbound mainline volume drops to 4588 vph or just below the mainline capacity.

Table 19 2018 Intersection Level of Service Summary

	Intersections Level of Service								
	2018 No-Build Conditions			2018 Build Conditions with Improvements			2018 Cumulative Build with Improvements		
Intersections Approach[1]	**Fri. Peak Hour[2]**	**Sat. Peak Hour[3]**	**Sun. Peak Hour[4]**	**Fri. Peak Hour[2]**	**Sat. Peak Hour[3]**	**Sun. Peak Hour[4]**	**Fri. Peak Hour[2]**	**Sat. Peak Hour[3]**	**Sun. Peak Hour[4]**
Unsignalized:									
State Route 17 EB On- and Off-Ramps/Old Route 17[5]									
LT from EB Old Route 17	A	A	A	A	A	A	A	A	A
LR from SB State Route 17 Off-Ramp	B	A	A	B	B	B	D	C	C
County Highway 161/Old Route 17[6]							A	A	A
LTR from EB Old Route 17	A	A	A	A	A	A			
LTR from WB Old Route 17	A	A	A	A	A	A			
LTR from NB Kroeger Road	B	A	B	C	A	C			
LTR from SB County Highway 161	A	A	A	C	C	C			
County Highway 161/State Route 17 WB On-Ramp									
LT from NB County Highway 161	A	A	A	A	A	B	A	A	B
County Highway 161/State Route 17 WB Off-Ramp									
L from WB State Route 17 Off-Ramp	B	A	B	C	C	C	E	D	E
Signalized:									
County Highway 161/Foss Road Extension[7]	N/A[8]	N/A	N/A	A	A	A	A	A	A
County Highway 161/Project Site Driveway	N/A[8]	N/A	N/A	C	B	B	D	B	C

Notes:
[1] L = Left Turn Movement; T = Through Movement; R = Right Turn Movement; EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound
[2] Friday afternoon peak hour is from 4:15 to 5:15 PM.
[3] Saturday evening peak hour is from 8:00 to 9:00 PM.
[4] Sunday afternoon peak hour is from 4:15 to 5:15 PM.
[5] Note that this intersection is two separate intersections under future No-Build conditions.
[6] Analysis of County Highway 101/Old Route 17 assumes signalization under Future Cumulative Build conditions.
[7] Under No-Build conditions, this intersection refers to County Highway 161 at Old County Highway (unsignalized).
[8] N/A = Not Applicable

Table 20 Merge Analysis – St. Rte 17 Interchange 107 Ramps – Cumulative Build Conditions

	2018 Cumulative Build Conditions								
	Friday PM Peak Hour			Saturday PM Peak Hour			Sunday PM Peak Hour		
Location	**LOS[1]**	**Speed[2]**	**Density[3]**	**LOS[1]**	**Speed[2]**	**Density[3]**	**LOS[1]**	**Speed[2]**	**Density[3]**
State Route 17 at Exit 107 EB On-Ramp	D	52	29	C	53	28	F	47	36
State Route 17 at Exit 107 WB On-Ramp	D	50	34	C	53	28	C	53	27

Notes: [1] LOS=Level of Service
[2] Speed is in miles per hour.
[3] Density is in passenger cars/mile/lane.

3.4 Regional Impacts

Table 21 summarizes projected peak month average daily traffic volumes at locations along Route 17 in Sullivan and Orange Counties for existing and projected future No-Build, Build and Cumulative Build conditions. This analysis assumes that the traffic impacts of the proposed project and all background development projects diminish as distance from each site increases. Unlike the peak hour traffic analyses, this analysis also assumes that there are shared trips among the various land use proposals. (Calculations are shown in Volume II Appendix J. Table 21 indicates that average daily traffic volumes on State Route 17 are generally higher in Orange County compared to Sullivan County, particularly west of I-87. In Sullivan County, east of County Highway 161, project-related daily traffic volumes result in a 2,100 vpd (four percent) increase to volumes on State Route 17. In Orange County just east of the Sullivan County border, traffic volume increases by approximately 9,700 vpd (17 percent). At the highest volume location in Orange County (between the beginning of Route 6 and 17M overlap to Routes 207 and 17A), the project results in a 8,300 vpd (eight percent) increase in traffic volumes on State Route 17, for a total daily volume of 111,600 vpd. East of I-87, traffic volume increases due to the proposed project are estimated to be nearly 7,000 vpd (approximately 36 percent).

Under Cumulative Build conditions, daily traffic volumes on State Route 17 are elevated an additional five to eight percent throughout the central portion of Orange County (from Route 211 to I-87). Under Cumulative Build conditions, the highest traffic volumes in Orange County are estimated to reach 117,500 vpd.

Table 21 Peak Month Average Daily Traffic Volumes on State Route 17

Route 17 Highway Segment	Existing (2010)	2018 No-Build	2018 Build	2018 Cumulative Build
Sullivan County:				
Delaware County Line to Route 206 and CR 124	8,300	11,200	11,900	15,900
Route 206 and CR 124 to Route 17B Monticello Exit 104	18,300	22,600	23,300	29,300
Route 17B Monticello Exit 104 to Route 42 Exit 105	31,000	38,200	39,600	49,500
Route 42 Exit 105 to Old Route 17 CR 173	27,000	35,600	37,000	48,900
Old Route 17 CR 173 to CR 161 Bridgeville Exit 107	43,100	51,700	53,800	65,700
CR 161 Bridgeville Exit 107 to EB CR 173	32,100	40,700	51,120	63,000
EB CR 173 to Orange County Line	34,400	41,600	51,300	61,200
Orange County:				
Sullivan County Line to Route 211	48,600	55,700	65,500	75,400
Route 211 to Start Routes 6 & 17M Overlap	81,800	87,600	96,600	104,500
Start Routes 6 & 17M Overlap to Routes 207 & 17A	99,000	103,300	111,600	117,500
Routes 207 & 17A to End Route 6 Overlap	91,900	96,200	104,500	110,500
End Route 6 Overlap to Route 32	72,900	77,200	85,600	91,500
Route 32 to ACC I-87 Harriman	59,600	62,500	69,400	73,400
ACC I-87 Harriman to Routes 210 & 17A	16,400	19,300	26,300	30,200
Routes 210 & 17A to Rockland County Line	27,700	30,600	37,600	41,500

All improvements for Route 17, including capacity, safety, and geometric improvements, fall under the jurisdiction of the New York State Department of Transportation (NYSDOT). Independent of this project, NYSDOT is currently undergoing the *Route 17 (Future Interchange 86) Interchange and Geometrics Study*[20] to address existing deficiencies, interchange spacing, and interchange geometric features necessary to meet Interstate standards on State Route 17. The process of improving State Route 17 to the future I-86 involves improving or consolidating selected interchanges based upon Interstate spacing, geometrics, and service requirements and guidelines.

The NYSDOT study covers the 106-mile stretch of State Route 17 from Exit 84 in Delaware County, through Sullivan County, and up to and including Exit 131 in Orange County (at Interstate 87). The primary study area for the NYSDOT study consists of all State Route 17, the mainline and ramps, and all intersecting and parallel facilities. The secondary environmental study area covers a broad area surrounding State Route 17, with consideration given to include population centers, National Highway System (NHS) facilities, and community facilities, where appropriate. The secondary traffic study area includes parallel and secondary roads and intersections that are directly affected by operations of State Route 17, and is defined as a one mile width centered about State Route 17, with additional width to cover areas containing roadways and intersections of particular importance.

The NYSDOT study looks at area/corridor level planning needs, which are general needs that apply to the overall State Route 17 corridor, including an assessment of needs regarding interchange spacing, access, access control and overall operations. The study also looks at

[20] New York State Department of Transportation, April 2001.

project level planning needs, which are specific needs that have been identified for each interchange in the study corridor. Lists of the State Route 17 interchanges located at and east of the proposed casino project and included in NYSDOT's State Route 17 Interchange study are provided in Table 22 (Sullivan County) and Table 23 (Orange County) below. Tables 22 and 23 also summarize specific improvements that are currently being considered by NYSDOT as part of their study.

Table 22 Route 17 Interchange Spacing and Geometrics Study Improvements – Sullivan County

Interchange Number	Location	Interchange Improvements
107	Bridgeville/South Fallsburg (CR 161)	▪ Realign WB on and off-ramps for improved turning radii. ▪ Reconstruct bridge to provide 16'16" clearance ▪ Extend EB o-ramp acceleration lane 100 ft. ▪ Reconstruct EB off-ramp with 230 ft. radius ▪ Reconstruct slip ramp to EB on-ramp
108	Bridgeville	▪ Close existing EB on and off-ramps (close interchange)
109	Rock Hill/Woodridge (Rock Hill Drive and Town Highway 54)	▪ Close existing EB and WB ramps ▪ Construct new WB ramps ▪ Construct new EB ramps and revise EB access to SR 17/I-86 (several alignment options) ▪ Acquire at least one property (north side of SR 17/I-86) ▪ Possibly realign Lake Louise Marie Road
110	Lake Louise Marie/Wanaksink Lake (CR 172)	▪ Tree and brush clearing at WB ramps to improve sight distance ▪ Reconstruct EB on-ramp with 230 ft. radius
111	Wolf Lake Road	▪ Close EB on and off-ramps (close interchange)
112	Masten Lake/Yankee Lake (CR 166A)	▪ Extend WB acceleration lane 200 ft. ▪ Reconstruct WB on-ramp with 230 ft. radius to new grade ▪ Reconstruct bridge to provide 16'6" clearance ▪ Reconstruct EB off-ramp to new grade ▪ Construct new EB on-ramp ▪ Realign int. of CR 166A/CR 166 to accommodate major movement ▪ Construct cul-de-sac turnaround on CR 166 east of CR 166A ▪ Remove existing EB on-ramp and dead-end CR 166
113	Wurtsboro/Ellenville (US Route 209)	▪ Reconstruct EB and WB on and off-ramps ▪ Revised access to Wurtsboro ▪ Construct Park and Ride lot on NE corner of interchange ▪ Construct parking access for K&H Canal Trail on SE corner of interchange ▪ Reconstruct bridge on shifted alignment with 16'16" clearance ▪ Install traffic signal on U. S. Route 209 at EB on/off ramps
114	Wurtsboro/Highview (CR 171)	▪ Remove WB off-ramp (close interchange), OR ▪ Construct new WB on-ramp with 230 ft. radius and 455 ft. acceleration lane ▪ Construct new bridge with 16'6" clearance ▪ Reconstruct WB off-ramp with 230 ft. radius ▪ Extend WB off-ramp deceleration lane 300 ft. ▪ New trumpet interchange (south side) with 300 ft. radius

Interchange Number	Location	Interchange Improvements
		▪ Construct new EB off-ramp and 370 ft. deceleration lane ▪ Construct new EB on-ramp with 1000 ft. acceleration lane, OR ▪ Remove existing WB off-ramp ▪ New fully directional diamond interchange with bridge over SR 17/I-86 ▪ Construct new WB on-ramp with 455 ft. acceleration lane ▪ Construct new WB off-ramp with 580 ft. deceleration lane ▪ Construct new EB off-ramp and 370 ft. deceleration lane ▪ Construct new EB on-ramp with 1000 ft acceleration lane
115	Burlingham Road (CR 61/North Road)	▪ Construct new WB on-ramp ▪ Reconstruct WB off-ramp ▪ Realign Roosa Gap Road at Burlingham Road ▪ Reconstruct bridge to provide 16’6” clearance ▪ Construct new EB off-ramp ▪ Remove gravel driveway at North Road/EB on-ramp
116	State Route 17K/Montgomery Bloomingburg	▪ Extend WB on-ramp acceleration lane 290 ft. ▪ Extend EB on-ramp acceleration lane 180 ft.
117	Tarbell Road	▪ None
118	Fair Oaks (CR 76 and Brown Road)	▪ Extend EB off-ramp deceleration lane 305 ft. ▪ Extend WB on-ramp acceleration lane 940 ft. ▪ Improve channelization at int. of Brown Road/WB ramps ▪ Reconstruct bridge to provide 16’6” clearance
118A	Fair Oaks (CR 76/NYS Route 17M)	▪ Remove existing EB off-ramp (close interchange)
119	Pine Bush (NYS Route 302)	▪ Remove existing EB and WB on and off-ramps ▪ Construct new EB and WB on and off-ramps with 230 ft. radii ▪ Eliminate parking area in the SW corner of interchange, *OR* ▪ Remove existing EB and WB on-ramps ▪ Construct new EB and WB on-ramps ▪ Two commercial properties to be acquired in SE corner of interchange ▪ Extend WB off-ramp deceleration lane 110 ft.

Table 23 Route 17 Interchange Spacing and Geometrics Study Improvements – Orange County

Interchange Number	Location	Interchange Improvements
120	NYS 211/Middletown/Montgomery	▪ Extend WB on-ramp acceleration lane 710 ft. ▪ Extend EB off-ramp deceleration ramp 240 ft. ▪ Extend WB off-ramp deceleration lane 190 ft.
121	I-84/Newburgh/Port Jervis	▪ None
122	CR 67/East Main St. /Crystal Run Road	▪ Entire interchange being updated as part of separate NYSDOT project – PIN 8006. 48
122A	Fletcher Street/Goshen (Cheechunk Road)	▪ Reconstruct WB ramps to new grade ▪ Reconstruct bridge to provide 16'6" clearance ▪ Reconstruct connector roadway on N side to new grade ▪ Reconstruct EB ramps to new grade
123	NYS Route 17M and US Route 6/ Middletown/Port Jervis	▪ Realign West Main Street/Matthews Street intersection
124	NYS Routes 17A and 207/Florida/Goshen	▪ Jack bridge to provide 16'6" clearance
125	NYS Route 17M East/South Street (NYS Route 17M)	▪ Reconstruct bridge to provide 16'6" clearance ▪ Reconstruct bike/pedestrian trail (N side) ▪ Remove existing EB and WB ramps ▪ Reconstruct EB and WB ramps with 230 ft. radius ▪ Realign Route 17M (N side) and Harriman Drive (S side), ***OR*** ▪ Reconstruct bridge to provide 16'6" clearance ▪ Reconstruct bike/pedestrian trail (N side) ▪ Remove existing EB and WB ramps ▪ Construct new EB and WB on and off-ramps ▪ Realign Route 17M (N side) and Harriman Drive (S side) ▪ New traffic signal at intersection of connector road with WB ramps
126	NYS Route 94/Chester/Florida (NYS Route 17M)	▪ None (Entire interchange being upgraded as part of a separate NYSDOT project – PIN 8006. 56)
127	Greycourt Road/Sugarloaf/Warwick (NYS Route 17M)	▪ Remove existing EB on-ramp and WB off-ramp ▪ Construct new EB and WB ramps ▪ Construct new bridge over SR 17/I-86, ***OR*** ▪ Remove existing EB on-ramp and WB off-ramp ▪ Construct new EB and WB ramps with 230 ft. radius (750 ft for WB off-ramp) ▪ Construct new bridge over SR 17/I-86
128	CR 51/Oxford Depot (CR 51/ Craigville Road/Oxford Road)	▪ Close WB off-ramp (close interchange)
129	Museum Village Road	▪ Realign Old Mansion Road west of Museum Village Road ▪ Remove existing EB on-ramp and WB off-ramp ▪ Construct new EB and WB on-ramps ▪ Reconstruct WB off-ramp ▪ Lower mainline (SR 17/I-86) to provide 16'6" clearance ▪ Reconstruct Park and Ride lot entrance (SE corner) ▪ Realign Orange-Rockland Road (SE corner)
130	NYS Route 208/Monroe/Washingtonville	▪ Lower mainline (SR 17/I-86) to provide 16'6" clearance ▪ Eliminate break in access along acceleration lane on NYS Route

Interchange Number	Location	Interchange Improvements
		208 S of the EB ramps
130A	US Route 6/Bear Mountain	▪ Lower mainline (SR 17/I-86) to provide 16'6" clearance

Interchange Number	Location	Interchange Improvements
131	Newburgh/Suffern (NYS Routes 17 and 32)	▪ Lower mainline (SR 17/I-86) to provide 16'6" clearance ▪ Close existing ramp to Woodbury Commons ▪ Reconstruct WB off-ramp with 230 ft. min. radius ▪ Construct additional R turn lane on WB off-ramp and provide dual R turn into Woodbury Commons, ***OR*** ▪ Lower mainline (SR 17/I-86) to provide 16'6" clearance ▪ Construct new frontage road w/access to Woodbury Commons and SR 32 ▪ Construct new bridge at entrance to Woodbury Commons ▪ Reconstruct WB off-ramp with 230 ft. min. radius ▪ New traffic signal at intersection of Woodbury Commons second drive and new frontage road

Source: New York State Department of Transportation, *Transportation Project Report, Route 17 (Future Interchange 86) Interchange and Geometrics Study, Delaware, Sullivan and Orange Counties*, April 2001.

Most of the improvements listed in Tables 22 and 23 focus on interchange spacing (closing specific interchanges), geometric and safety improvements (such as lengthening ramp acceleration and deceleration lanes), and bridge clearance (raising the bridge or lowering the mainline). Sketches of these improvements are provided in Volume II, Appendix I. NYSDOT is aware of the proposed casino project in this area, and future plans for State Route 17 interchanges will take into consideration these projects, other induced growth, and associated roadway capacity needs. NYSDOT acknowledges the potential need for an additional lane in each direction along Route 17 in the future with or without the proposed casino project in Sullivan County. All improvements proposed in NYSDOT's State Route 17 interchange study are designed to accommodate such a roadway widening in the future.

NYSDOT has stated that they may be able to prioritize interchange construction schedules for casino interchanges. This is dependent on regional issues, needs, and priorities of the state and surrounding communities.

Project-related traffic volumes on other county roads and local streets in surrounding counties are anticipated to disperse to less significant levels. Project traffic was distributed to distant regional roadways based on existing traffic patterns and population density of surrounding areas. Table 24 below highlights the high volume location of several additional highways/county routes in Orange County. Projected traffic volumes on additional regional roadways in Orange County are provided in Volume II, Appendix J.

Table 24 Peak Month Average Daily Traffic Volumes on Other Regional Roadways – Orange County

Highway/Roadway Segment	Existing (2010)	2018 No-Build	2018 Build	2018 Cumulative Build
I-87 between Rockland County Line and I-16 Routes 6 & 7	135,100	137,900	144,200	148,200
I-84 between start of Rt. 52 overlap to Dutchess County Line	101,900	104,800	106,900	110,800
Rt. 6 between start of Rt. 987 Overlap to Rockland County Line	18,800	20,200	22,900	24,800
Rt. 17K between CR 23 Rockcut Road to start of Rt. 32 overlap	21,500	21,800	21,900	22,300
Rt. 209 between end of Rt. 6 overlap to CR 80 Neversink Drive	8,200	8,800	9,100	9,850

For the roadways shown in Table 24, project-related traffic volume increases in Orange County are highest on Route 6. Between the beginning of the Route 987 overlap and the Rockland County line, the daily traffic volumes on Route 6 are estimated to increase by 2,600 vpd (13 percent) due to the proposed project. At the other four locations shown in Table 24, project-related traffic volume increases are five percent or less. As noted, casino related traffic impacts decrease with distance.

4.0 Construction Impacts

Construction of the proposed project is expected to last approximately twelve to eighteen months. The proposed development will be constructed on the Gildick property in a location that is removed from existing developments/residences. Therefore, the on-site construction impacts at the site will be limited to noise and dust impacts for the limited number of homes that are immediately adjacent to the project site. These impacts will be minimized by use of standard construction practices such as wash down areas to remove dried mud from wheels, wetting of areas that are producing dust, and maintaining equipment mufflers. Construction traffic in and out of the project site driveway could also result in construction noise and dust impacts to residences and summer cottages located south of the site.

During construction, the project site will generate truck and construction worker traffic. Most vehicles generated by the proposed project construction (trucks and construction workers) will originate from south of the site (State Route 17 and County Highway 161). Thus, principle off-site construction impacts associated with the proposed project will occur on State Route 17 Interchange 107 and the southern portion of Old County Highway 161.

5.0 Findings/Conclusions

This study has evaluated existing traffic conditions and future traffic conditions with and without the proposed project. In response to comments in the DEIS, the list of background projects for the 2018 No Build condition was updated to include current new development projects and an updated existing conditions analysis. The new analysis did not change the findings of the DEIS, which are highlighted below. In general, 2011 Build intersection operating conditions from the DEIS are similar to the 2018 Build intersection operating conditions presented in the new FEIS. However, impacts are slightly greater in 2018 Cumulative Build than they were in the 2011

Cumulative Build presented in the DEIS. This is primarily due the inclusion of the Rock Hill and Concord Resort master plan in the Cumulative Build scenario for the FEIS. These two large projects were not considered in the DEIS. Comparisons between key traffic statistics from the DEIS and FEIS are included in Appendix K.

Existing Conditions

- During the summer, daily traffic volumes on County Highway 161 north of Interchange 107 range between 2,300 and 6,000 vehicles per day (vpd). During peak summer months, Friday, Saturday, and Sunday peak hour traffic volumes on County Highway 161 are between 125 and 610 vph. The highest volumes occur on Fridays.

- Critical movements at study area intersections operate well under capacity at LOS A or B during Friday and weekend summertime peak hours.

- Accident rates are higher than state average rates at several ramp locations on State Route 17 Interchange 107 at County Highway 161.

Future Conditions

- Future 2018 No-Build conditions include the addition of traffic generated by background growth and development within the area. Under 2018 No-Build conditions, study intersections operate at LOS A or B.

- The NYSDOT is planning improvements for State Route 17 Interchange 107 as part of their *Route 17 (Future Interchange 86) Interchange and Geometrics Study*. [21] The proponent is undergoing coordination meetings with NYSDOT for these improvements.

- The peak hours for the proposed project are expected to occur roughly between 4:00 and 6:00 PM on Friday and Sunday afternoons, and between 7:00 and 9:00 PM on Saturday evenings.

- Conservative estimates for peak summer weekend conditions indicate that the proposed project (Phases I and II) will generate up to 36,700 daily and 2,300 peak hour trips.

- Most of the project traffic (87 percent) is expected to travel to and from the site via State Route 17. A majority (75 percent) will be oriented to the east to/from New York City and the surrounding metropolitan area.

- The proposed project will attract approximately 100 buses per day, with 20 to 30 bus trips during the weekend peak hours. Use of available transit services is anticipated to increase with this casino and other planned projects in this vicinity.

- Under future 2018 Build conditions with proposed roadway, intersection, and interchange improvements, all study intersections and ramp-highway junctions at State Route 17 Interchange 107 operate at LOS C or better.

[21] New York Department of Transportation, April 2001.

- Sight distance measurements at the location of the proposed site driveway on County Highway 161 indicate that adequate sight distance is available at this location.

- Additional development considered under the Cumulative Build scenario will increase travel demands on the roadway system. The Route 17 EB on ramp is expected to operate at LOS F in the Friday and Sunday peak hours. The Route 17 WB on ramp is expected to operate at LOS F in the Friday peak hour.

A number of access improvements have been proposed to accommodate traffic associated with the proposed project. Each improvement has been recommended to provide sufficient capacity and maximize safety for vehicles at specific locations within the study area. The following improvements are proposed:

Site Access Improvements

- Widen County Highway 161 to provide two lanes in each direction and a landscaped median between Interchange 107 and the proposed project site driveway.

- Provide emergency access via an extension of Foss Road that connects County Highway 161 south of the existing intersection of County Highway 161 with Old County Road.
- Close off and cul-de-sac the north end of Old County Highway at County Highway 161. Provide neighborhood access to County Highway 161 via the proposed Foss Road extension.

State Route 17 Interchange 107 Improvements

The proponent is currently coordinating with the NYSDOT for the implementation of the following improvements:

- Reconstruct County Highway 161 bridge over State Route 17 to meet interstate highway standards and provide additional capacity.

- Reconstruct Interchange 107 eastbound off-ramp to meet interstate highway standards.

- Remove, relocate, and improve Interchange 107 eastbound on-ramp connection.

- Widen Old Route 17 to accommodate a second westbound lane to carry traffic from southbound County Highway 161 to the Route 17 Interchange 107 eastbound ramps.

- Realign Interchange 107 westbound ramps to improve turning radii and provide additional stacking.

- Extend acceleration lane for eastbound State Route 17 at Interchange 107.

- Provide exclusive northbound left-turn lane at County Highway 161 intersection with Interchange 107 westbound on-ramp.

Intersection Improvements

- Provide signalized intersection at the project site driveway entrance with exclusive, channelized double turn lanes into and out of the site.

- Signalize and provide a median break on County Highway 161 for the intersection of the proposed Foss Road extension at County Highway 161.

- Provide conduit/wiring for future stop light, exclusive southbound and eastbound left-turn lanes, and a channelized southbound right turn lane at County Highway 161/Old Route 17.

In addition to the proposed access improvements listed above, regulatory speed limit signs are proposed for County Highway 161 to the north of the site to maximize safety at local driveways and intersections.

County Highway 161 Roadway Alignment Options

In addition, several alternatives are available for the alignment of County Highway 161 at Old County Highway. The road could maintain its existing alignment, or one of the two following alternative alignments could be considered to improve roadway alignment conditions at the intersection of County Highway 161 and Old Route 17:

- Alternative 1: Realign south end of County Highway 161 approximately 300 feet east of its existing location.

- Alternative 2: Realign south end of County Highway 161 approximately 450 feet east of its existing location.

In summary, the improvements included as part of this project have been proposed to accommodate future traffic volumes with the proposed project. The improvements will provide safe, efficient, and optimal access to and from the site for Build conditions.

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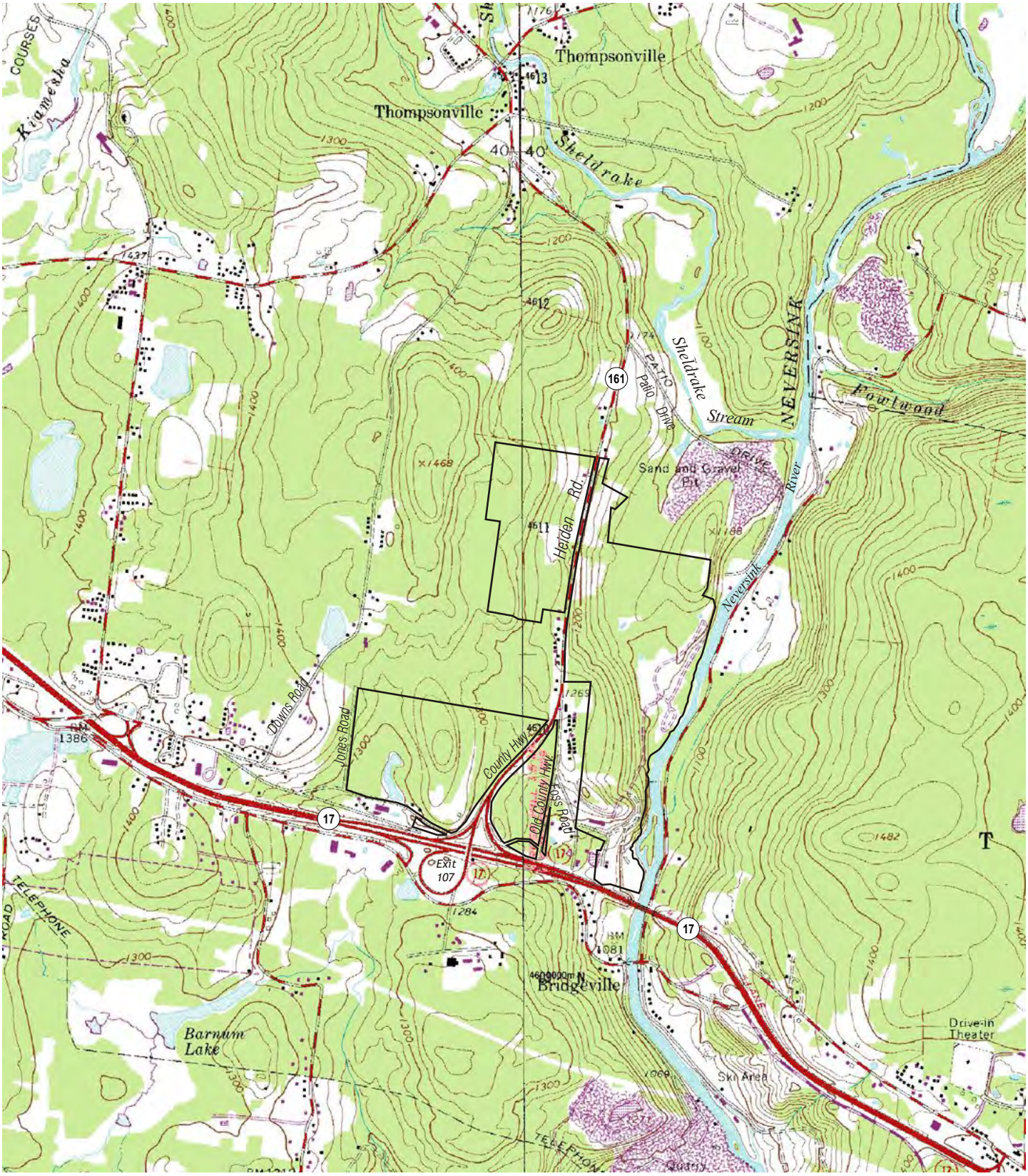


Date: April 3, 2001

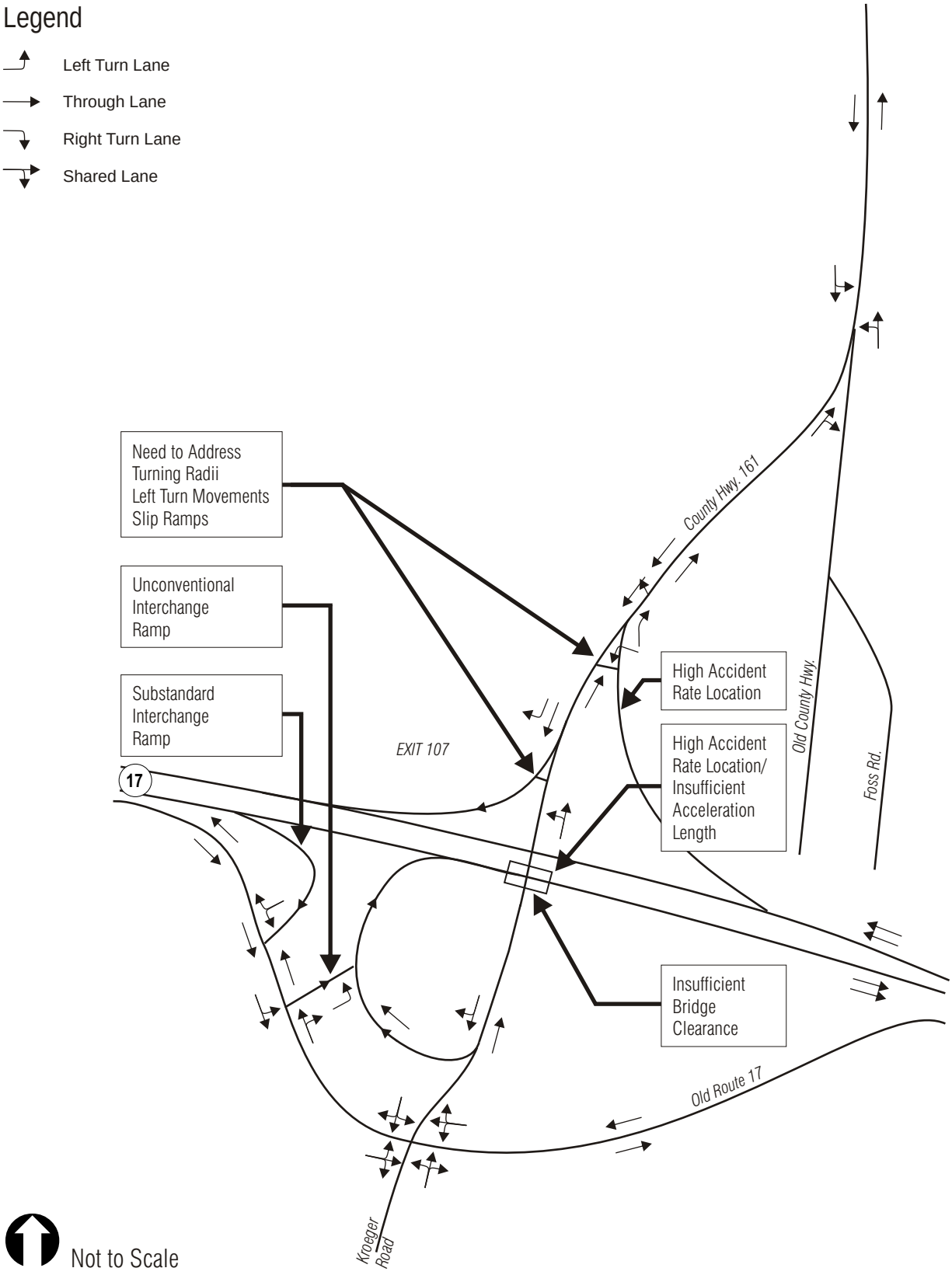
Source: USGS Topographic Maps
Woodbridge, NY
Map Printed, 1966; Map Revised, 1988
Monticello, NY
Map Printed, 1966; Map Revised, 1988

NOTE: Contour Interval = 20 feet

Stockbridge-Munsee Casino
Thompson, New York

Locus Map

Figure 1

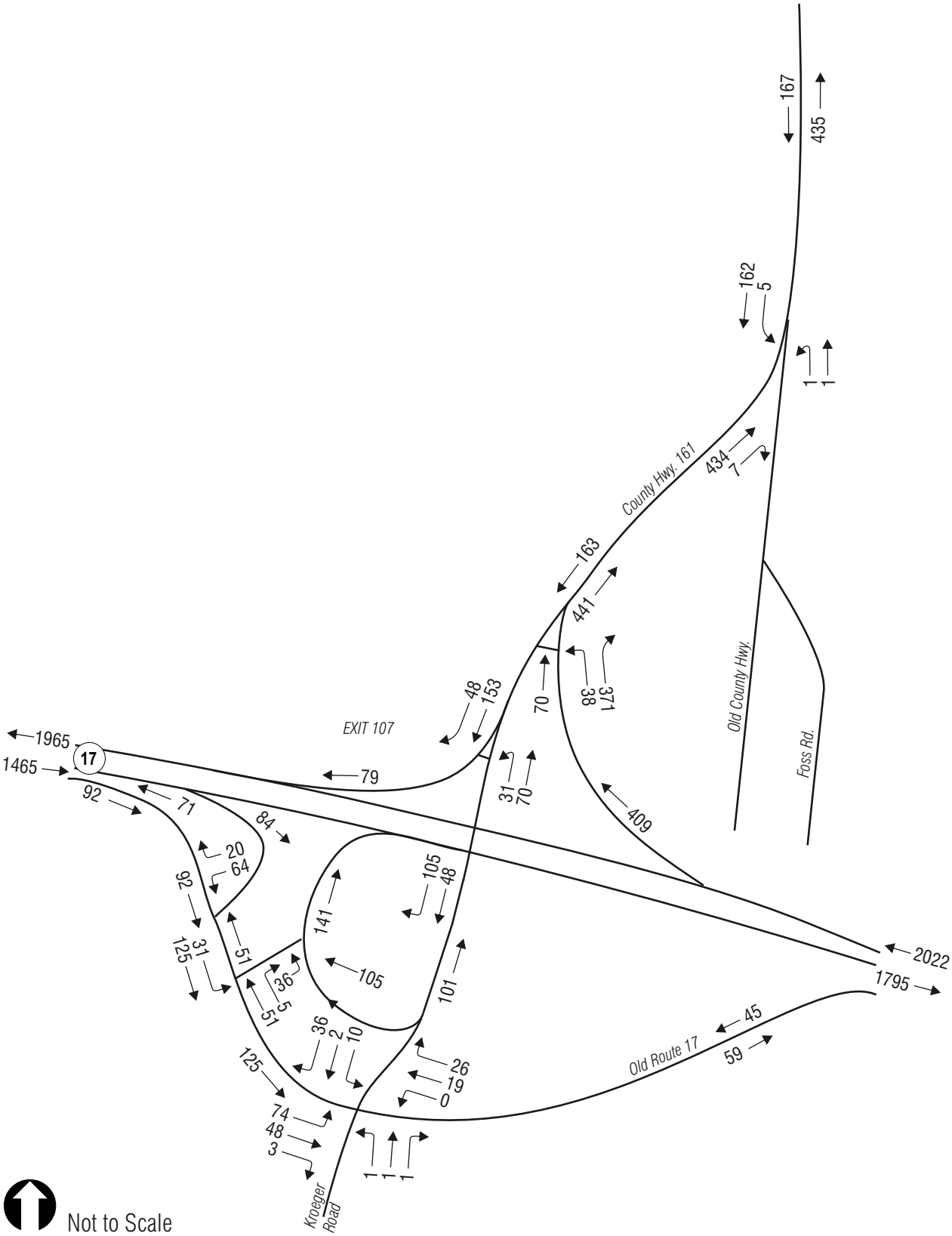


Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Lane Geometries -
Existing Conditions

Figure 2



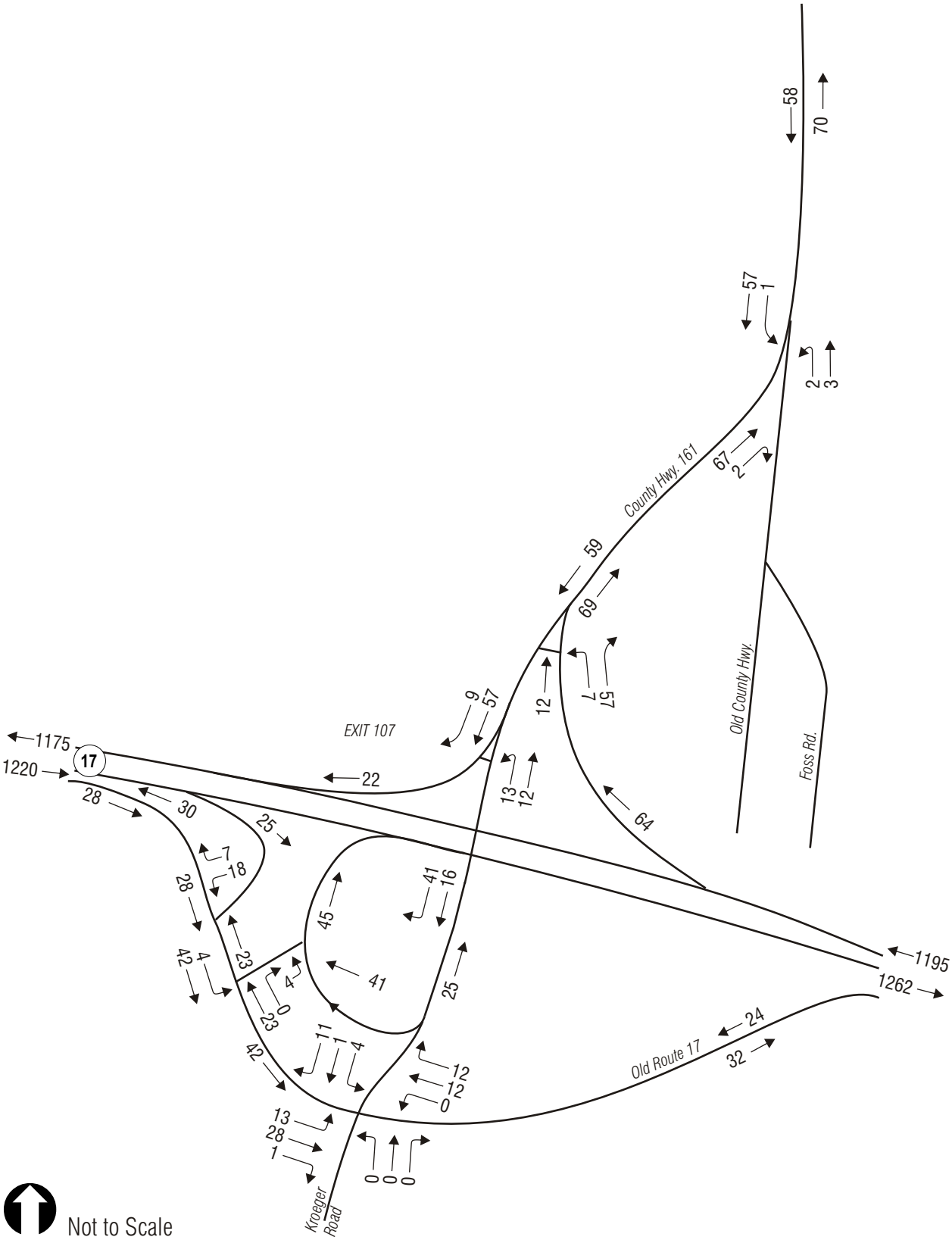
Not to Scale

Stockbridge-Munsee Casino
Thompson, New York

2010 Existing Traffic Volumes

Friday Afternoon Peak Hour

Figure 3



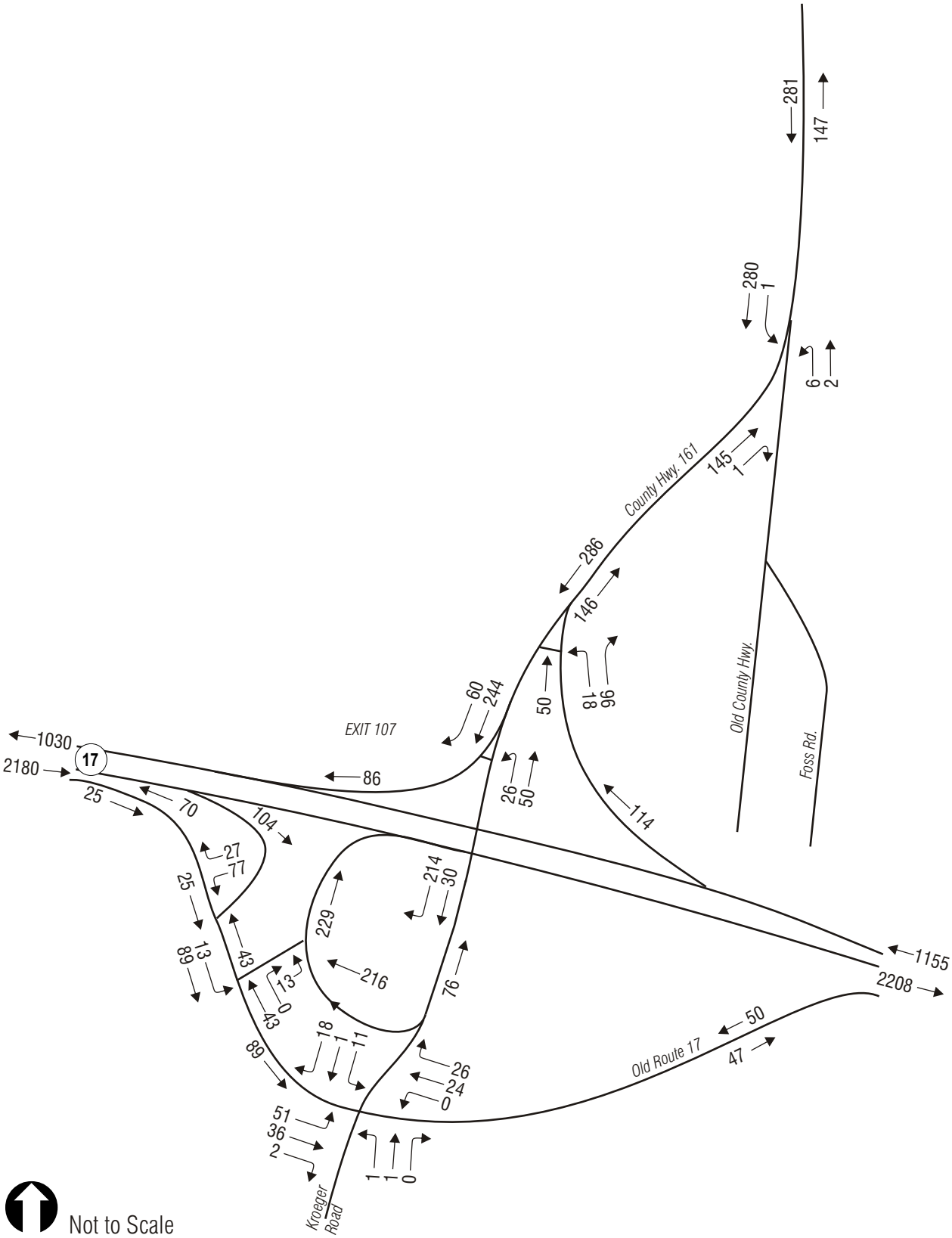
Not to Scale

Stockbridge-Munsee Casino
Thompson, New York

2010 Existing Traffic Volumes

Saturday Evening Peak Hour

Figure 4



Not to Scale

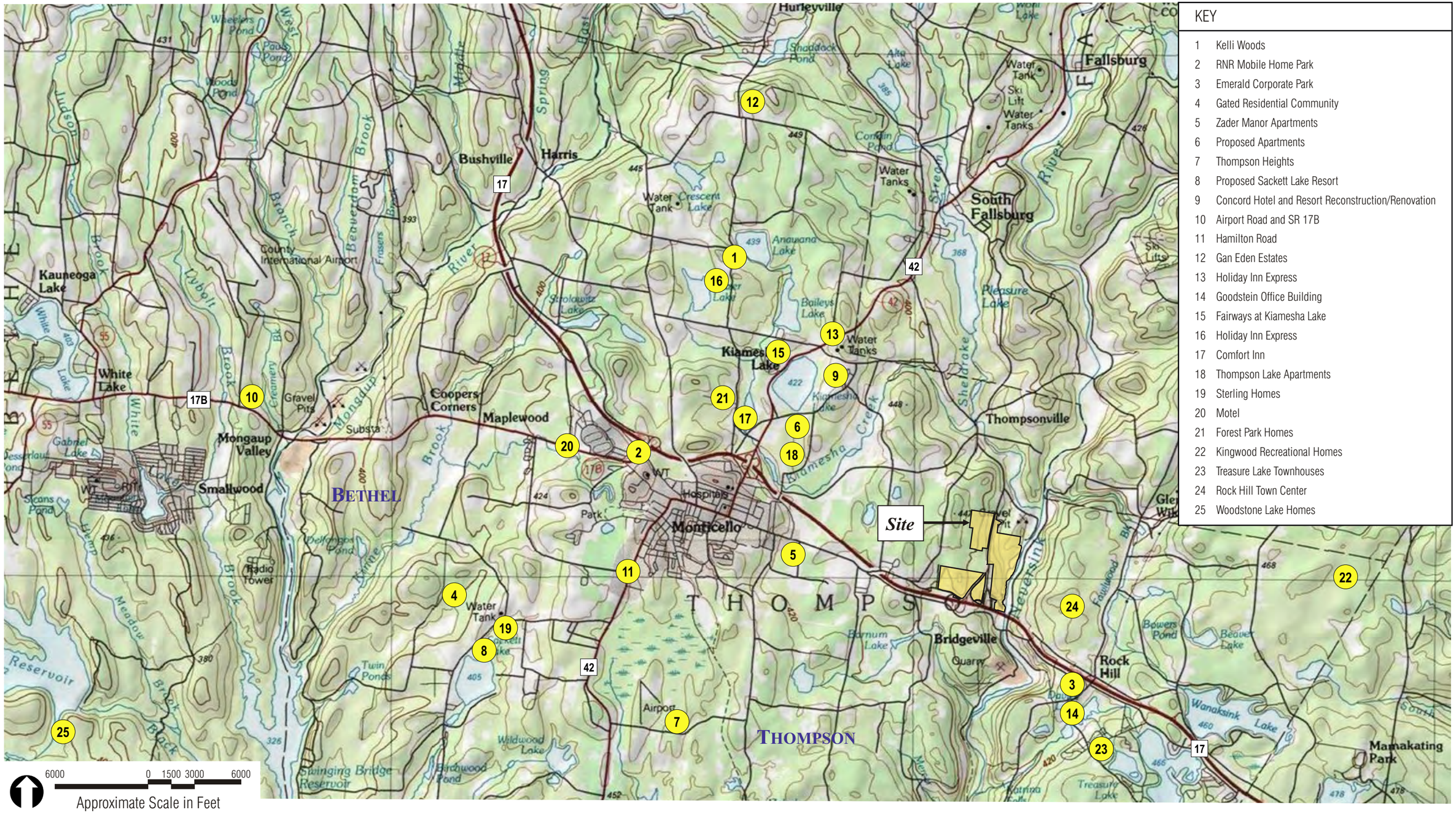
Stockbridge-Munsee Casino
Thompson, New York

2010 Existing Traffic Volumes

Sunday Afternoon Peak Hour

Figure 5

Fig 6-1_7419_proposed_offsite_developments_6000.cdr



KEY

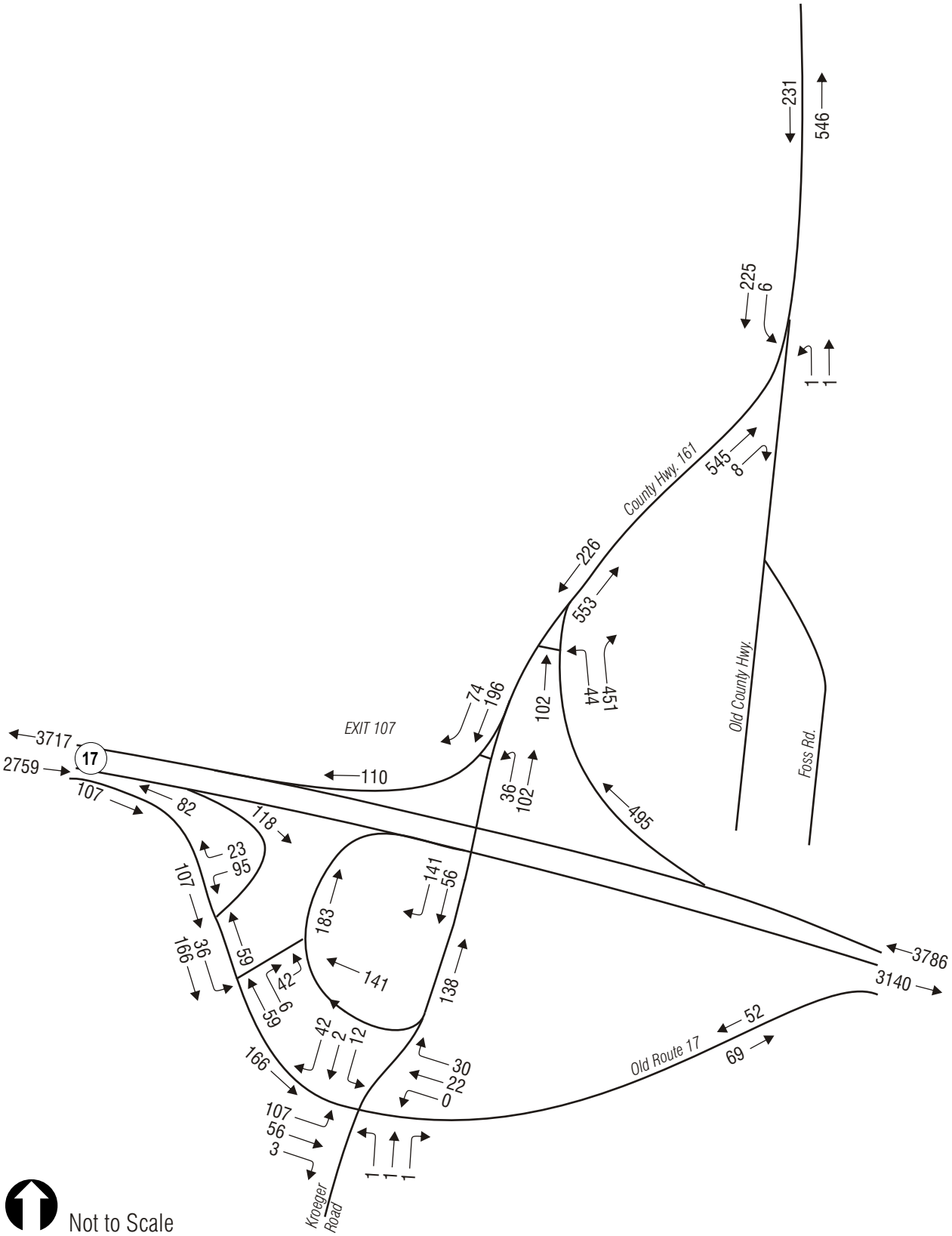
1 Kelli Woods
2 RNR Mobile Home Park
3 Emerald Corporate Park
4 Gated Residential Community
5 Zader Manor Apartments
6 Proposed Apartments
7 Thompson Heights
8 Proposed Sackett Lake Resort
9 Concord Hotel and Resort Reconstruction/Renovation
10 Airport Road and SR 17B
11 Hamilton Road
12 Gan Eden Estates
13 Holiday Inn Express
14 Goodstein Office Building
15 Fairways at Kiamesha Lake
16 Holiday Inn Express
17 Comfort Inn
18 Thompson Lake Apartments
19 Sterling Homes
20 Motel
21 Forest Park Homes
22 Kingwood Recreational Homes
23 Treasure Lake Townhouses
24 Rock Hill Town Center
25 Woodstone Lake Homes

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Regional Project Locations

Figure 6



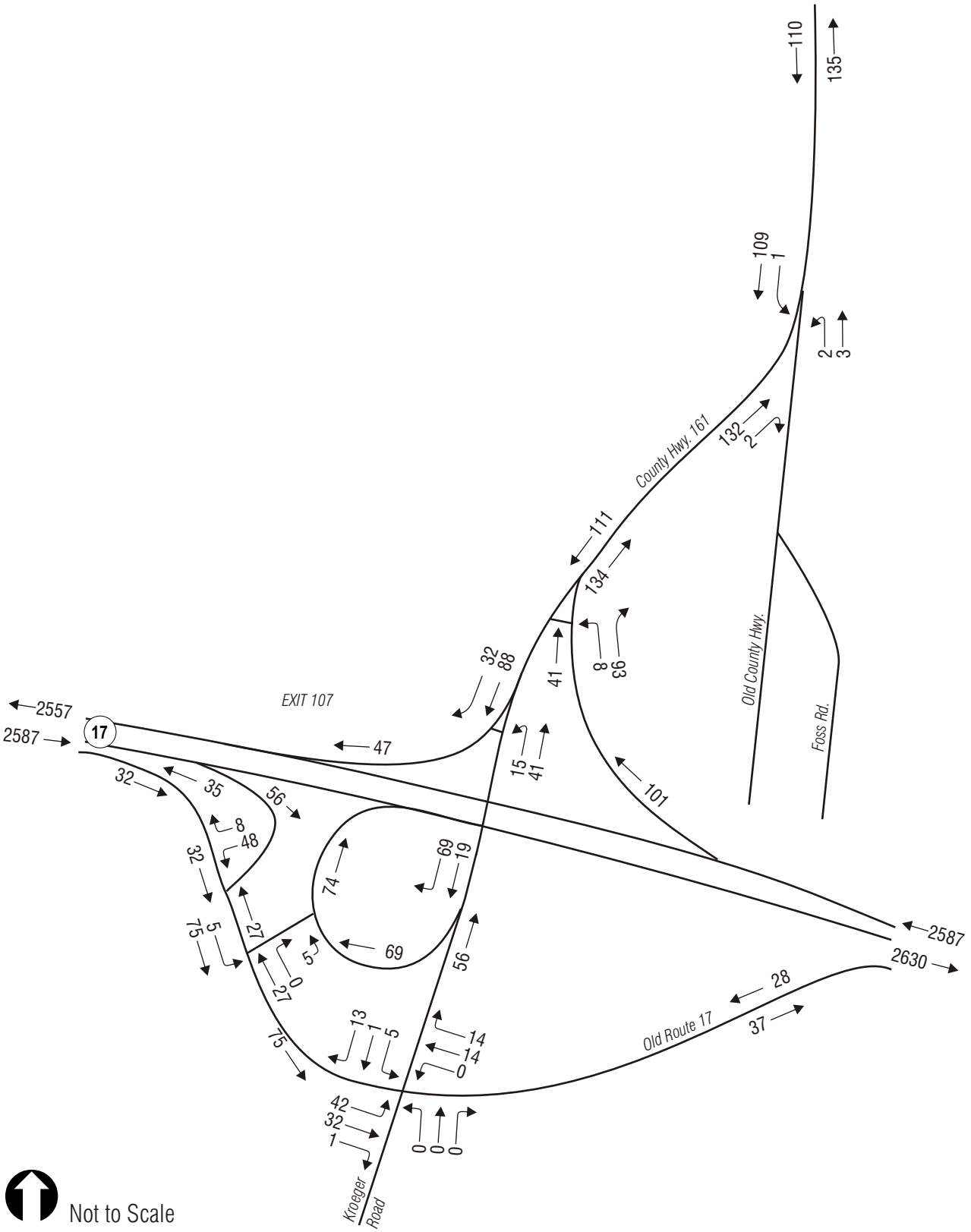
Not to Scale

Stockbridge-Munsee Casino
Thompson, New York

2018 No-Build Traffic Volumes

Friday Afternoon Peak Hour

Figure 7



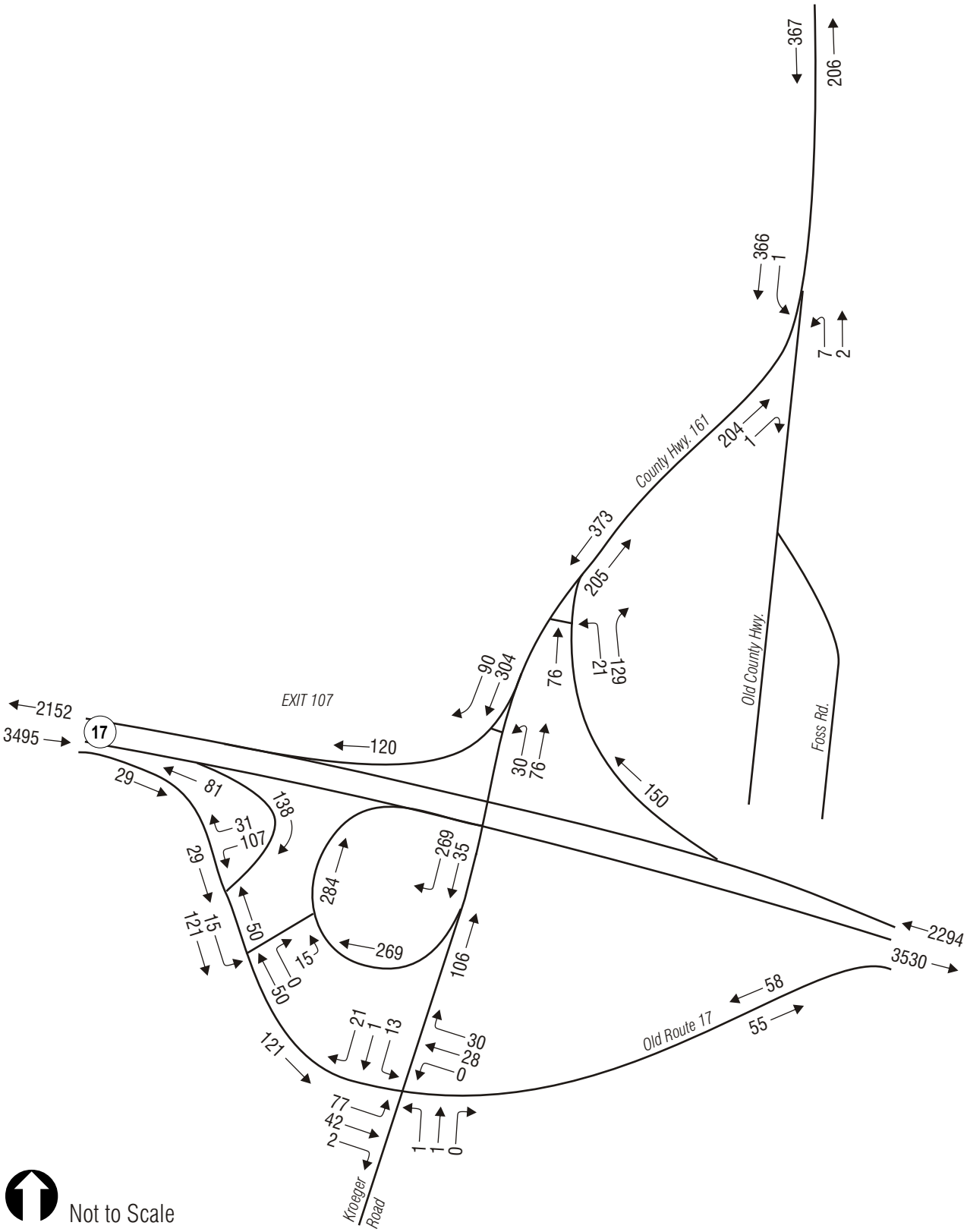
Not to Scale

Stockbridge-Munsee Casino
Thompson, New York

2018 No-Build Traffic Volumes

Saturday Evening Peak Hour

Figure 8



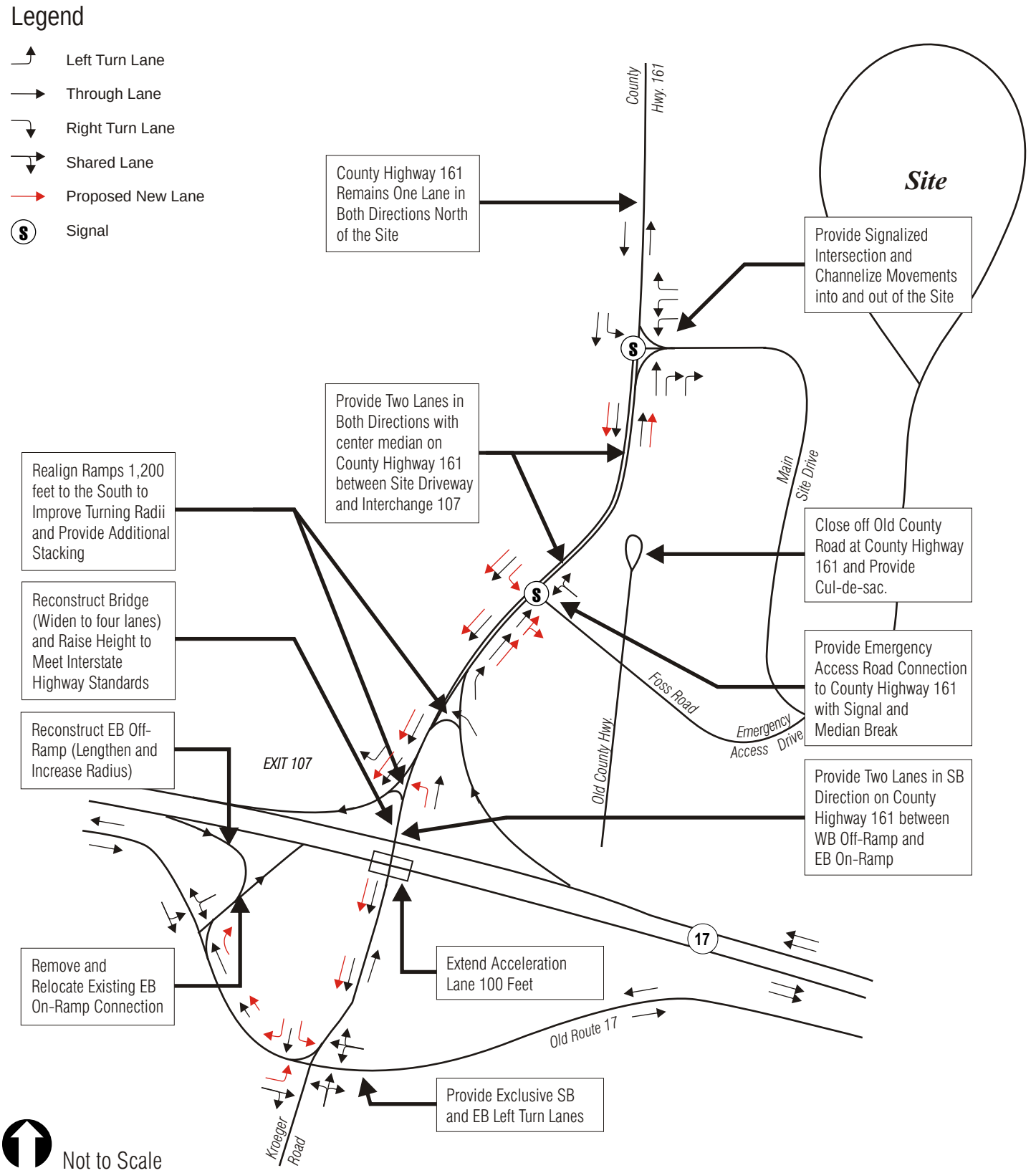
Not to Scale

Stockbridge-Munsee Casino
Thompson, New York

2018 No-Build Traffic Volumes

Sunday Afternoon Peak Hour

Figure 9

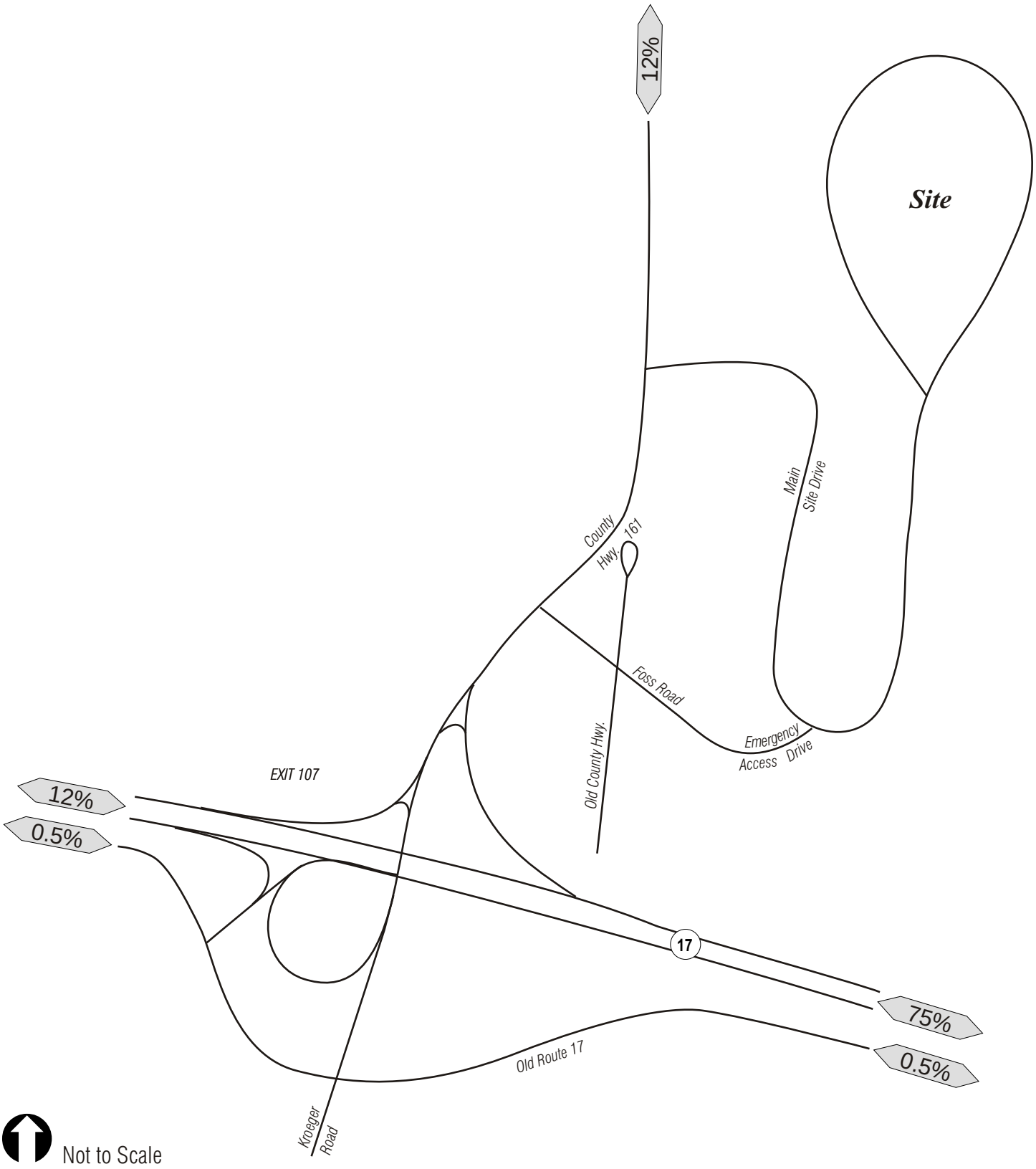


Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Future Build Lane Conditions
With Proposed Improvements

Figure 10

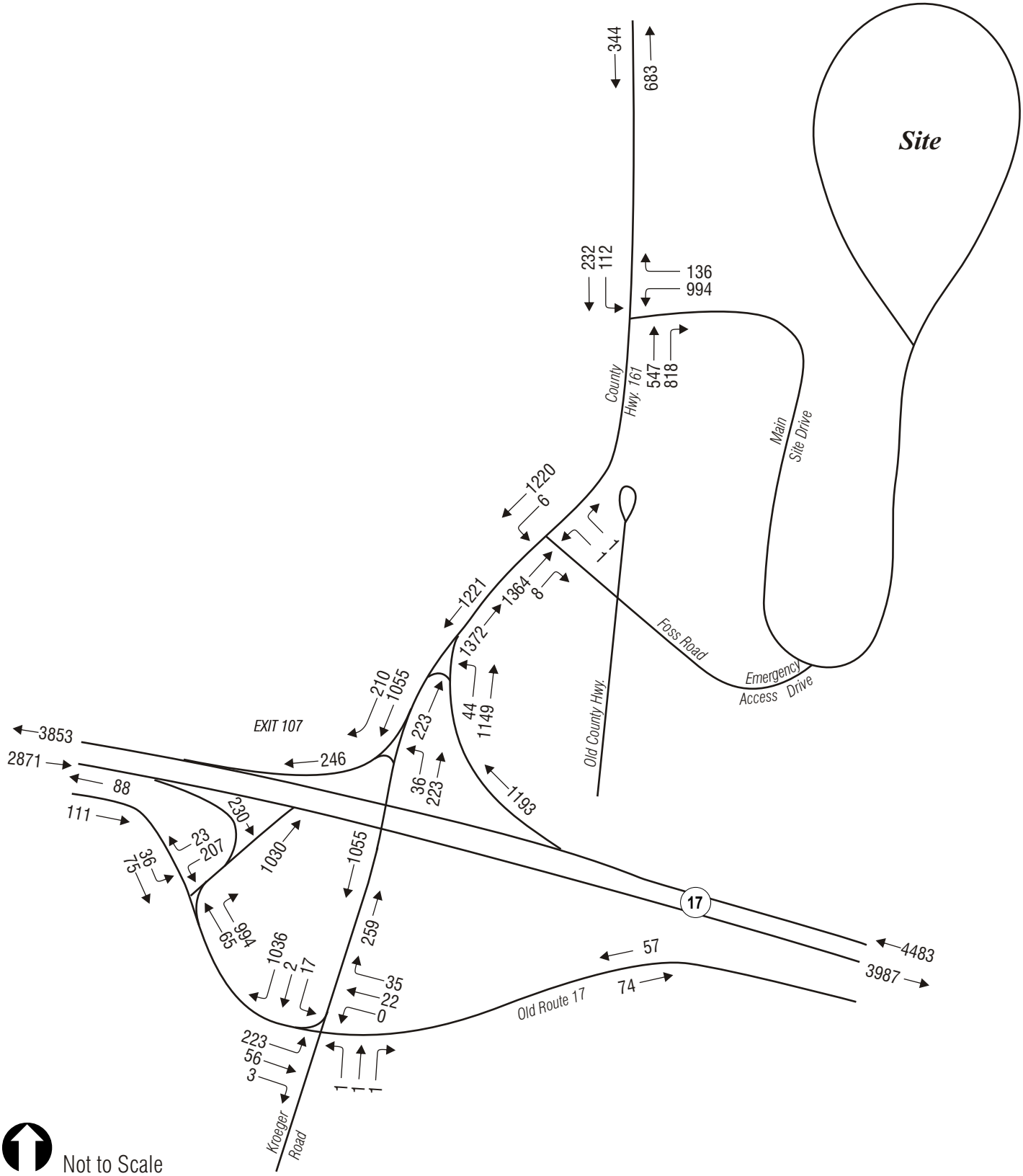


Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Future Trip Distribution

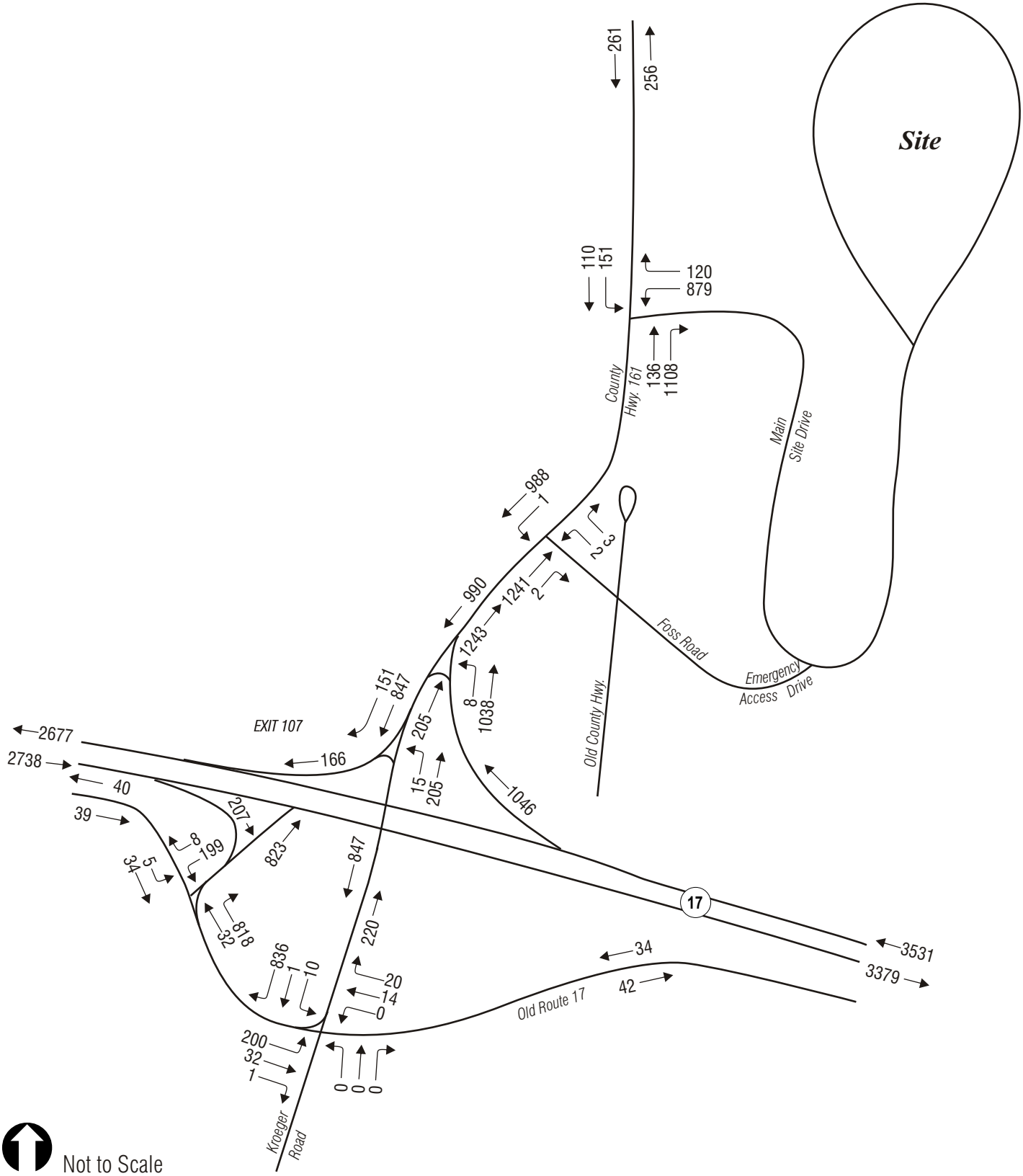
Figure 11



Stockbridge-Munsee Casino
Thompson, New York

2018 Build
Traffic Volumes
Friday Afternoon Peak Hour

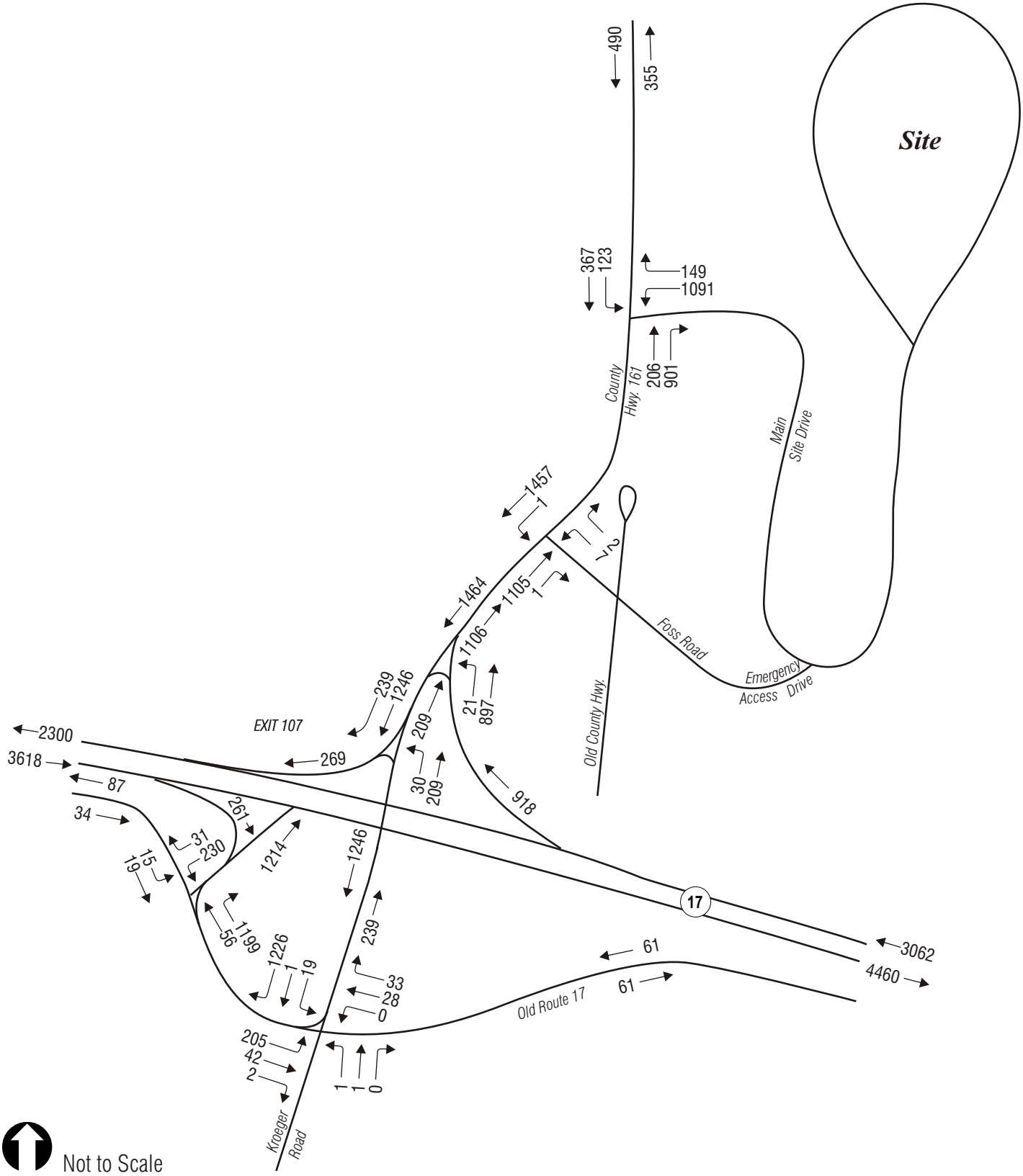
Figure 12



Stockbridge-Munsee Casino
Thompson, New York

2018 Build
Traffic Volumes
Saturday Evening Peak Hour

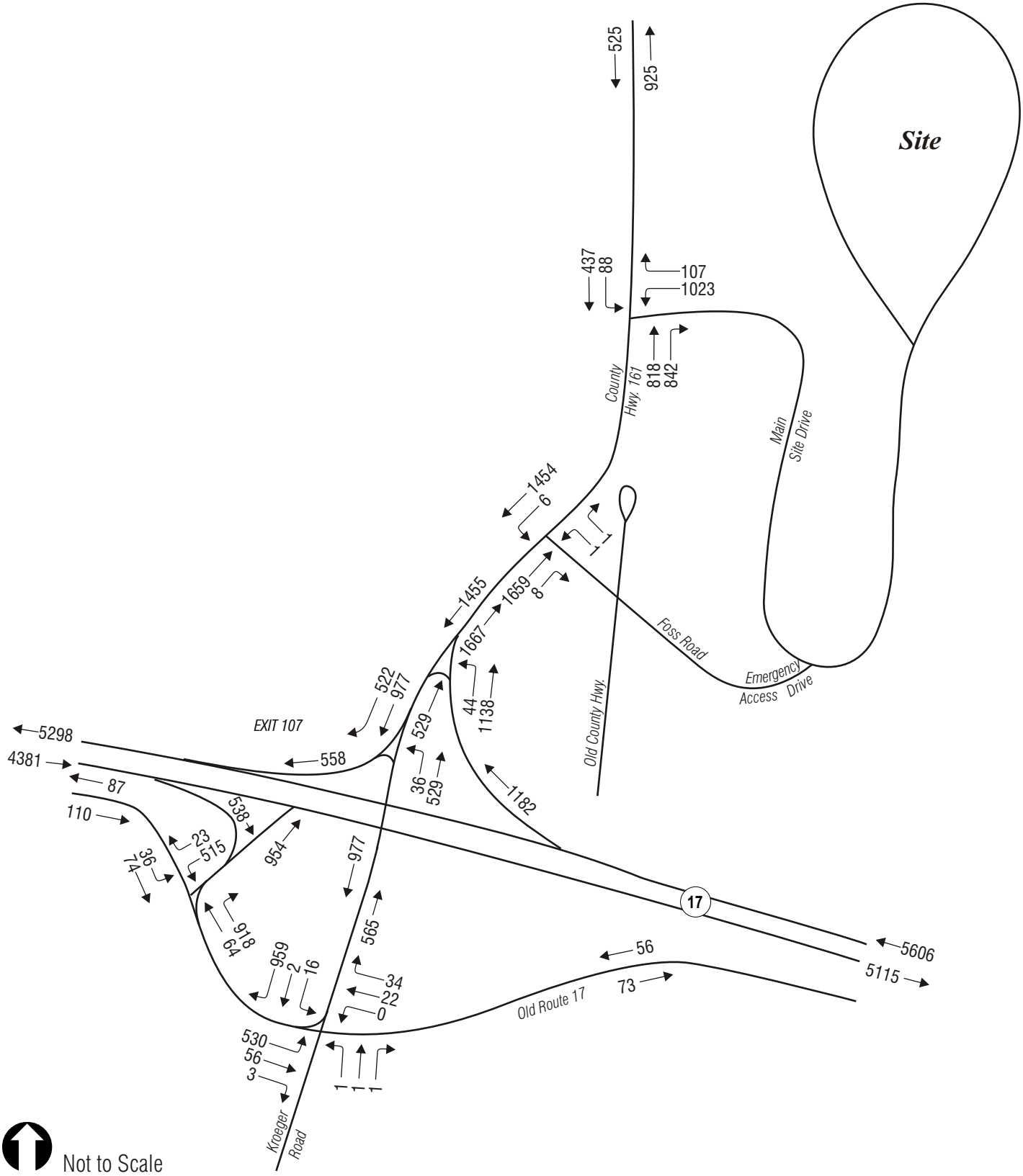
Figure 13



Stockbridge-Munsee Casino
Thompson, New York

2018 Build
Traffic Volumes
Sunday Afternoon Peak Hour

Figure 14

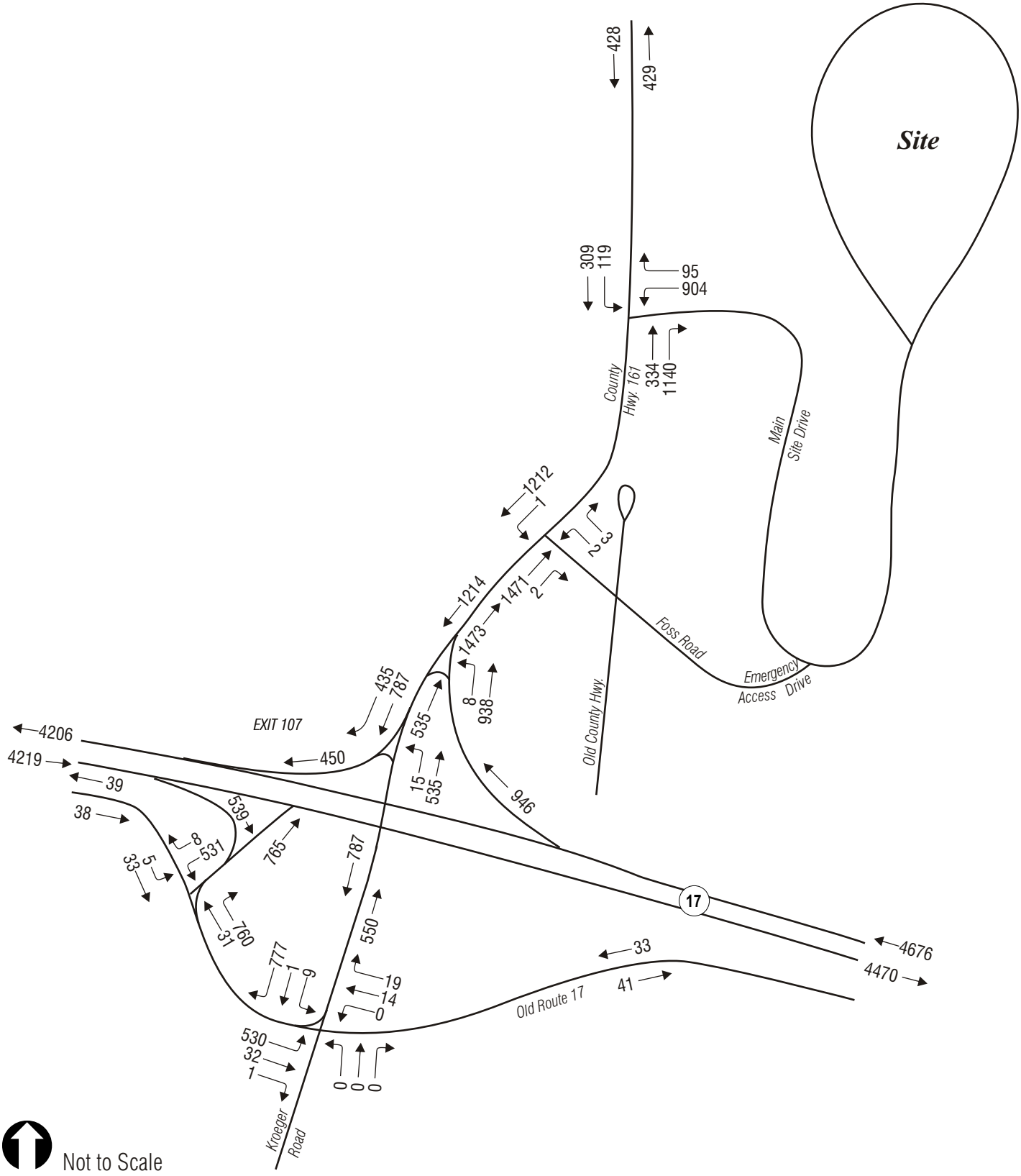


Stockbridge-Munsee Casino
Thompson, New York

2018 Cumulative Build Traffic Volumes

Friday Afternoon Peak Hour

Figure 15

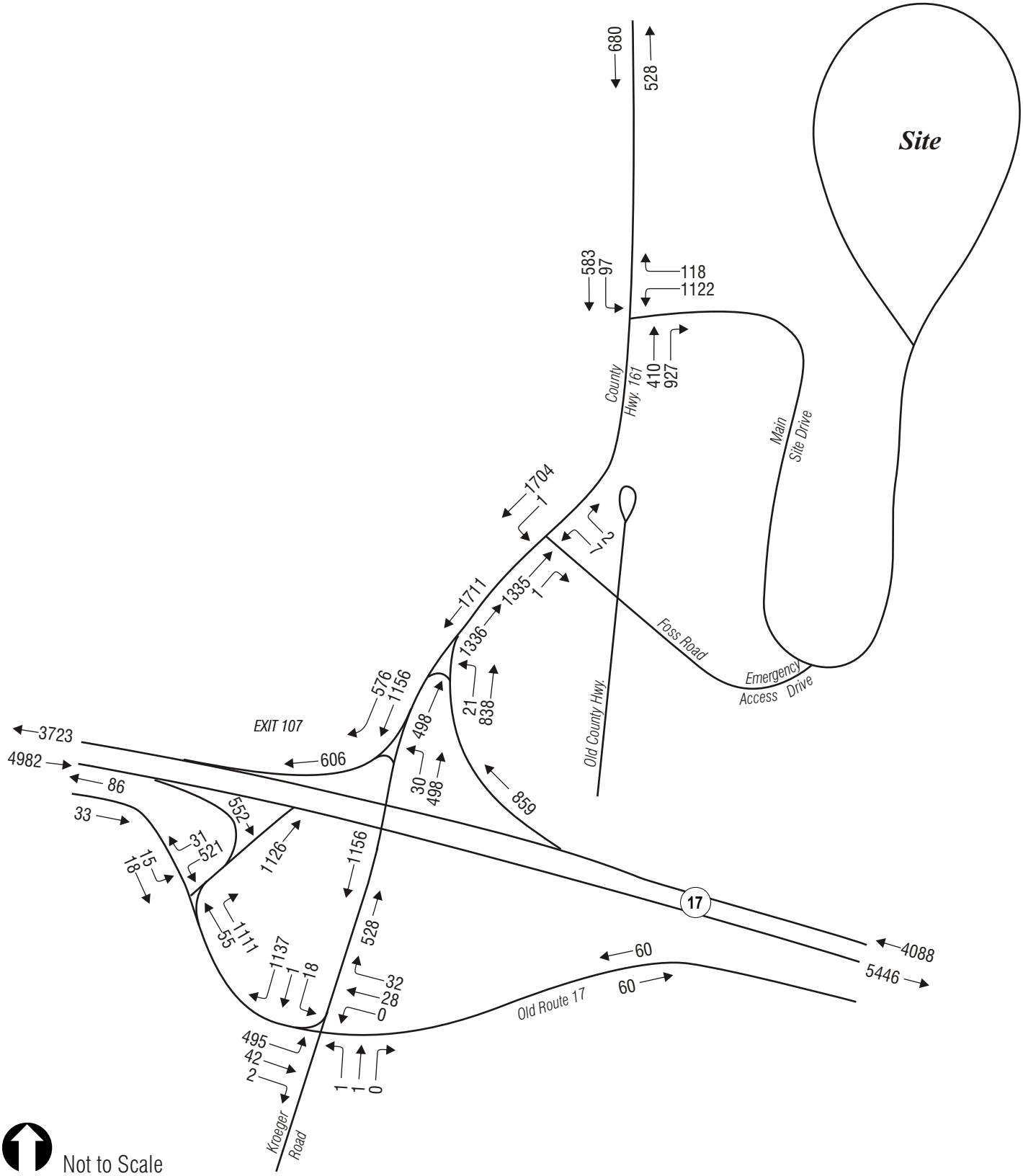


Stockbridge-Munsee Casino
Thompson, New York

2018 Cumulative Build Traffic Volumes

Saturday Evening Peak Hour

Figure 16



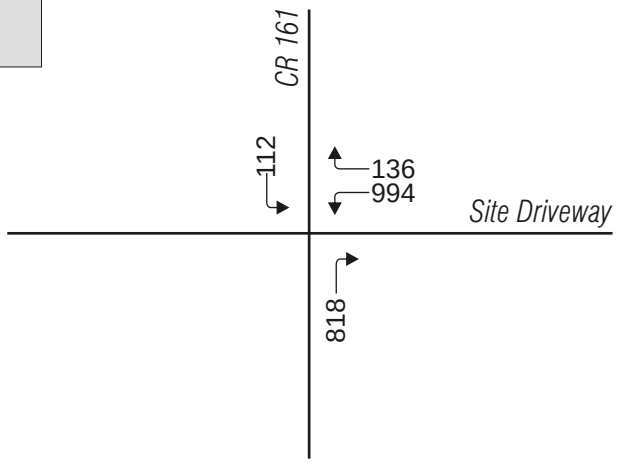
Stockbridge-Munsee Casino
Thompson, New York

2018 Cumulative Build Traffic Volumes

Sunday Afternoon Peak Hour

Figure 17

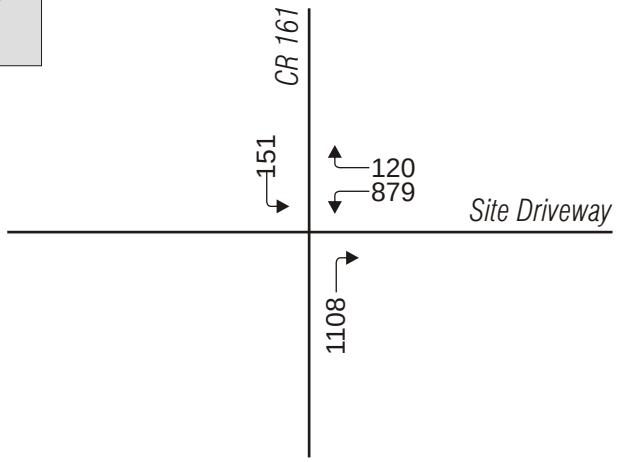
Friday Afternoon Peak Hour
(4:45 PM - 5:45 PM)



Project Trips

930	IN
1,130	OUT
2,060	TOTAL

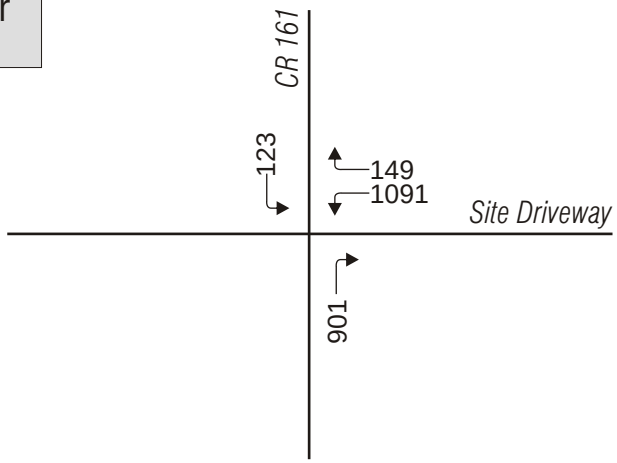
Saturday Evening Peak Hour
(7:30 PM - 8:30 PM)



Project Trips

1,259	IN
999	OUT
2,258	TOTAL

Sunday Afternoon Peak Hour
(4:00 PM - 5:00 PM)



Project Trips

1,024	IN
1,240	OUT
2,264	TOTAL

Not to Scale

Note: Traffic volumes include the effects of shared trips.

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Proposed Project Trips - Peak Month Conditions

Figure H

Appendix A

Traffic Volume Counts

J.RAP & Associates, Inc.- DATA MANAGEMENT SYSTEM
60 MINUTES, 1 CHANNEL VEHICLE COUNT

REFERENCE: 26054000
LOCATION : RTE 17 WB AFTER EXIT RAMP TO RTE 161
ATR # : 400224
COMMENTS : #1

FILENAME: 400224.DAT
WEEK OF MONDAY 07/05/10

CH1 : WB

HOUR BEGINS	Monday 5 CH1	Tuesday 6 CH1	Wednesday 7 CH1	Thursday 8 CH1	Friday 9 CH1	Saturday 10 CH1	Sunday 11 CH1	WEEKDAY AVERAGE CH1
12 AM	*	*	*	240	481	389	305	361
1	*	*	*	180	389	227	212	285
2	*	*	*	110	274	151	140	192
3	*	*	*	105	142	114	90	124
4	*	*	*	120	129	99	59	125
5	*	*	*	133	160	102	98	147
6	*	*	*	339	346	192	151	343
7	*	*	*	672	761	425	302	717
8	*	*	*	1076	1170	758	520	1123
9	*	*	*	1020	1243	1201	972	1132
10	*	*	*	1017	1263	1220	1426	1140
11	*	*	*	1000	1336	1284	1890	1168
12 PM	*	*	*	1131	1528	1351	1934	1330
1	*	*	*	962	1494	1126	1777	1228
2	*	*	*	1221	1705	1105	1400	1463
3	*	*	*	1166	1669	1060	1099	1418
4	*	*	*	1234	1615	1048	990	1425
5	*	*	*	1375	1928	1079	919	1652
6	*	*	*	1203	1764	1180	812	1484
7	*	*	*	979	1444	1005	789	1212
8	*	*	*	977	1158	669	750	1068
9	*	*	348	925	1031	529	553	768
10	*	*	442	818	936	508	409	732
11	*	*	420	560	592	358	317	524
TOTALS	*	*	1210	18563	24558	17180	17914	21161
% AVERAGE WEEKDAY	*	*	5.7	87.7	116.1			
AM PK HR	*	*	*	8:00	11:00	11:00	11:00	11:00
VOLUME	*	*	*	1076	1336	1284	1890	1168
PM PK HR	*	*	10:00	5:00	5:00	12:00	12:00	5:00
VOLUME	*	*	442	1375	1928	1351	1934	1652

J.RAP & Associates - DATA MANAGEMENT SYSTEM
60 MINUTES, 1 CHANNEL VEHICLE COUNT

REFERENCE: 26054000
LOCATION : RTE 17 WB AFTER EXIT RAMP TO RTE 161
ATR # : 400224
COMMENTS : #1

FILENAME: 400224.DAT
WEEK OF MONDAY 07/12/10

CH1 : WB

HOUR BEGINS	Monday 12 CH1	Tuesday 13 CH1	Wednesday 14 CH1	Thursday 15 CH1	Friday 16 CH1	Saturday 17 CH1	Sunday 18 CH1	WEEKDAY AVERAGE CH1
12 AM	202	211	*	*	*	*	*	207
1	154	141	*	*	*	*	*	148
2	68	110	*	*	*	*	*	89
3	94	125	*	*	*	*	*	110
4	93	78	*	*	*	*	*	86
5	125	149	*	*	*	*	*	137
6	310	271	*	*	*	*	*	291
7	685	613	*	*	*	*	*	649
8	1036	943	*	*	*	*	*	990
9	1049	994	*	*	*	*	*	1022
10	968	920	*	*	*	*	*	944
11	1035	983	*	*	*	*	*	1009
12 PM	993	1019	*	*	*	*	*	1006
1	1070	57	*	*	*	*	*	564
2	1015	*	*	*	*	*	*	1015
3	1044	*	*	*	*	*	*	1044
4	1099	*	*	*	*	*	*	1099
5	1043	*	*	*	*	*	*	1043
6	896	*	*	*	*	*	*	896
7	707	*	*	*	*	*	*	707
8	584	*	*	*	*	*	*	584
9	459	*	*	*	*	*	*	459
10	358	*	*	*	*	*	*	358
11	284	*	*	*	*	*	*	284
TOTALS	15371	6614	*	*	*	*	*	14741
% AVERAGE WEEKDAY	104.3	44.9	*	*	*			
AM PK HR	9:00	9:00	*	*	*	*	*	9:00
VOLUME	1049	994	*	*	*	*	*	1022
PM PK HR	4:00	12:00	*	*	*	*	*	4:00
VOLUME	1099	1019	*	*	*	*	*	1099

J.RAP & Associates - DATA MANAGEMENT SYSTEM
60 MINUTES, 1 CHANNEL VEHICLE COUNT

REFERENCE: 26064000
LOCATION : RTE 17 EB AFTER EXIT RAMP TO RTE 161 FILENAME: 700020.DAT
ATR # : 700020 WEEK OF MONDAY 07/05/10
COMMENTS : #2 CH1 : EB

HOUR BEGINS	Monday 5 CH1	Tuesday 6 CH1	Wednesday 7 CH1	Thursday 8 CH1	Friday 9 CH1	Saturday 10 CH1	Sunday 11 CH1	WEEKDAY AVERAGE CH1
12 AM	*	*	*	273	290	382	935	282
1	*	*	*	130	140	201	330	135
2	*	*	*	127	172	173	274	150
3	*	*	*	139	110	65	117	125
4	*	*	*	173	155	90	87	164
5	*	*	*	323	317	125	109	320
6	*	*	*	504	501	217	227	503
7	*	*	*	726	708	305	293	717
8	*	*	*	901	815	416	498	858
9	*	*	*	942	928	639	714	935
10	*	*	*	1020	1035	855	1115	1028
11	*	*	*	1063	1152	1010	1571	1108
12 PM	*	*	*	1141	1296	1106	1783	1219
1	*	*	*	1173	1354	1144	1769	1264
2	*	*	*	1233	1355	1019	1846	1294
3	*	*	*	1247	1499	1002	2012	1373
4	*	*	*	1341	1517	1097	2141	1429
5	*	*	*	1403	1594	1163	2079	1499
6	*	*	*	1049	1166	952	1970	1108
7	*	*	*	847	933	853	1896	890
8	*	*	*	723	722	718	2000	723
9	*	*	215	590	595	629	1891	467
10	*	*	435	493	489	793	1560	472
11	*	*	309	357	382	1245	1035	349
TOTALS	*	*	959	17918	19225	16199	28252	18412
% AVERAGE WEEKDAY	*	*	5.2	97.3	104.4			
AM PK HR	*	*	*	11:00	11:00	11:00	11:00	11:00
VOLUME	*	*	*	1063	1152	1010	1571	1108
PM PK HR	*	*	10:00	5:00	5:00	11:00	4:00	5:00
VOLUME	*	*	435	1403	1594	1245	2141	1499

J.RAP & Associates - DATA MANAGEMENT SYSTEM
60 MINUTES, 1 CHANNEL VEHICLE COUNT

REFERENCE: 26064000
LOCATION : RTE 17 EB AFTER EXIT RAMP TO RTE 161
ATR # : 700020
COMMENTS : #2

FILENAME: 700020.DAT
WEEK OF MONDAY 07/12/10

CH1 : EB

HOUR BEGINS	Monday 12 CH1	Tuesday 13 CH1	Wednesday 14 CH1	Thursday 15 CH1	Friday 16 CH1	Saturday 17 CH1	Sunday 18 CH1	WEEKDAY AVERAGE CH1
12 AM	455	190	*	*	*	*	*	323
1	179	111	*	*	*	*	*	145
2	136	103	*	*	*	*	*	120
3	148	96	*	*	*	*	*	122
4	310	177	*	*	*	*	*	244
5	659	333	*	*	*	*	*	496
6	943	550	*	*	*	*	*	747
7	1064	720	*	*	*	*	*	892
8	1368	991	*	*	*	*	*	1180
9	1280	977	*	*	*	*	*	1129
10	1473	1101	*	*	*	*	*	1287
11	1492	1062	*	*	*	*	*	1277
12 PM	1493	1083	*	*	*	*	*	1288
1	1420	175	*	*	*	*	*	798
2	1349	*	*	*	*	*	*	1349
3	1323	*	*	*	*	*	*	1323
4	1381	*	*	*	*	*	*	1381
5	1396	*	*	*	*	*	*	1396
6	1101	*	*	*	*	*	*	1101
7	851	*	*	*	*	*	*	851
8	747	*	*	*	*	*	*	747
9	562	*	*	*	*	*	*	562
10	442	*	*	*	*	*	*	442
11	309	*	*	*	*	*	*	309
TOTALS	21881	7669	*	*	*	*	*	19509
% AVERAGE WEEKDAY	112.2	39.3	*	*	*			
AM PK HR	11:00	10:00	*	*	*	*	*	10:00
VOLUME	1492	1101	*	*	*	*	*	1287
PM PK HR	12:00	12:00	*	*	*	*	*	5:00
VOLUME	1493	1083	*	*	*	*	*	1396

Basic Volume Report: NB CR161 OPASS

Station ID : NB CR161 OPASS
Info Line 1 : J RAP & ASSOCIATES INC.
Info Line 2 : Mach # 8
GPS Lat/Lon :
DB File : NB CR161 OPASS.DB

Last Connected Device Type : Apollo
Version Number : 1.51
Serial Number : 97852
Number of Lanes : 1
Posted Speed Limit :

Lane #1 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.			Normal	Axle	Yes	

Lane #1 Basic Volume Data From: 11:00 - 07/09/2010 To: 19:44 - 07/12/2010

Date	Time	:00	:15	:30	:45	Total
07/09/10	11:00	18	13	12	24	67
Fri	12:00	32	20	22	21	95
	13:00	20	28	30	27	105
	14:00	22	20	40	17	99
	15:00	23	15	34	19	91
	16:00	15	23	23	26	87
	17:00	28	22	28	9	87
	18:00	14	16	11	18	59
	19:00	19	12	9	8	48
	20:00	6	9	3	4	22
	21:00	9	9	6	7	31
	22:00	8	2	5	2	17
	23:00	0	1	0	1	2
Day Total :						810

AM Total :	67 (8.3%)	Peak AM Hour : 11:00 =	67 (8.3%)	Peak AM Factor : 0.698	Average Period :	15.6
PM Total :	743 (91.7%)	Peak PM Hour : 13:45 =	109 (13.5%)	Peak PM Factor : 0.681	Average Hour :	62.3

Date	Time	:00	:15	:30	:45	Total
07/10/10	00:00	1	1	0	0	2
Sat	01:00	1	0	0	1	2
	02:00	0	0	0	1	1
	03:00	2	0	1	0	3
	04:00	1	1	0	0	2
	05:00	2	1	0	0	3
	06:00	3	1	1	1	6
	07:00	0	5	5	4	14
	08:00	4	4	3	2	13
	09:00	7	3	2	4	16
	10:00	6	5	13	11	35
	11:00	2	9	5	7	23
	12:00	16	4	12	15	47
	13:00	6	9	14	7	36
	14:00	10	8	6	3	27
	15:00	6	8	8	5	27
	16:00	9	3	6	8	26
	17:00	6	8	7	7	28
	18:00	9	7	6	7	29
	19:00	3	2	3	4	12
	20:00	6	8	7	11	32
	21:00	13	8	8	4	33
	22:00	3	6	4	1	14
	23:00	7	3	6	5	21
Day Total :						452

AM Total :	120 (26.5%)	Peak AM Hour : 10:00 =	35 (7.7%)	Peak AM Factor : 0.673	Average Period :	4.7
PM Total :	332 (73.5%)	Peak PM Hour : 12:00 =	47 (10.4%)	Peak PM Factor : 0.734	Average Hour :	18.8

Date	Time	:00	:15	:30	:45	Total
07/11/10	00:00	7	3	7	6	23
Sun	01:00	5	6	2	3	16
	02:00	2	2	1	1	6
	03:00	0	4	2	2	8
	04:00	0	1	2	0	3
	05:00	0	0	0	0	0
	06:00	2	1	2	1	6
	07:00	0	0	3	2	5
	08:00	5	4	4	2	15
	09:00	8	8	9	5	30
	10:00	12	8	14	14	48
	11:00	9	10	14	21	54
	12:00	17	24	21	21	83
	13:00	15	21	15	26	77
	14:00	20	17	20	23	80
	15:00	16	13	13	19	61
	16:00	16	16	20	19	71
	17:00	18	20	21	16	75
	18:00	21	23	11	24	79
	19:00	14	18	15	17	64
	20:00	13	13	15	7	48
	21:00	11	10	6	5	32
	22:00	9	9	3	4	25
	23:00	3	2	4	4	13
Day Total :						922

AM Total :	214 (23.2%)	Peak AM Hour : 11:00 =	54 (5.9%)	Peak AM Factor : 0.643	Average Period :	9.6
PM Total :	708 (76.8%)	Peak PM Hour : 12:00 =	83 (9.0%)	Peak PM Factor : 0.798	Average Hour :	38.4

Date	Time	:00	:15	:30	:45	Total
07/12/10	00:00	1	3	1	1	6
Mon	01:00	0	1	1	0	2
	02:00	0	1	0	0	1
	03:00	1	0	1	0	2
	04:00	0	0	1	0	1
	05:00	0	0	3	5	8
	06:00	2	8	10	3	23
	07:00	9	11	11	8	39
	08:00	15	13	14	18	60
	09:00	13	16	14	10	53
	10:00	14	21	18	24	77
	11:00	16	11	12	11	50
	12:00	13	14	14	18	59
	13:00	19	13	14	17	63
	14:00	15	19	20	25	79
	15:00	12	17	16	12	57
	16:00	18	14	11	11	54
	17:00	17	13	11	11	52
	18:00	7	11	13	12	43
	19:00	11	8			19
Day Total :						748

AM Total :	322 (43.0%)	Peak AM Hour : 10:15 =	79 (10.6%)	Peak AM Factor : 0.823	Average Period :	9.6
PM Total :	426 (57.0%)	Peak PM Hour : 14:00 =	79 (10.6%)	Peak PM Factor : 0.790	Average Hour :	38.4

Basic Volume Summary: NB CR161 OPASS

Grand Total For Data From: 11:00 - 07/09/2010 To: 19:44 - 07/12/2010

Lane	Total Count		# Of Days	ADT	Avg. Period	Avg. Hour	AM Total & Percent	PM Total & Percent
#1.	2932	(100.0%)	3.35	874	9.1	36.4	723 (24.7%)	2209 (75.3%)
ALL	2932		3.35	874	9.1	36.4	723 (24.7%)	2209 (75.3%)

Lane	Peak AM Hour		Date	Peak AM Factor	Peak PM Hour		Date	Peak PM Factor
#1.	10:15 =	79	07/12/2010	0.823	13:45 =	109	07/09/2010	0.681

Basic Volume Report: SB CR161 AT OP

Station ID : SB CR161 AT OP
Info Line 1 : J RAP & ASSOCIATES INC.
Info Line 2 : Mach # 6
GPS Lat/Lon :
DB File : SB CR161 AT OP.DB

Last Connected Device Type : Apollo
Version Number : 1.45
Serial Number : 97854
Number of Lanes : 1
Posted Speed Limit :

Lane #1 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.			Normal	Axle	Yes	

Lane #1 Basic Volume Data From: 11:00 - 07/09/2010 To: 19:44 - 07/12/2010

Date	Time	:00	:15	:30	:45	Total
07/09/10	11:00	34	40	30	36	140
Fri	12:00	23	44	32	29	128
	13:00	34	42	34	33	143
	14:00	29	42	38	35	144
	15:00	38	40	42	37	157
	16:00	35	35	35	33	138
	17:00	32	35	41	37	145
	18:00	17	29	26	19	91
	19:00	21	20	10	15	66
	20:00	13	21	13	12	59
	21:00	15	16	15	4	50
	22:00	4	1	9	7	21
	23:00	7	7	3	6	23
Day Total :						1305

AM Total :	140 (10.7%)	Peak AM Hour : 11:00 =	140 (10.7%)	Peak AM Factor : 0.875	Average Period : 25.1
PM Total :	1165 (89.3%)	Peak PM Hour : 15:00 =	157 (12.0%)	Peak PM Factor : 0.892	Average Hour : 100.4

Date	Time	:00	:15	:30	:45	Total
07/10/10	00:00	3	3	4	0	10
Sat	01:00	4	1	1	3	9
	02:00	2	2	3	1	8
	03:00	1	4	0	1	6
	04:00	3	7	2	0	12
	05:00	2	5	5	6	18
	06:00	6	5	9	4	24
	07:00	5	11	11	6	33
	08:00	9	13	7	6	35
	09:00	18	16	13	25	72
	10:00	24	15	23	16	78
	11:00	17	23	19	18	77
	12:00	27	15	30	22	94
	13:00	28	26	20	19	93
	14:00	16	19	21	21	77
	15:00	26	20	12	23	81
	16:00	16	13	16	27	72
	17:00	14	25	16	19	74
	18:00	16	17	20	21	74
	19:00	9	19	20	13	61
	20:00	11	16	8	10	45
	21:00	10	8	4	5	27
	22:00	10	16	26	20	72
	23:00	32	18	21	21	92
Day Total :						1244

AM Total :	382 (30.7%)	Peak AM Hour : 09:45 =	87 (7.0%)	Peak AM Factor : 0.870	Average Period :	13.0
PM Total :	862 (69.3%)	Peak PM Hour : 12:30 =	106 (8.5%)	Peak PM Factor : 0.828	Average Hour :	51.8

Date	Time	:00	:15	:30	:45	Total
07/11/10	00:00	10	13	9	16	48
Sun	01:00	14	7	13	9	43
	02:00	12	12	6	4	34
	03:00	3	3	6	3	15
	04:00	4	0	2	4	10
	05:00	4	5	6	11	26
	06:00	6	14	9	8	37
	07:00	6	14	9	15	44
	08:00	17	17	16	14	64
	09:00	23	19	22	18	82
	10:00	14	31	32	40	117
	11:00	25	47	35	33	140
	12:00	49	71	38	41	199
	13:00	42	47	53	52	194
	14:00	52	56	46	67	221
	15:00	56	54	62	48	220
	16:00	69	57	54	62	242
	17:00	48	63	40	50	201
	18:00	48	55	45	58	206
	19:00	48	53	58	57	216
	20:00	55	75	70	45	245
	21:00	66	79	83	72	300
	22:00	65	87	95	64	311
	23:00	58	45	29	24	156
Day Total :						3371

AM Total :	660 (19.6%)	Peak AM Hour : 10:45 =	147 (4.4%)	Peak AM Factor : 0.782	Average Period :	35.1
PM Total :	2711 (80.4%)	Peak PM Hour : 21:45 =	319 (9.5%)	Peak PM Factor : 0.839	Average Hour :	140.5

Date	Time	:00	:15	:30	:45	Total
07/12/10	00:00	25	25	12	9	71
Mon	01:00	7	2	1	6	16
	02:00	3	1	0	1	5
	03:00	3	1	4	5	13
	04:00	16	15	13	24	68
	05:00	36	37	47	51	171
	06:00	30	48	34	43	155
	07:00	33	60	48	79	220
	08:00	55	61	70	53	239
	09:00	50	73	65	67	255
	10:00	60	82	73	77	292
	11:00	80	61	63	44	248
	12:00	60	55	50	56	221
	13:00	46	54	53	47	200
	14:00	52	41	45	37	175
	15:00	32	27	27	35	121
	16:00	54	38	42	26	160
	17:00	25	34	28	29	116
	18:00	33	33	21	32	119
	19:00	24	20			44
Day Total :						2909

AM Total :	1753 (60.3%)	Peak AM Hour : 10:15 =	312 (10.7%)	Peak AM Factor : 0.951	Average Period :	37.3
PM Total :	1156 (39.7%)	Peak PM Hour : 12:00 =	221 (7.6%)	Peak PM Factor : 0.921	Average Hour :	149.2

Basic Volume Summary: SB CR161 AT OP

Grand Total For Data From: 11:00 - 07/09/2010 To: 19:44 - 07/12/2010

Lane	Total Count		# Of Days	ADT	Avg. Period	Avg. Hour	AM Total & Percent	PM Total & Percent
#1.	8829	(100.0%)	3.35	2632	27.4	109.7	2935 (33.2%)	5894 (66.8%)
ALL	8829		3.35	2632	27.4	109.7	2935 (33.2%)	5894 (66.8%)

Lane	Peak AM Hour		Date	Peak AM Factor	Peak PM Hour		Date	Peak PM Factor
#1.	10:15 =	312	07/12/2010	0.951	21:45 =	319	07/11/2010	0.839

Basic Volume Report: NB CR 161 1

Station ID : NB CR 161 1
Info Line 1 : J RAP & ASSOCIATES INC.
Info Line 2 : Mach # 12
GPS Lat/Lon :
DB File : NB CR 161 1.DB

Last Connected Device Type : Apollo
Version Number : 1.51
Serial Number : 10341
Number of Lanes : 1
Posted Speed Limit :

Lane #1 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.			Normal	Axle	Yes	

Lane #1 Basic Volume Data From: 10:30 - 07/09/2010 To: 20:14 - 07/12/2010

Date	Time	:00	:15	:30	:45	Total
07/09/10	10:00			35	34	69
Fri	11:00	31	34	36	53	154
	12:00	53	58	64	58	233
	13:00	59	103	73	77	312
	14:00	86	93	107	81	367
	15:00	96	88	103	88	375
	16:00	84	79	78	97	338
	17:00	122	116	102	77	417
	18:00	68	63	48	36	215
	19:00	32	30	16	16	94
	20:00	21	15	17	20	73
	21:00	13	22	24	16	75
	22:00	18	11	20	10	59
	23:00	7	8	11	5	31
Day Total :						2812

AM Total :	223 (7.9%)	Peak AM Hour : 11:00 =	154 (5.5%)	Peak AM Factor : 0.726	Average Period :	52.1
PM Total :	2589 (92.1%)	Peak PM Hour : 16:45 =	437 (15.5%)	Peak PM Factor : 0.895	Average Hour :	208.3

Date	Time	:00	:15	:30	:45	Total
07/10/10	00:00	4	5	11	2	22
Sat	01:00	4	5	1	6	16
	02:00	1	3	0	1	5
	03:00	2	5	2	1	10
	04:00	0	1	3	3	7
	05:00	2	5	1	3	11
	06:00	1	2	6	5	14
	07:00	2	9	6	13	30
	08:00	16	16	14	10	56
	09:00	13	14	16	17	60
	10:00	14	23	21	17	75
	11:00	13	13	14	14	54
	12:00	21	17	33	24	95
	13:00	22	27	22	23	94
	14:00	10	20	17	17	64
	15:00	16	14	18	17	65
	16:00	26	9	21	19	75
	17:00	10	21	17	15	63
	18:00	13	22	16	9	60
	19:00	10	13	23	18	64
	20:00	16	17	19	13	65
	21:00	12	13	10	15	50
	22:00	19	13	17	8	57
	23:00	22	15	21	14	72
Day Total :						1184

AM Total :	360 (30.4%)	Peak AM Hour : 09:45 =	75 (6.3%)	Peak AM Factor : 0.815	Average Period : 12.3
PM Total :	824 (69.6%)	Peak PM Hour : 12:30 =	106 (9.0%)	Peak PM Factor : 0.803	Average Hour : 49.3

Date	Time	:00	:15	:30	:45	Total
07/11/10	00:00	32	16	13	21	82
Sun	01:00	14	14	10	6	44
	02:00	7	8	10	10	35
	03:00	3	3	2	7	15
	04:00	1	7	6	2	16
	05:00	3	3	3	6	15
	06:00	5	11	12	6	34
	07:00	16	7	9	19	51
	08:00	17	14	13	14	58
	09:00	20	18	28	21	87
	10:00	34	30	35	44	143
	11:00	41	43	49	57	190
	12:00	60	75	57	89	281
	13:00	72	76	61	67	276
	14:00	57	57	60	44	218
	15:00	42	48	22	36	148
	16:00	38	42	33	34	147
	17:00	30	24	34	41	129
	18:00	44	31	30	28	133
	19:00	28	25	21	20	94
	20:00	31	16	29	19	95
	21:00	22	15	28	8	73
	22:00	11	16	15	8	50
	23:00	8	7	11	10	36
Day Total :						2450

AM Total :	770 (31.4%)	Peak AM Hour : 11:00 =	190 (7.8%)	Peak AM Factor : 0.833	Average Period :	25.5
PM Total :	1680 (68.6%)	Peak PM Hour : 12:45 =	298 (12.2%)	Peak PM Factor : 0.837	Average Hour :	102.1

Date	Time	:00	:15	:30	:45	Total
07/12/10	00:00	9	12	8	10	39
Mon	01:00	1	3	6	4	14
	02:00	1	3	1	0	5
	03:00	1	0	1	4	6
	04:00	4	3	9	6	22
	05:00	3	3	5	8	19
	06:00	13	19	17	27	76
	07:00	21	26	26	32	105
	08:00	23	30	36	40	129
	09:00	26	27	34	35	122
	10:00	29	26	30	30	115
	11:00	32	27	23	31	113
	12:00	26	40	43	37	146
	13:00	32	29	36	35	132
	14:00	38	26	30	39	133
	15:00	29	38	38	48	153
	16:00	56	34	38	33	161
	17:00	36	32	52	29	149
	18:00	29	30	27	31	117
	19:00	29	24	18	23	94
Day Total :						1850

AM Total :	765 (41.4%)	Peak AM Hour : 08:15 =	132 (7.1%)	Peak AM Factor : 0.825	Average Period :	23.1
PM Total :	1085 (58.6%)	Peak PM Hour : 15:15 =	180 (9.7%)	Peak PM Factor : 0.804	Average Hour :	92.5

Basic Volume Summary: NB CR 161 1

Grand Total For Data From: 10:30 - 07/09/2010 To: 20:14 - 07/12/2010

Lane	Total Count		# Of Days	ADT	Avg. Period	Avg. Hour	AM Total & Percent	PM Total & Percent
#1.	8296	(100.0%)	3.40	2443	25.4	101.8	2118 (25.5%)	6178 (74.5%)
ALL	8296		3.40	2443	25.4	101.8	2118 (25.5%)	6178 (74.5%)

Lane	Peak AM Hour		Date	Peak AM Factor	Peak PM Hour		Date	Peak PM Factor
#1.	11:00 =	190	07/11/2010	0.833	16:45 =	437	07/09/2010	0.895

Basic Volume Report: SB CTY 161 1

Station ID : SB CTY 161 1
Info Line 1 : J RAP & ASSOCIATES INC.
Info Line 2 : Mach # 5
GPS Lat/Lon :
DB File : SB CTY 161 1.DB

Last Connected Device Type : Apollo
Version Number : 1.45
Serial Number : 97853

Number of Lanes : 1
Posted Speed Limit :

Lane #1 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.			Normal	Axle	Yes	

Lane #1 Basic Volume Data From: 10:45 - 07/09/2010 To: 19:59 - 07/12/2010

Date	Time	:00	:15	:30	:45	Total
07/09/10	10:00				36	36
Fri	11:00	36	35	26	33	130
	12:00	30	40	30	38	138
	13:00	37	52	37	32	158
	14:00	39	42	41	44	166
	15:00	50	48	48	41	187
	16:00	39	36	39	36	150
	17:00	42	37	41	38	158
	18:00	19	24	30	22	95
	19:00	21	21	14	10	66
	20:00	8	18	12	6	44
	21:00	11	13	7	9	40
	22:00	0	3	8	2	13
	23:00	5	6	3	4	18
Day Total :						1399

AM Total :	166 (11.9%)	Peak AM Hour :	10:45 =	133 (9.5%)	Peak AM Factor :	0.924	Average Period : 26.4
PM Total :	1233 (88.1%)	Peak PM Hour :	14:45 =	190 (13.6%)	Peak PM Factor :	0.913	Average Hour : 105.6

Date	Time	:00	:15	:30	:45	Total
07/10/10	00:00	3	3	3	1	10
Sat	01:00	4	1	0	1	6
	02:00	2	2	2	1	7
	03:00	1	4	0	1	6
	04:00	3	8	1	0	12
	05:00	3	7	5	6	21
	06:00	6	4	10	5	25
	07:00	4	12	4	7	27
	08:00	9	7	6	8	30
	09:00	15	12	11	22	60
	10:00	18	16	18	14	66
	11:00	15	21	16	17	69
	12:00	26	14	26	13	79
	13:00	27	24	15	15	81
	14:00	11	15	12	20	58
	15:00	21	17	10	24	72
	16:00	11	13	13	19	56
	17:00	14	14	19	14	61
	18:00	14	13	22	18	67
	19:00	13	12	14	9	48
	20:00	10	14	8	7	39
	21:00	9	7	4	6	26
	22:00	7	20	26	25	78
	23:00	33	24	22	24	103
Day Total :						1107

AM Total :	339 (30.6%)	Peak AM Hour : 09:45 =	74 (6.7%)	Peak AM Factor : 0.841	Average Period :	11.5
PM Total :	768 (69.4%)	Peak PM Hour : 22:30 =	108 (9.8%)	Peak PM Factor : 0.818	Average Hour :	46.1

Date	Time	:00	:15	:30	:45	Total
07/11/10	00:00	11	19	8	16	54
Sun	01:00	17	10	16	10	53
	02:00	13	14	3	6	36
	03:00	3	5	6	4	18
	04:00	4	2	2	6	14
	05:00	5	5	6	12	28
	06:00	7	15	9	8	39
	07:00	6	14	13	12	45
	08:00	17	17	12	16	62
	09:00	25	22	17	19	83
	10:00	20	23	36	42	121
	11:00	30	52	40	45	167
	12:00	51	68	40	46	205
	13:00	49	47	59	48	203
	14:00	61	61	49	77	248
	15:00	55	59	59	45	218
	16:00	73	60	67	67	267
	17:00	58	58	39	53	208
	18:00	55	49	51	70	225
	19:00	56	61	61	63	241
	20:00	62	78	73	47	260
	21:00	60	77	86	66	289
	22:00	67	78	85	67	297
	23:00	51	42	33	23	149
Day Total :						3530

AM Total :	720 (20.4%)	Peak AM Hour : 11:00 =	167 (4.7%)	Peak AM Factor : 0.803	Average Period :	36.8
PM Total :	2810 (79.6%)	Peak PM Hour : 21:30 =	297 (8.4%)	Peak PM Factor : 0.863	Average Hour :	147.1

Date	Time	:00	:15	:30	:45	Total
07/12/10	00:00	24	22	14	7	67
Mon	01:00	6	3	1	7	17
	02:00	3	1	0	1	5
	03:00	3	1	4	6	14
	04:00	16	16	16	23	71
	05:00	37	36	50	45	168
	06:00	35	45	36	42	158
	07:00	40	65	37	76	218
	08:00	59	61	63	54	237
	09:00	52	70	73	58	253
	10:00	72	76	73	84	305
	11:00	73	57	56	45	231
	12:00	55	59	50	52	216
	13:00	46	53	58	46	203
	14:00	53	42	42	41	178
	15:00	30	29	33	42	134
	16:00	46	42	41	26	155
	17:00	16	35	24	31	106
	18:00	28	32	22	27	109
	19:00	23	18	18		59
Day Total :						2904

AM Total :	1744 (60.1%)	Peak AM Hour : 10:15 =	306 (10.5%)	Peak AM Factor : 0.911	Average Period :	36.8
PM Total :	1160 (39.9%)	Peak PM Hour : 12:00 =	216 (7.4%)	Peak PM Factor : 0.915	Average Hour :	147.0

Basic Volume Summary: SB CTY 161 1

Grand Total For Data From: 10:45 - 07/09/2010 To: 19:59 - 07/12/2010

Lane	Total Count		# Of Days	ADT	Avg. Period	Avg. Hour	AM Total & Percent	PM Total & Percent
#1.	8940	(100.0%)	3.38	2649	27.6	110.4	2969 (33.2%)	5971 (66.8%)
ALL	8940		3.38	2649	27.6	110.4	2969 (33.2%)	5971 (66.8%)

Lane	Peak AM Hour		Date	Peak AM Factor	Peak PM Hour		Date	Peak PM Factor
#1.	10:15 =	306	07/12/2010	0.911	21:30 =	297	07/11/2010	0.863

J. RAP & ASSOCIATES, INC.

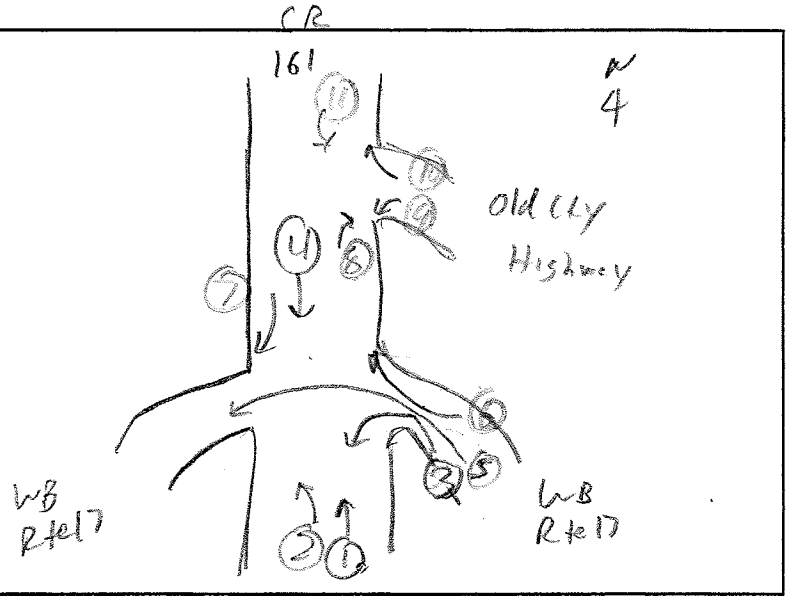
TURNING MOVEMENT COUNTS

Project Sullivan Cty Location CR 161 / Old City Highway / WB Rte 17 Date 7/9/10 (Friday)

Project No. _____ Weather Sunny Surveyor's Name _____

COMMENTS _____

SKETCH:



TIME	TURNING MOVEMENTS															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4:15	13	3	6	30	1	75	13	3	0	1	1					
4:30	12	6	7	30	2	65	9	0	0	0	1					
4:45	18	6	4	28	0	59	11	2	1	1	0					
5:00	15	3	6	29	1	86	11	3	0	0	2					
5:15	21	8	15	30	1	104	13	1	0	1	0					
5:30	15	9	10	29	1	111	14	1	0	0	2					
5:45	19	5	3	31	1	70	6	2	1	0	1					
6:00	17	4	4	24	0	71	5	2	0	1	1					

TURNING MOVEMENT COUNTS

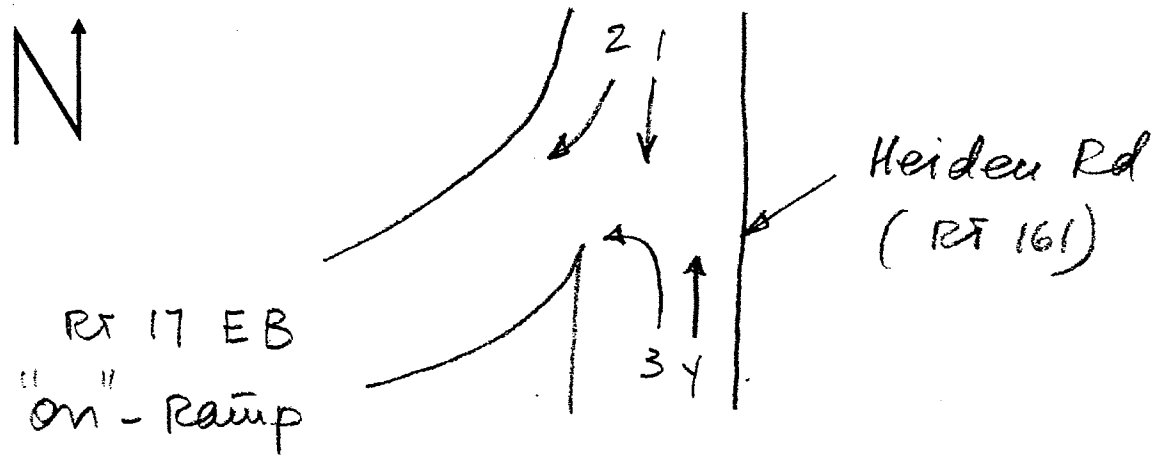
Location: #Y Heiden Rd (RT 161) & RT 17 EB "On"- RAMP

Surveyors: _____ Day/Date: 07.09.10 Friday

Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
4:15	11	19	0	12								
4:30	11	22	0	20								
4:45	8	23	0	26								
5:00	7	25	1	19								
5:15	9	25	0	32								
5:30	14	22	0	22								
5:45	6	30	0	28								
6:00	17	23*	0	19								

Notes:

Sketch



TURNING MOVEMENT COUNTS

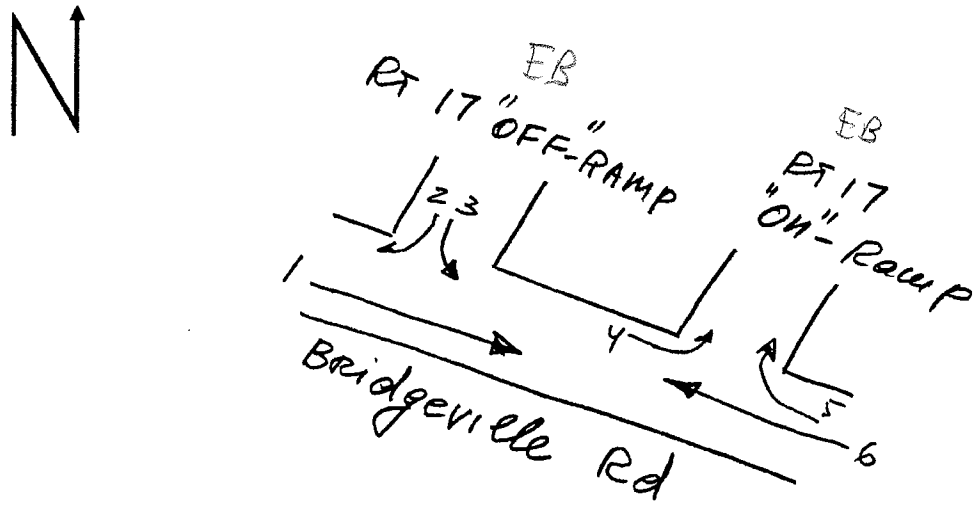
Location: #1 & 2 Bridgeville Rd & RT 17 EB Exit/Entrance Ramps

Surveyors: _____ Day/Date: 07.09.10 Friday

Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
4:15	12	3	10									
4:30	17	2	17									
4:45	15	8	9									
5:00	17	7	10									
5:15	28	3	18									
5:30	17	4	12									
5:45	12	3	17									
6:00	9	4	8									

Notes:

Sketch



TURNING MOVEMENT COUNTS

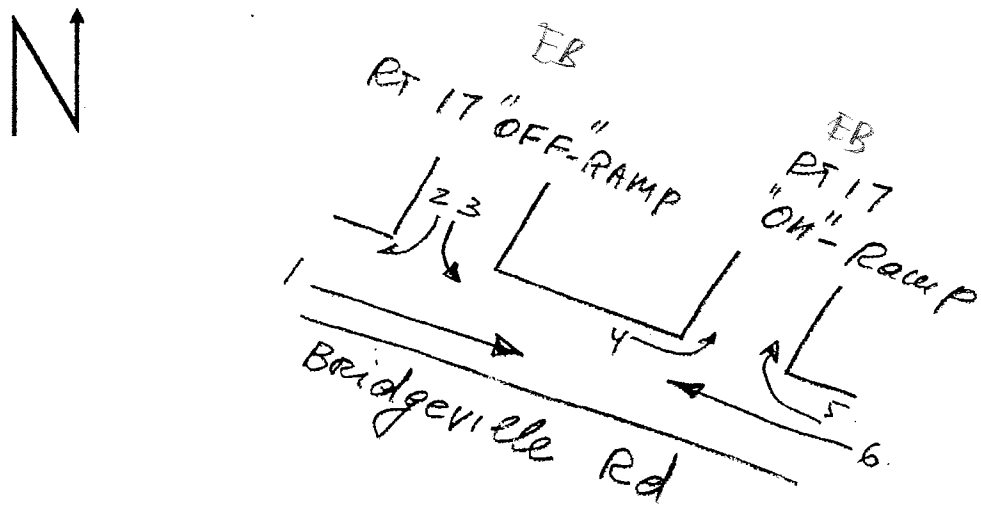
Location: #1 & 2 Bridgeville Rd & RT 17 EB Exit/Entrance Ramps

Surveyors: _____ Day/Date: 07.09.10 Friday

Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
4:15				5	1	14						
4:30				11	2	19						
4:45				5	1	8						
5:00				2	2	6						
5:15				13	0	13						
5:30				5	0	19						
5:45				2	0	4						
6:00				3	0	17						

Notes:

Sketch



TURNING MOVEMENT COUNTS

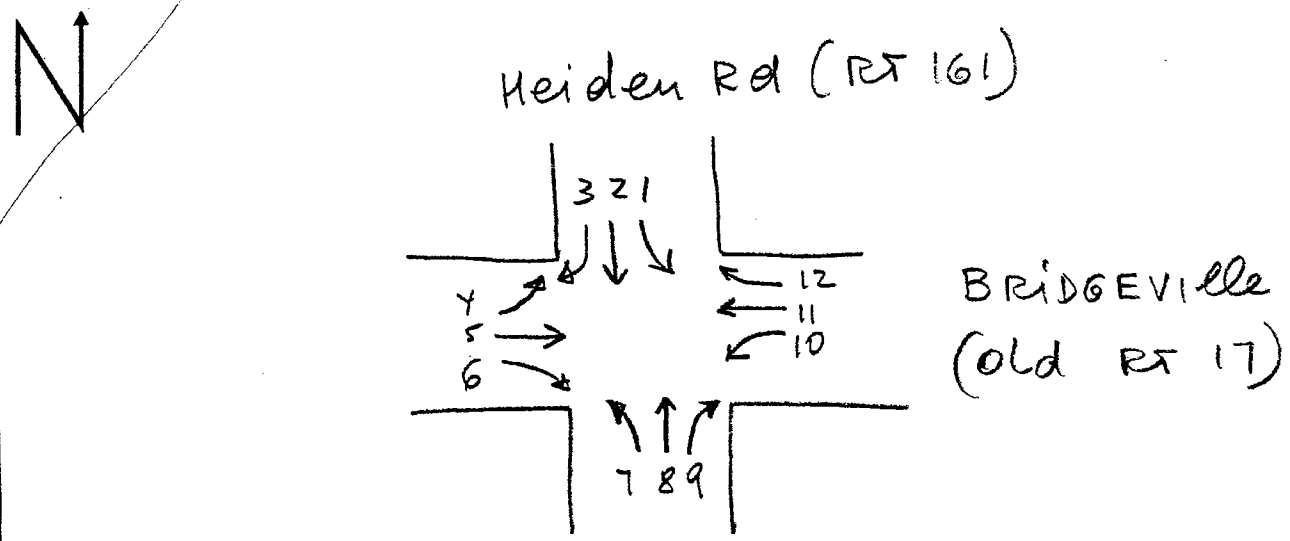
Location: #3 Bridgeville Rd (Old RT 17) & Heiden Rd (RT 161)

Surveyors: _____ Day/Date: 07.09.10 Friday

Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
4:15	2	0	8	11	9	1	0	0	0	0	7	4
4:30	1	0	10	19	12	0	0	0	0	0	7	1
4:45	4	0	4	15	10	0	0	0	0	0	4	11
5:00	1	0	5	14	10	2	0	1	1	0	2	4
5:15	3	0	6	27	14	1	1	0	0	0	7	6
5:30	0	2	13	17	14	0	0	0	0	0	6	5
5:45	2	1	3	20	8	0	0	2	0	1	4	6
6:00	4	1	12	6	10	0	0	1	0	0	4	2

Notes:

Sketch



J. RAP & ASSOCIATES, INC.

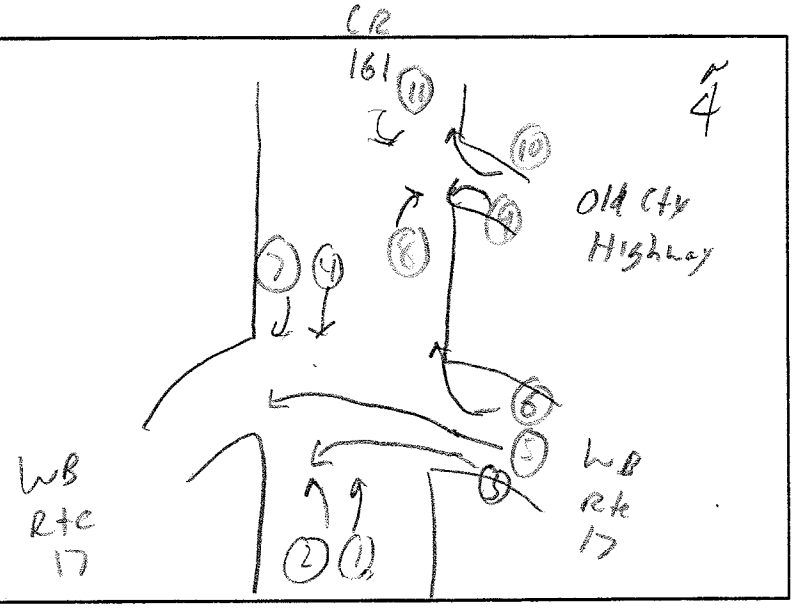
TURNING MOVEMENT COUNTS

Project Sullivan City Location CR161/Old City Highway / WB Rte 17 Date 7/10/10 (Saturday)

Project No. — Weather Sunny Surveyor's Name

COMMENTS

SKETCH:



TIME	TURNING MOVEMENTS															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
7:15	2	4	1	10	0	10	1	0	0	0	1					
7:30	1	2	0	20	0	7	0	1	0	0	0					
7:45	1	6	0	18	1	21	0	1	1	1	0					
8:00	3	2	3	11	0	16	2	0	0	0	0					
8:15	3	2	1	7	0	10	3	0	0	0	0					
8:30	4	1	1	13	1	10	1	1	1	2	1					
8:45	3	3	1	7	0	7	1	0	0	0	0					
9:00	7	3	1	7	1	9	2	1	0	0	0					

TURNING MOVEMENT COUNTS

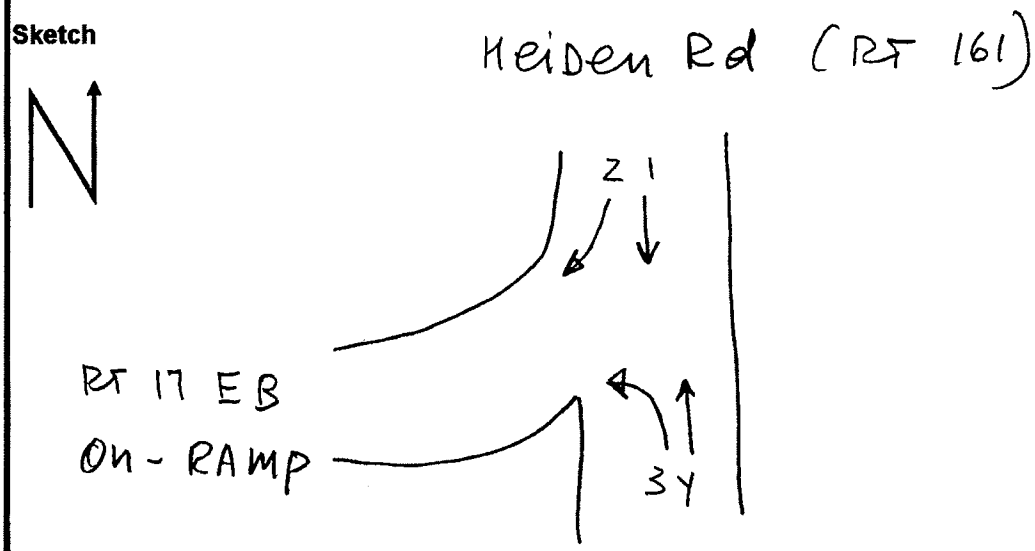
Location: #Y Heiden Rd (RT 161) & RT 17 EB On-Ramp

Surveyors: _____ Day/Date: 08.10.10 (SATURDAY)

Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
7:15	1	11	0	4								
7:30	5	13	0	2								
7:45	5	13	0	7								
8:00	6	8	0	6								
8:15	3	6	0	6								
8:30	2	14	0	6								
8:45	3	6	0	6								
9:00	3	5	0	11								

Notes:

Sketch



TURNING MOVEMENT COUNTS

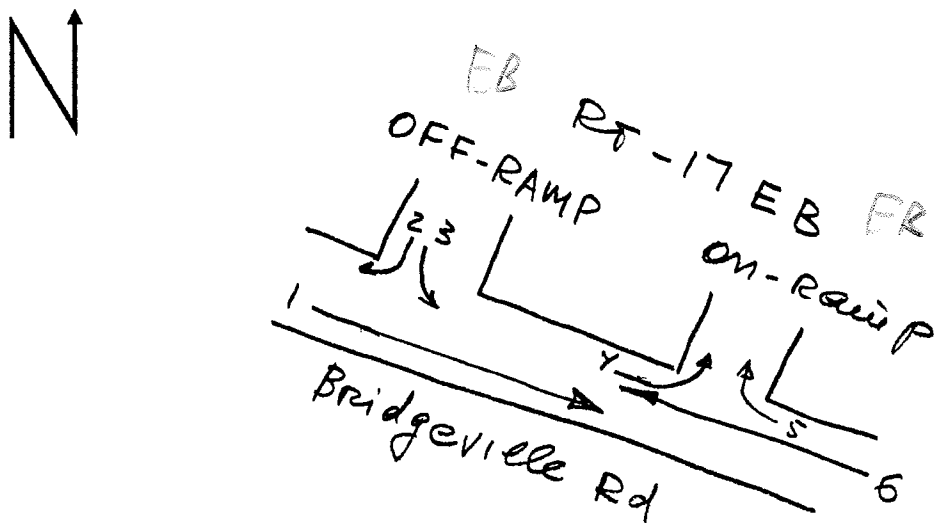
Location: #1 #2 Bridgeville Rd & RT 17 EB OFF/on-Ramps

Surveyors: _____ Day/Date: 07.10.10 (SATURDAY)

Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
7:15	5	4	2									
7:30	4	0	4									
7:45	8	1	6									
8:00	4	1	2									
8:15	6	4	2									
8:30	5	1	5									
8:45	2	0	4									
9:00	5	1	3									

Notes:

Sketch



TURNING MOVEMENT COUNTS

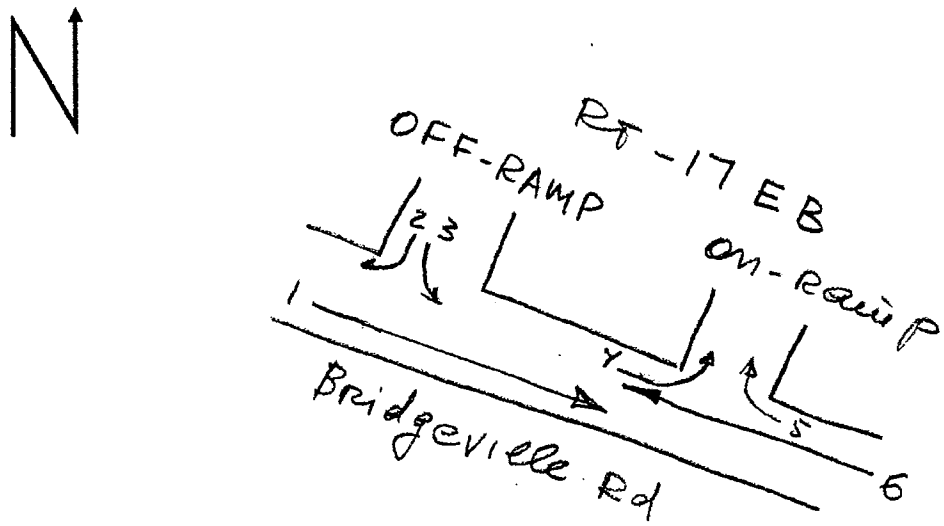
Location: #1 & 2 Bridgeville Rd & RT 17 EB OFF/on-Ramps

Surveyors: _____ Day/Date: 07.10.10 (SATURDAY)

Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
7:15				2	0	4						
7:30				5	0	6						
7:45				3	0	4						
8:00				0	0	7						
8:15				0	0	5						
8:30				1	0	6						
8:45				1	0	4						
9:00				2	0	8						

Notes:

Sketch



TURNING MOVEMENT COUNTS

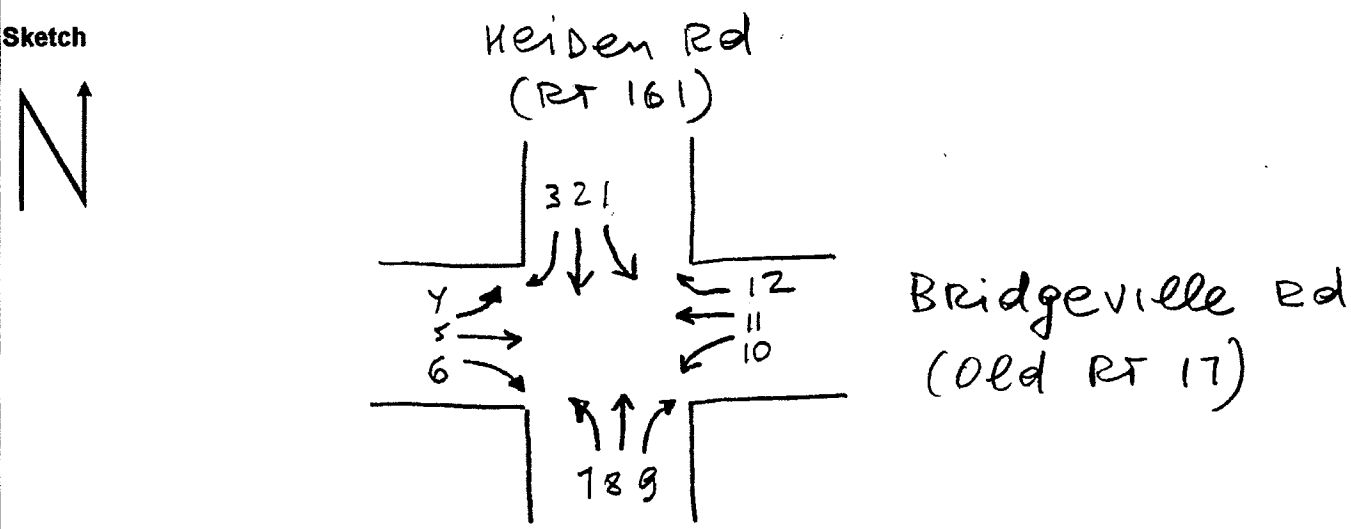
Location: #3 Bridgeville Rd (Old RT 17) & Heiden Rd (RT 161)

Surveyors: _____ Day/Date: 07.10.10 (SATURDAY)

Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
7:15	1	0	0	0	6	0	0	1	0	0	4	3
7:30	2	0	3	1	6	1	1	1	0	0	1	2
7:45	2	0	3	0	11	1	0	0	0	0	2	1
8:00	2	1	3	3	6	0	0	0	0	0	3	3
8:15	0	0	3	4	4	0	0	0	0	0	2	2
8:30	0	0	2	3	7	0	0	0	0	0	5	3
8:45	2	0	1	3	3	0	0	0	0	0	2	3
9:00	0	0	3	4	4	0	0	0	0	0	5	8

Notes:

Sketch



J. RAP & ASSOCIATES, INC.

TURNING MOVEMENT COUNTS

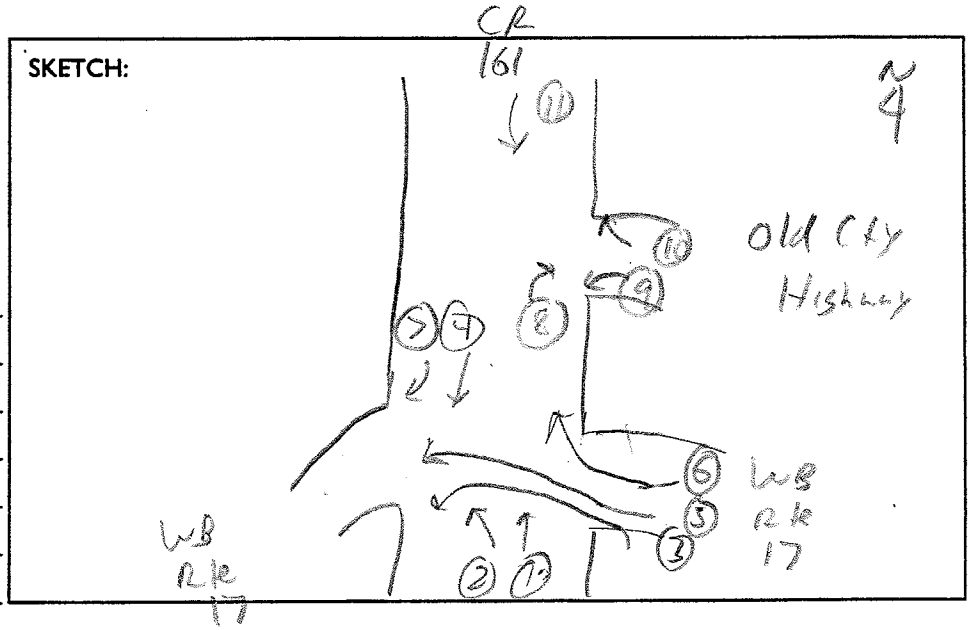
(Sunday)

Project Sullivan City Location CR 161 / Old City Highway / WB Rte 17 Date 7/11/10

Project No. — Weather Sunny Surveyor's Name

COMMENTS

SKETCH:



TIME	TURNING MOVEMENTS															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4:15	16	3	1	59	2	27	14	0	1	0	0					
4:30	10	4	3	50	0	28	14	1	2	1	0					
4:45	14	8	5	53	1	17	17	0	2	0	0					
5:00	8	11	5	55	0	24	12	0	1	1	1					
5:15	11	6	6	52	2	19	6	1	3	0	0					
5:30	5	10	8	54	0	16	7	0	1	0	0					
5:45	15	3	2	36	0	16	13	0	2	1	1					
6:00	17	5	2	29	1	16	7	0	0	0	1					

TURNING MOVEMENT COUNTS

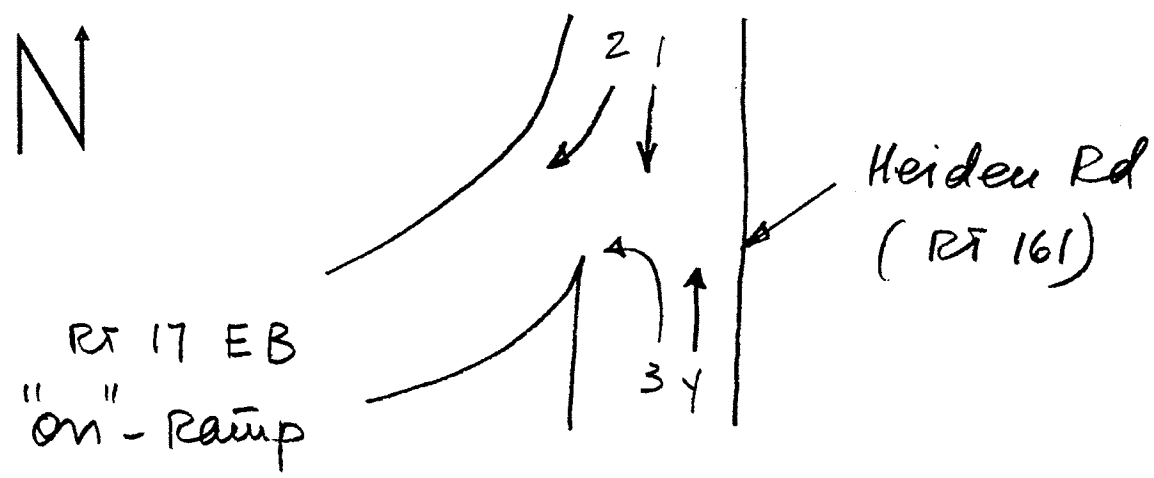
Location: #Y Heiden Rd (RT 161) & RT 17 EB "On"- RAMP

Surveyors: _____ Day/Date: 07. 11. 10 (Sunday)

Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
4:15	8	63	0	18								
4:30	3	50	0	13								
4:45	5	48	2	20								
5:00	6	53	0	16								
5:15	11	48	0	20								
5:30	8	48	0	17								
5:45	7	29	0	21								
6:00	4	43	1	21								

Notes:

Sketch



TURNING MOVEMENT COUNTS

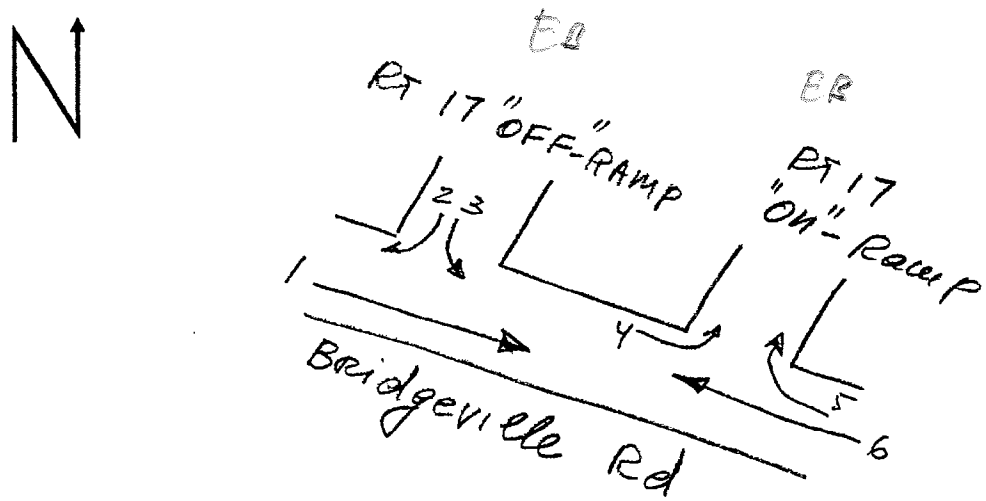
Location: #1 & 2 Bridgeville Rd & RT 17 EB Exit/Entrance Ramps

Surveyors: _____ Day/Date: 07.11.10 (Sunday)

Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
4:15	11	8	16									
4:30	12	2	9									
4:45	9	3	14									
5:00	5	6	11									
5:15	2	5	12									
5:30	8	6	14									
5:45	4	9	22									
6:00	6	7	14									

Notes:

Sketch



TURNING MOVEMENT COUNTS

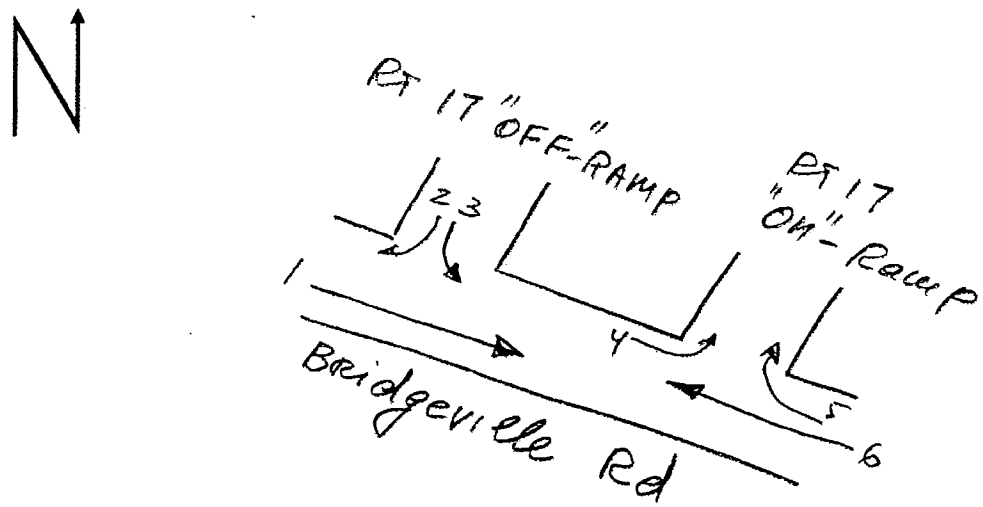
Location: #1 & 2 Bridgeville Rd & RT 17 EB Exit/Entrance Ramps

Surveyors: _____ Day/Date: 07.11.10 (Sunday)

Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
4:15				3	0	8						
4:30				6	0	6						
4:45				2	0	6						
5:00				3	0	4						
5:15				3	0	11						
5:30				4	0	14						
5:45				3	0	7						
6:00				3	0	10						

Notes:

Sketch



TURNING MOVEMENT COUNTS

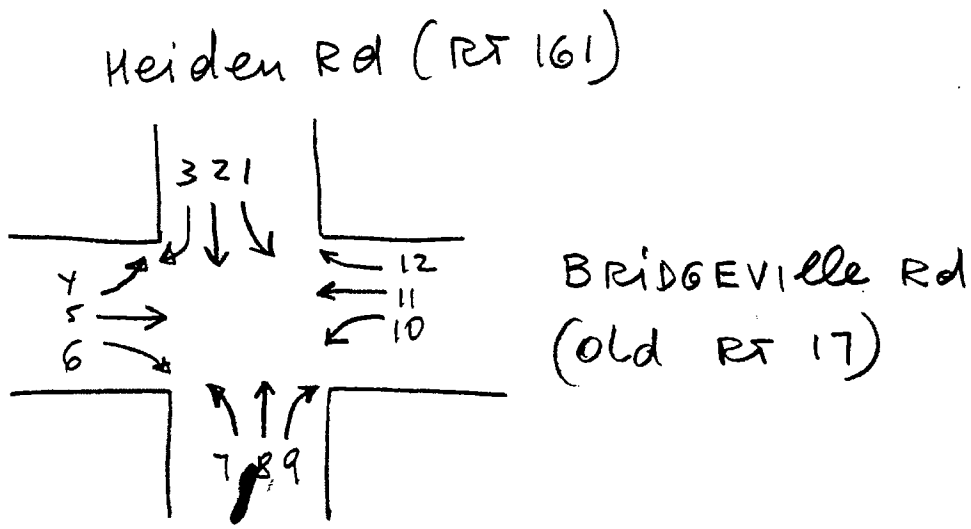
Location: #3 Bridgeville Rd (Old RT 17) & Heiden Rd (RT 161)

Surveyors: _____ Day/Date: 07.11.10 (Sunday)

Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
4:15	3	1	4	14	11	0	1	0	0	0	4	4
4:30	2	0	1	6	11	0	0	0	0	0	4	7
4:45	3	0	2	16	8	1	0	0	0	0	4	6
5:00	5	0	2	9	7	1	0	1	0	0	2	6
5:15	3	1	7	9	5	2	1	1	0	0	3	9
5:30	2	0	6	11	8	0	0	0	0	0	9	6
5:45	5	0	2	18	11	0	0	0	0	0	6	2
6:00	1	0	3	13	6	0	0	0	0	0	6	9

Notes:

Sketch



Appendix B

Capacity Analysis Worksheets

2010 Existing

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	92	51	0	64	20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	92	51	0	64	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	51				143	51
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	51				143	51
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				92	98
cM capacity (veh/h)	1555				850	1017

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	92	51	84
Volume Left	0	0	64
Volume Right	0	0	20
cSH	1700	1700	884
Volume to Capacity	0.05	0.03	0.09
Queue Length 95th (ft)	0	0	8
Control Delay (s)	0.0	0.0	9.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.5
Approach LOS			A

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	16.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	31	125	51	5	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	31	125	51	5	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	56				240	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	56				240	54
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	100
cM capacity (veh/h)	1549				733	1014

Direction, Lane #	EB 1	WB 1
Volume Total	156	56
Volume Left	31	0
Volume Right	0	5
cSH	1549	1700
Volume to Capacity	0.02	0.03
Queue Length 95th (ft)	2	0
Control Delay (s)	1.6	0.0
Lane LOS	A	
Approach Delay (s)	1.6	0.0
Approach LOS		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	105	36	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	105	36	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			0		105	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		105	0
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	100
cM capacity (veh/h)			1623		893	1085

Direction, Lane #	WB 1	NB 1
Volume Total	105	36
Volume Left	0	36
Volume Right	0	0
cSH	1700	893
Volume to Capacity	0.06	0.04
Queue Length 95th (ft)	0	3
Control Delay (s)	0.0	9.2
Lane LOS		A
Approach Delay (s)	0.0	9.2
Approach LOS		A

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	15.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	74	48	3	0	19	26	1	1	1	10	2	36
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	74	48	3	0	19	26	1	1	1	10	2	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	45			51			266	242	50	231	231	32
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45			51			266	242	50	231	231	32
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			100	100	100	99	100	97
cM capacity (veh/h)	1563			1555			637	628	1019	696	637	1042

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	125	45	3	48
Volume Left	74	0	1	10
Volume Right	3	26	1	36
cSH	1563	1555	724	922
Volume to Capacity	0.05	0.00	0.00	0.05
Queue Length 95th (ft)	4	0	0	4
Control Delay (s)	4.5	0.0	10.0	9.1
Lane LOS	A		A	A
Approach Delay (s)	4.5	0.0	10.0	9.1
Approach LOS			A	A

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	31	70	153	48
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	31	70	153	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	309	177	153			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	309	177	153			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	98			
cM capacity (veh/h)	668	866	1428			

Direction, Lane #	NB 1	SB 1
Volume Total	101	201
Volume Left	31	0
Volume Right	0	48
cSH	1428	1700
Volume to Capacity	0.02	0.12
Queue Length 95th (ft)	2	0
Control Delay (s)	2.4	0.0
Lane LOS	A	
Approach Delay (s)	2.4	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	70	0	0	163	38	371
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	70	0	0	163	38	371
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			70		233	70
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			70		233	70
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		95	63
cM capacity (veh/h)			1531		755	993

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	70	163	409
Volume Left	0	0	38
Volume Right	0	0	371
cSH	1700	1700	965
Volume to Capacity	0.04	0.10	0.42
Queue Length 95th (ft)	0	0	54
Control Delay (s)	0.0	0.0	11.5
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.5
Approach LOS			B

Intersection Summary			
Average Delay	7.3		
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	434	7	5	162	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	434	7	5	162	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			441		610	438
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			441		610	438
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1119		456	619

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	441	167	2
Volume Left	0	5	1
Volume Right	7	0	1
cSH	1700	1119	525
Volume to Capacity	0.26	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.3	11.9
Lane LOS		A	B
Approach Delay (s)	0.0	0.3	11.9
Approach LOS			B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	28	23	0	18	7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	28	23	0	18	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	23				51	23
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	23				51	23
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	99
cM capacity (veh/h)	1592				958	1054

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	28	23	25
Volume Left	0	0	18
Volume Right	0	0	7
cSH	1700	1700	983
Volume to Capacity	0.02	0.01	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	4	42	23	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	4	42	23	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	23				73	23
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	23				73	23
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1592				928	1054

Direction, Lane #	EB 1	WB 1
Volume Total	46	23
Volume Left	4	0
Volume Right	0	0
cSH	1592	1700
Volume to Capacity	0.00	0.01
Queue Length 95th (ft)	0	0
Control Delay (s)	0.6	0.0
Lane LOS	A	
Approach Delay (s)	0.6	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	8.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	41	4	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	41	4	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			0		41	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		41	0
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1623		970	1085

Direction, Lane #	WB 1	NB 1
Volume Total	41	4
Volume Left	0	4
Volume Right	0	0
cSH	1700	970
Volume to Capacity	0.02	0.00
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	8.7
Lane LOS		A
Approach Delay (s)	0.0	8.7
Approach LOS		A

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	28	1	0	12	12	0	0	0	4	1	11
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	13	28	1	0	12	12	0	0	0	4	1	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	24			29			84	78	28	72	73	18
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	24			29			84	78	28	72	73	18
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	99
cM capacity (veh/h)	1591			1584			887	805	1046	913	811	1061

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	42	24	0	16
Volume Left	13	0	0	4
Volume Right	1	12	0	11
cSH	1591	1584	1700	1001
Volume to Capacity	0.01	0.00	0.00	0.02
Queue Length 95th (ft)	1	0	0	1
Control Delay (s)	2.3	0.0	0.0	8.7
Lane LOS	A		A	A
Approach Delay (s)	2.3	0.0	0.0	8.7
Approach LOS			A	A

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	18.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	13	12	57	9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	13	12	57	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	100	62	57			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100	62	57			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	99			
cM capacity (veh/h)	892	1004	1547			

Direction, Lane #	NB 1	SB 1
Volume Total	25	66
Volume Left	13	0
Volume Right	0	9
cSH	1547	1700
Volume to Capacity	0.01	0.04
Queue Length 95th (ft)	1	0
Control Delay (s)	3.8	0.0
Lane LOS	A	
Approach Delay (s)	3.8	0.0
Approach LOS		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	11.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	12	0	0	59	7	57
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	12	0	0	59	7	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			12		71	12
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			12		71	12
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	95
cM capacity (veh/h)			1607		933	1069

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	12	59	64
Volume Left	0	0	7
Volume Right	0	0	57
cSH	1700	1700	1052
Volume to Capacity	0.01	0.03	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	13.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	67	2	1	57	2	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	67	2	1	57	2	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			69		127	68
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			69		127	68
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1532		867	995

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	69	58	5
Volume Left	0	1	2
Volume Right	2	0	3
cSH	1700	1532	940
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.1	8.9
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	8.9
Approach LOS			A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	13.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	25	43	0	77	27
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	25	43	0	77	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	43				68	43
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	43				68	43
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				92	97
cM capacity (veh/h)	1566				937	1027

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	25	43	104
Volume Left	0	0	77
Volume Right	0	0	27
cSH	1700	1700	959
Volume to Capacity	0.01	0.03	0.11
Queue Length 95th (ft)	0	0	9
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	13	89	43	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	13	89	43	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	43				158	43
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	43				158	43
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1566				826	1027

Direction, Lane #	EB 1	WB 1
Volume Total	102	43
Volume Left	13	0
Volume Right	0	0
cSH	1566	1700
Volume to Capacity	0.01	0.03
Queue Length 95th (ft)	1	0
Control Delay (s)	1.0	0.0
Lane LOS	A	
Approach Delay (s)	1.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	216	13	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	216	13	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			0		216	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		216	0
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1623		772	1085

Direction, Lane #	WB 1	NB 1
Volume Total	216	13
Volume Left	0	13
Volume Right	0	0
cSH	1700	772
Volume to Capacity	0.13	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	9.7
Lane LOS		A
Approach Delay (s)	0.0	9.7
Approach LOS		A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	51	36	2	0	24	26	1	1	0	11	1	18
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	51	36	2	0	24	26	1	1	0	11	1	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	50			38			194	189	37	176	177	37
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50			38			194	189	37	176	177	37
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	99	100	98
cM capacity (veh/h)	1557			1572			732	683	1035	765	693	1035

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	89	50	2	30
Volume Left	51	0	1	11
Volume Right	2	26	0	18
cSH	1557	1572	706	904
Volume to Capacity	0.03	0.00	0.00	0.03
Queue Length 95th (ft)	3	0	0	3
Control Delay (s)	4.3	0.0	10.1	9.1
Lane LOS	A		B	A
Approach Delay (s)	4.3	0.0	10.1	9.1
Approach LOS			B	A

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	26	50	244	60
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	26	50	244	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	376	274	244			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	376	274	244			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	98			
cM capacity (veh/h)	613	765	1322			

Direction, Lane #	NB 1	SB 1
Volume Total	76	304
Volume Left	26	0
Volume Right	0	60
cSH	1322	1700
Volume to Capacity	0.02	0.18
Queue Length 95th (ft)	2	0
Control Delay (s)	2.8	0.0
Lane LOS	A	
Approach Delay (s)	2.8	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	50	0	0	286	18	96
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	50	0	0	286	18	96
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			50		336	50
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			50		336	50
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	91
cM capacity (veh/h)			1557		659	1018

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	50	286	114
Volume Left	0	0	18
Volume Right	0	0	96
cSH	1700	1700	938
Volume to Capacity	0.03	0.17	0.12
Queue Length 95th (ft)	0	0	10
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	145	1	1	280	6	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	145	1	1	280	6	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			146		428	146
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			146		428	146
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1436		584	902

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	146	281	8
Volume Left	0	1	6
Volume Right	1	0	2
cSH	1700	1436	640
Volume to Capacity	0.09	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	10.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.0	10.7
Approach LOS			B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	102	56	0	125	22
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	102	56	0	125	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	56				158	56
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	56				158	56
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				85	98
cM capacity (veh/h)	1549				833	1011

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	102	56	147
Volume Left	0	0	125
Volume Right	0	0	22
cSH	1700	1700	856
Volume to Capacity	0.06	0.03	0.17
Queue Length 95th (ft)	0	0	15
Control Delay (s)	0.0	0.0	10.1
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.1
Approach LOS			B

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	34	193	56	6	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	34	193	56	6	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	62				320	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	62				320	59
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	100
cM capacity (veh/h)	1541				659	1007

Direction, Lane #	EB 1	WB 1
Volume Total	227	62
Volume Left	34	0
Volume Right	0	6
cSH	1541	1700
Volume to Capacity	0.02	0.04
Queue Length 95th (ft)	2	0
Control Delay (s)	1.3	0.0
Lane LOS	A	
Approach Delay (s)	1.3	0.0
Approach LOS		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	181	40	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	181	40	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			0		181	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		181	0
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		95	100
cM capacity (veh/h)			1623		808	1085

Direction, Lane #	WB 1	NB 1
Volume Total	181	40
Volume Left	0	40
Volume Right	0	0
cSH	1700	808
Volume to Capacity	0.11	0.05
Queue Length 95th (ft)	0	4
Control Delay (s)	0.0	9.7
Lane LOS		A
Approach Delay (s)	0.0	9.7
Approach LOS		A

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	136	53	3	0	21	29	1	1	1	11	2	40
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	136	53	3	0	21	29	1	1	1	11	2	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	50			56			403	376	54	364	364	36
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50			56			403	376	54	364	364	36
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			100			100	100	100	98	100	96
cM capacity (veh/h)	1557			1549			499	506	1012	551	515	1037

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	192	50	3	53
Volume Left	136	0	1	11
Volume Right	3	29	1	40
cSH	1557	1549	604	849
Volume to Capacity	0.09	0.00	0.00	0.06
Queue Length 95th (ft)	7	0	0	5
Control Delay (s)	5.5	0.0	11.0	9.5
Lane LOS	A		B	A
Approach Delay (s)	5.5	0.0	11.0	9.5
Approach LOS			B	A

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	166	53	181	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	166	53	181	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	234				310	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	234				310	144
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1333				683	904

Direction, Lane #	NB 1	SB 1
Volume Total	166	234
Volume Left	0	0
Volume Right	0	181
cSH	1700	1700
Volume to Capacity	0.10	0.14
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	34	132	234	118
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	34	132	234	118
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	493	293	234			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	493	293	234			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	97			
cM capacity (veh/h)	522	746	1333			

Direction, Lane #	NB 1	SB 1
Volume Total	166	352
Volume Left	34	0
Volume Right	0	118
cSH	1333	1700
Volume to Capacity	0.03	0.21
Queue Length 95th (ft)	2	0
Control Delay (s)	1.8	0.0
Lane LOS	A	
Approach Delay (s)	1.8	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	132	0	0	311	42	464
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	132	0	0	311	42	464
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			132		443	132
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			132		443	132
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		93	49
cM capacity (veh/h)			1453		572	917

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	132	311	506
Volume Left	0	0	42
Volume Right	0	0	464
cSH	1700	1700	874
Volume to Capacity	0.08	0.18	0.58
Queue Length 95th (ft)	0	0	95
Control Delay (s)	0.0	0.0	14.6
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.6
Approach LOS			B

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	588	8	6	310	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	588	8	6	310	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			596		914	592
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			596		914	592
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			980		301	506

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	596	316	2
Volume Left	0	6	1
Volume Right	8	0	1
cSH	1700	980	378
Volume to Capacity	0.35	0.01	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.2	14.6
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	14.6
Approach LOS			B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	31	25	0	87	8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	31	25	0	87	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	25				56	25
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	25				56	25
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				91	99
cM capacity (veh/h)	1589				952	1051

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	31	25	95
Volume Left	0	0	87
Volume Right	0	0	8
cSH	1700	1700	959
Volume to Capacity	0.02	0.01	0.10
Queue Length 95th (ft)	0	0	8
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	15.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	4	114	25	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	4	114	25	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	25				147	25
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	25				147	25
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1589				843	1051

Direction, Lane #	EB 1	WB 1
Volume Total	118	25
Volume Left	4	0
Volume Right	0	0
cSH	1589	1700
Volume to Capacity	0.00	0.01
Queue Length 95th (ft)	0	0
Control Delay (s)	0.3	0.0
Lane LOS	A	
Approach Delay (s)	0.3	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	12.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	99	4	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	99	4	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			0		99	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		99	0
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1623		900	1085

Direction, Lane #	WB 1	NB 1
Volume Total	99	4
Volume Left	0	4
Volume Right	0	0
cSH	1700	900
Volume to Capacity	0.06	0.00
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	9.0
Lane LOS		A
Approach Delay (s)	0.0	9.0
Approach LOS		A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	82	31	1	0	13	13	0	0	0	4	1	12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	82	31	1	0	13	13	0	0	0	4	1	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	26			32			228	222	32	215	216	20
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	26			32			228	222	32	215	216	20
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			100	100	100	99	100	99
cM capacity (veh/h)	1588			1580			690	642	1043	712	647	1058

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	114	26	0	17
Volume Left	82	0	0	4
Volume Right	1	13	0	12
cSH	1588	1580	1700	919
Volume to Capacity	0.05	0.00	0.00	0.02
Queue Length 95th (ft)	4	0	0	1
Control Delay (s)	5.4	0.0	0.0	9.0
Lane LOS	A		A	A
Approach Delay (s)	5.4	0.0	0.0	9.0
Approach LOS			A	A

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	95	18	99	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	95	18	99	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	117				162	68
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	117				162	68
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1471				828	996

Direction, Lane #	NB 1	SB 1
Volume Total	95	117
Volume Left	0	0
Volume Right	0	99
cSH	1700	1700
Volume to Capacity	0.06	0.07
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	10.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	14	81	117	64
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	14	81	117	64
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	258	149	117			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	258	149	117			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	99			
cM capacity (veh/h)	724	898	1471			

Direction, Lane #	NB 1	SB 1
Volume Total	95	181
Volume Left	14	0
Volume Right	0	64
cSH	1471	1700
Volume to Capacity	0.01	0.11
Queue Length 95th (ft)	1	0
Control Delay (s)	1.2	0.0
Lane LOS	A	
Approach Delay (s)	1.2	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	81	0	0	172	8	131
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	81	0	0	172	8	131
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			81		253	81
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			81		253	81
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	87
cM capacity (veh/h)			1517		736	979

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	81	172	139
Volume Left	0	0	8
Volume Right	0	0	131
cSH	1700	1700	961
Volume to Capacity	0.05	0.10	0.14
Queue Length 95th (ft)	0	0	13
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	209	2	1	170	2	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	209	2	1	170	2	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			211		382	210
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			211		382	210
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1360		620	830

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	211	171	5
Volume Left	0	1	2
Volume Right	2	0	3
cSH	1700	1360	731
Volume to Capacity	0.12	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.1	10.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	10.0
Approach LOS			A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	21.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	28	48	0	139	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	28	48	0	139	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	48				76	48
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	48				76	48
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				85	97
cM capacity (veh/h)	1559				927	1021

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	28	48	169
Volume Left	0	0	139
Volume Right	0	0	30
cSH	1700	1700	943
Volume to Capacity	0.02	0.03	0.18
Queue Length 95th (ft)	0	0	16
Control Delay (s)	0.0	0.0	9.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.7
Approach LOS			A

Intersection Summary			
Average Delay	6.7		
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	14	152	48	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	14	152	48	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	48				228	48
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	48				228	48
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1559				753	1021

Direction, Lane #	EB 1	WB 1
Volume Total	166	48
Volume Left	14	0
Volume Right	0	0
cSH	1559	1700
Volume to Capacity	0.01	0.03
Queue Length 95th (ft)	1	0
Control Delay (s)	0.7	0.0
Lane LOS	A	
Approach Delay (s)	0.7	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	297	14	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	297	14	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			0		297	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		297	0
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1623		694	1085

Direction, Lane #	WB 1	NB 1
Volume Total	297	14
Volume Left	0	14
Volume Right	0	0
cSH	1700	694
Volume to Capacity	0.17	0.02
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	10.3
Lane LOS		B
Approach Delay (s)	0.0	10.3
Approach LOS		B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	110	40	2	0	27	29	1	1	0	12	1	20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	110	40	2	0	27	29	1	1	0	12	1	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	56			42			323	317	41	303	304	42
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	56			42			323	317	41	303	304	42
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			100			100	100	100	98	100	98
cM capacity (veh/h)	1549			1567			583	557	1030	613	566	1029

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	152	56	2	33
Volume Left	110	0	1	12
Volume Right	2	29	0	20
cSH	1549	1567	570	810
Volume to Capacity	0.07	0.00	0.00	0.04
Queue Length 95th (ft)	6	0	0	3
Control Delay (s)	5.6	0.0	11.3	9.6
Lane LOS	A		B	A
Approach Delay (s)	5.6	0.0	11.3	9.6
Approach LOS			B	A

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	138	33	294	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	138	33	294	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	327				318	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	327				318	180
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1233				675	863

Direction, Lane #	NB 1	SB 1
Volume Total	138	327
Volume Left	0	0
Volume Right	0	294
cSH	1700	1700
Volume to Capacity	0.08	0.19
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	29	109	328	124
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	29	109	328	124
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	557	390	328			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	557	390	328			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	98			
cM capacity (veh/h)	480	658	1232			

Direction, Lane #	NB 1	SB 1
Volume Total	138	452
Volume Left	29	0
Volume Right	0	124
cSH	1232	1700
Volume to Capacity	0.02	0.27
Queue Length 95th (ft)	2	0
Control Delay (s)	1.8	0.0
Lane LOS	A	
Approach Delay (s)	1.8	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	109	0	0	432	20	160
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	109	0	0	432	20	160
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			109		541	109
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			109		541	109
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	83
cM capacity (veh/h)			1481		502	945

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	109	432	180
Volume Left	0	0	20
Volume Right	0	0	160
cSH	1700	1700	860
Volume to Capacity	0.06	0.25	0.21
Queue Length 95th (ft)	0	0	20
Control Delay (s)	0.0	0.0	10.3
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.3
Approach LOS			B

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	268	1	1	425	7	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	268	1	1	425	7	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			269		696	268
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			269		696	268
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1295		408	770

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	269	426	9
Volume Left	0	1	7
Volume Right	1	0	2
cSH	1700	1295	455
Volume to Capacity	0.16	0.00	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	13.1
Lane LOS		A	B
Approach Delay (s)	0.0	0.0	13.1
Approach LOS			B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

2018 Build

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	34	77	68	823	311	22
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	34	77	68	823	311	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			862			
pX, platoon unblocked						
vC, conflicting volume	891				213	68
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	891				213	68
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				58	98
cM capacity (veh/h)	761				741	995

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	111	68	823	333
Volume Left	34	0	0	311
Volume Right	0	0	823	22
cSH	761	1700	1700	753
Volume to Capacity	0.04	0.04	0.48	0.44
Queue Length 95th (ft)	4	0	0	57
Control Delay (s)	3.4	0.0	0.0	13.5
Lane LOS	A			B
Approach Delay (s)	3.4	0.0		13.5
Approach LOS				B

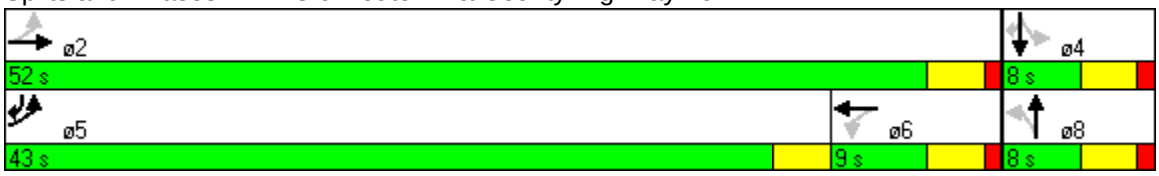
Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations								
Volume (vph)	332	53	21	1	1	22	2	868
Lane Group Flow (vph)	361	61	64	0	3	24	2	943
Turn Type	pm+pt			Perm		Perm		pm+ov
Protected Phases	5	2	6		8		4	5
Permitted Phases	2			8		4		4
Detector Phases	5	2	6	8	8	4	4	5
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Total Split (s)	43.0	52.0	9.0	8.0	8.0	8.0	8.0	43.0
Total Split (%)	71.7%	86.7%	15.0%	13.3%	13.3%	13.3%	13.3%	71.7%
Maximum Green (s)	40.0	48.0	5.0	4.0	4.0	4.0	4.0	40.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Lead/Lag	Lead		Lag					Lead
Lead-Lag Optimize?	Yes		Yes					Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	None	None	None	None
v/c Ratio	0.31	0.03	0.19		0.02	0.12	0.01	0.79
Control Delay	1.5	0.6	12.3		20.7	22.6	22.0	6.0
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	1.5	0.6	12.3		20.7	22.6	22.0	6.0
Queue Length 50th (ft)	0	0	2		0	3	0	10
Queue Length 95th (ft)	33	6	39		8	28	6	30
Internal Link Dist (ft)		782	1512		679		1053	
Turn Bay Length (ft)						50		
Base Capacity (vph)	1315	1776	340		177	207	207	1374
Starvation Cap Reductn	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0
Reduced v/c Ratio	0.27	0.03	0.19		0.02	0.12	0.01	0.69

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 32.3
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Old Route 17 & County Highway 161



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99			0.91			0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00			0.98		0.95	1.00	1.00
Satd. Flow (prot)	1770	1849			1702			1750		1770	1863	1583
Flt Permitted	0.44	1.00			1.00			1.00		1.00	1.00	1.00
Satd. Flow (perm)	815	1849			1702			1779		1863	1863	1583
Volume (vph)	332	53	3	0	21	38	1	1	1	22	2	868
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	361	58	3	0	23	41	1	1	1	24	2	943
RTOR Reduction (vph)	0	1	0	0	34	0	0	1	0	0	0	400
Lane Group Flow (vph)	361	60	0	0	30	0	0	2	0	24	2	543
Turn Type	pm+pt			Perm			Perm			Perm		pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	26.7	26.7			6.3			0.4		0.4	0.4	17.8
Effective Green, g (s)	26.7	26.7			6.3			0.4		0.4	0.4	16.8
Actuated g/C Ratio	0.76	0.76			0.18			0.01		0.01	0.01	0.48
Clearance Time (s)	3.0	4.0			4.0			4.0		4.0	4.0	3.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1066	1407			305			20		21	21	938
v/s Ratio Prot	0.16	0.03			0.02						0.00	c0.27
v/s Ratio Perm	c0.10							0.00		0.01		0.07
v/c Ratio	0.34	0.04			0.10			0.10		1.14	0.10	0.58
Uniform Delay, d1	1.6	1.0			12.0			17.2		17.4	17.2	6.6
Progression Factor	1.00	1.00			1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0			0.1			2.2		244.5	2.0	0.9
Delay (s)	1.8	1.1			12.2			19.4		261.9	19.1	7.5
Level of Service	A	A			B			B		F	B	A
Approach Delay (s)		1.7			12.2			19.4			13.8	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	35.1	Sum of lost time (s)	4.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	34	337	893	345
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	34	337	893	345
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1133		
pX, platoon unblocked						
vC, conflicting volume	1298	446	893			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1298	446	893			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	95			
cM capacity (veh/h)	146	559	755			

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	34	337	446	446	345
Volume Left	34	0	0	0	0
Volume Right	0	0	0	0	345
cSH	755	1700	1700	1700	1700
Volume to Capacity	0.05	0.20	0.26	0.26	0.20
Queue Length 95th (ft)	4	0	0	0	0
Control Delay (s)	10.0	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.9		0.0		
Approach LOS					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	337	0	0	1196	44	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	337	0	0	1196	44	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				982		
pX, platoon unblocked						
vC, conflicting volume			337		935	337
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			337		935	337
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		83	100
cM capacity (veh/h)			1219		264	659

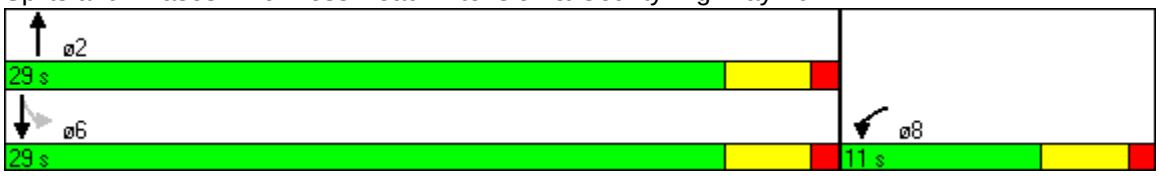
Direction, Lane #	NB 1	SB 1	SB 2	NW 1
Volume Total	337	598	598	44
Volume Left	0	0	0	44
Volume Right	0	0	0	0
cSH	1700	1700	1700	264
Volume to Capacity	0.20	0.35	0.35	0.17
Queue Length 95th (ft)	0	0	0	15
Control Delay (s)	0.0	0.0	0.0	21.3
Lane LOS				C
Approach Delay (s)	0.0	0.0		21.3
Approach LOS				C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Volume (vph)	1	1317	6	1195
Lane Group Flow (vph)	2	1441	7	1299
Turn Type			Perm	
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phases	8	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0
Total Split (s)	11.0	29.0	29.0	29.0
Total Split (%)	27.5%	72.5%	72.5%	72.5%
Maximum Green (s)	7.0	25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min
v/c Ratio	0.03	0.42	0.02	0.38
Control Delay	12.5	0.7	0.7	0.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.5	0.7	0.7	0.6
Queue Length 50th (ft)	1	0	0	0
Queue Length 95th (ft)	10	84	2	71
Internal Link Dist (ft)	524	902		799
Turn Bay Length (ft)			50	
Base Capacity (vph)	93	3455	291	3458
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.02	0.42	0.02	0.38

Intersection Summary
Cycle Length: 40
Actuated Cycle Length: 120
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: Foss Road Extension & County Highway 161



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.93		1.00		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1695		3536		1770	3539
Flt Permitted	0.98		1.00		0.18	1.00
Satd. Flow (perm)	1695		3536		335	3539
Volume (vph)	1	1	1317	8	6	1195
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	1432	9	7	1299
RTOR Reduction (vph)	1	0	0	0	0	0
Lane Group Flow (vph)	1	0	1441	0	7	1299
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	1.2		114.0		114.0	114.0
Effective Green, g (s)	1.2		114.0		114.0	114.0
Actuated g/C Ratio	0.01		0.93		0.93	0.93
Clearance Time (s)	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	17		3272		310	3275
v/s Ratio Prot	c0.00		c0.41			0.37
v/s Ratio Perm					0.02	
v/c Ratio	0.06		0.44		0.02	0.40
Uniform Delay, d1	60.4		0.6		0.4	0.5
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.5		0.1		0.0	0.1
Delay (s)	61.9		0.7		0.4	0.6
Level of Service	E		A		A	A
Approach Delay (s)	61.9		0.7			0.6
Approach LOS	E		A			A

Intersection Summary			
HCM Average Control Delay	0.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	123.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	924	206	557	761	169	276
Lane Group Flow (vph)	1004	224	605	827	184	300
Turn Type		Perm		pm+ov	Prot	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Detector Phases	8	8	2	8	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0
Total Split (s)	27.0	27.0	28.0	27.0	10.0	38.0
Total Split (%)	41.5%	41.5%	43.1%	41.5%	15.4%	58.5%
Maximum Green (s)	23.0	23.0	24.0	23.0	6.0	34.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	None	None	Min
v/c Ratio	0.83	0.32	0.91	0.38	1.08	0.31
Control Delay	26.2	3.9	39.7	2.3	127.9	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	3.9	39.7	2.3	127.9	9.9
Queue Length 50th (ft)	182	0	218	28	~87	62
Queue Length 95th (ft)	#267	39	#399	44	#198	107
Internal Link Dist (ft)	410		399			750
Turn Bay Length (ft)					150	
Base Capacity (vph)	1244	717	697	2202	170	986
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.31	0.87	0.38	1.08	0.30

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 62.8
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Project Site Drive & County Highway 161

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.88	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	1863	2787	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	1863	2787	1770	1863
Volume (vph)	924	206	557	761	169	276
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1004	224	605	827	184	300
RTOR Reduction (vph)	0	145	0	38	0	0
Lane Group Flow (vph)	1004	79	605	789	184	300
Turn Type		Perm		pm+ov	Prot	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	22.2	22.2	22.6	44.8	6.0	32.6
Effective Green, g (s)	22.2	22.2	22.6	44.8	6.0	32.6
Actuated g/C Ratio	0.35	0.35	0.36	0.71	0.10	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1214	560	670	2166	169	967
v/s Ratio Prot	c0.29		c0.32	0.13	c0.10	0.16
v/s Ratio Perm		0.05		0.15		
v/c Ratio	0.83	0.14	0.90	0.36	1.09	0.31
Uniform Delay, d1	18.5	13.8	19.1	3.5	28.4	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.1	15.5	0.1	94.9	0.2
Delay (s)	23.3	13.9	34.6	3.6	123.3	8.8
Level of Service	C	B	C	A	F	A
Approach Delay (s)	21.6		16.7			52.4
Approach LOS	C		B			D

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	4	39	35	662	342	8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	4	39	35	662	342	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			862			
pX, platoon unblocked						
vC, conflicting volume	697				82	35
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	697				82	35
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				63	99
cM capacity (veh/h)	899				916	1038

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	43	35	662	350
Volume Left	4	0	0	342
Volume Right	0	0	662	8
cSH	899	1700	1700	918
Volume to Capacity	0.00	0.02	0.39	0.38
Queue Length 95th (ft)	0	0	0	45
Control Delay (s)	0.9	0.0	0.0	11.3
Lane LOS	A			B
Approach Delay (s)	0.9	0.0		11.3
Approach LOS				B

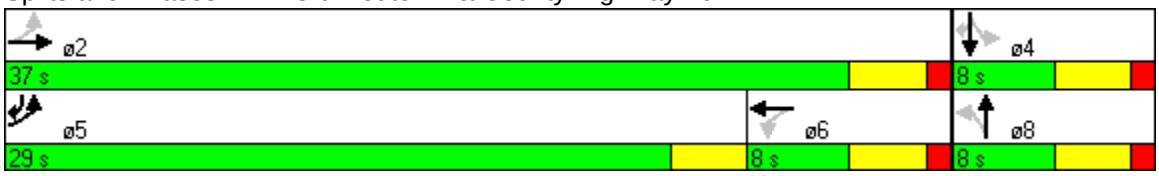
Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	SBL	SBT	SBR	ø8
Lane Configurations							
Volume (vph)	349	31	13	14	1	685	
Lane Group Flow (vph)	379	35	42	15	1	745	
Turn Type	pm+pt			Perm		pm+ov	
Protected Phases	5	2	6		4	5	8
Permitted Phases	2			4		4	
Detector Phases	5	2	6	4	4	5	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Total Split (s)	29.0	37.0	8.0	8.0	8.0	29.0	8.0
Total Split (%)	64.4%	82.2%	17.8%	17.8%	17.8%	64.4%	18%
Maximum Green (s)	26.0	33.0	4.0	4.0	4.0	26.0	4.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Lead/Lag	Lead		Lag			Lead	
Lead-Lag Optimize?	Yes		Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	None	None	None
v/c Ratio	0.34	0.02	0.14	0.06	0.00	0.64	
Control Delay	1.9	0.9	10.2	16.6	16.0	3.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	1.9	0.9	10.2	16.6	16.0	3.1	
Queue Length 50th (ft)	0	0	1	1	0	0	
Queue Length 95th (ft)	38	5	24	16	3	15	
Internal Link Dist (ft)		782	1512		1053		
Turn Bay Length (ft)				50			
Base Capacity (vph)	1181	1756	306	235	235	1306	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.32	0.02	0.14	0.06	0.00	0.57	

Intersection Summary

Cycle Length: 45
Actuated Cycle Length: 26.3
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Old Route 17 & County Highway 161



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00					1.00	1.00	1.00
Frt	1.00	1.00			0.91					1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1855			1695					1770	1863	1583
Flt Permitted	0.46	1.00			1.00					1.00	1.00	1.00
Satd. Flow (perm)	856	1855			1695					1863	1863	1583
Volume (vph)	349	31	1	0	13	26	0	0	0	14	1	685
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	379	34	1	0	14	28	0	0	0	15	1	745
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	0	422
Lane Group Flow (vph)	379	35	0	0	18	0	0	0	0	15	1	323
Turn Type	pm+pt			Perm			Perm			Perm		pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	21.0	21.0			4.7					0.5	0.5	13.8
Effective Green, g (s)	21.0	21.0			4.7					0.5	0.5	12.8
Actuated g/C Ratio	0.71	0.71			0.16					0.02	0.02	0.43
Clearance Time (s)	3.0	4.0			4.0					4.0	4.0	3.0
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	990	1321			270					32	32	902
v/s Ratio Prot	0.16	0.02			0.01						0.00	c0.15
v/s Ratio Perm	c0.11									0.01		0.05
v/c Ratio	0.38	0.03			0.07					0.47	0.03	0.36
Uniform Delay, d1	1.9	1.2			10.5					14.4	14.3	5.6
Progression Factor	1.00	1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0			0.1					10.5	0.4	0.2
Delay (s)	2.2	1.3			10.6					24.8	14.7	5.8
Level of Service	A	A			B					C	B	A
Approach Delay (s)		2.1			10.6			0.0			6.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	29.5	Sum of lost time (s)	4.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	14	360	700	265
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	14	360	700	265
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1133		
pX, platoon unblocked						
vC, conflicting volume	1088	350	700			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1088	350	700			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	98			
cM capacity (veh/h)	207	646	893			

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	14	360	350	350	265
Volume Left	14	0	0	0	0
Volume Right	0	0	0	0	265
cSH	893	1700	1700	1700	1700
Volume to Capacity	0.02	0.21	0.21	0.21	0.16
Queue Length 95th (ft)	1	0	0	0	0
Control Delay (s)	9.1	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.3		0.0		
Approach LOS					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	360	0	0	957	8	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	360	0	0	957	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				982		
pX, platoon unblocked						
vC, conflicting volume			360		838	360
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			360		838	360
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1195		305	637

Direction, Lane #	NB 1	SB 1	SB 2	NW 1
Volume Total	360	478	478	8
Volume Left	0	0	0	8
Volume Right	0	0	0	0
cSH	1700	1700	1700	305
Volume to Capacity	0.21	0.28	0.28	0.03
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	17.1
Lane LOS				C
Approach Delay (s)	0.0	0.0		17.1
Approach LOS				C

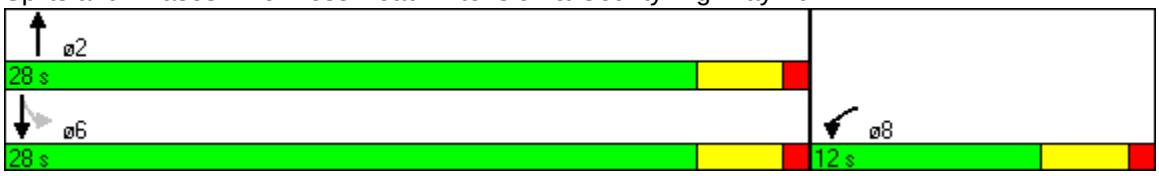
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Volume (vph)	2	1199	1	955
Lane Group Flow (vph)	5	1305	1	1038
Turn Type			Perm	
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phases	8	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0
Total Split (s)	12.0	28.0	28.0	28.0
Total Split (%)	30.0%	70.0%	70.0%	70.0%
Maximum Green (s)	8.0	24.0	24.0	24.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min
v/c Ratio	0.06	0.38	0.00	0.30
Control Delay	11.8	0.7	1.0	0.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.8	0.7	1.0	0.6
Queue Length 50th (ft)	2	0	0	0
Queue Length 95th (ft)	13	75	1	54
Internal Link Dist (ft)	524	902		799
Turn Bay Length (ft)			50	
Base Capacity (vph)	109	3445	303	3445
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.05	0.38	0.00	0.30

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 117.3
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: Foss Road Extension & County Highway 161



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.92		1.00		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1678		3538		1770	3539
Flt Permitted	0.98		1.00		0.21	1.00
Satd. Flow (perm)	1678		3538		387	3539
Volume (vph)	2	3	1199	2	1	955
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	3	1303	2	1	1038
RTOR Reduction (vph)	3	0	0	0	0	0
Lane Group Flow (vph)	2	0	1305	0	1	1038
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	1.3		111.1		111.1	111.1
Effective Green, g (s)	1.3		111.1		111.1	111.1
Actuated g/C Ratio	0.01		0.92		0.92	0.92
Clearance Time (s)	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	18		3265		357	3266
v/s Ratio Prot	c0.00		c0.37			0.29
v/s Ratio Perm					0.00	
v/c Ratio	0.11		0.40		0.00	0.32
Uniform Delay, d1	59.0		0.6		0.4	0.5
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	2.8		0.1		0.0	0.1
Delay (s)	61.8		0.6		0.4	0.6
Level of Service	E		A		A	A
Approach Delay (s)	61.8		0.6			0.6
Approach LOS	E		A			A

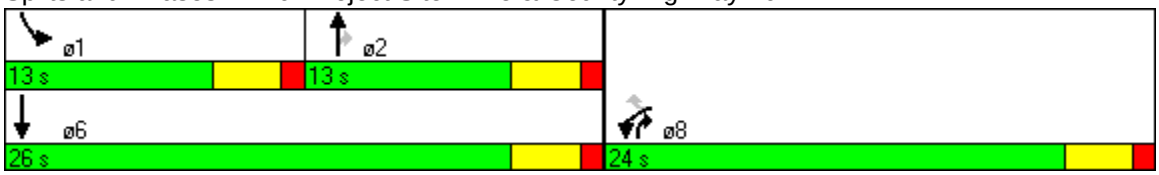
Intersection Summary			
HCM Average Control Delay	0.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	120.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	817	182	172	1030	229	139
Lane Group Flow (vph)	888	198	187	1120	249	151
Turn Type		Perm		pm+ov	Prot	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Detector Phases	8	8	2	8	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0
Total Split (s)	24.0	24.0	13.0	24.0	13.0	26.0
Total Split (%)	48.0%	48.0%	26.0%	48.0%	26.0%	52.0%
Maximum Green (s)	20.0	20.0	9.0	20.0	9.0	22.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	None	None	Min
v/c Ratio	0.66	0.27	0.58	0.58	0.77	0.18
Control Delay	14.8	3.1	27.0	4.6	39.1	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	3.1	27.0	4.6	39.1	9.3
Queue Length 50th (ft)	103	0	50	49	70	25
Queue Length 95th (ft)	153	29	#103	84	#168	53
Internal Link Dist (ft)	410		399			750
Turn Bay Length (ft)					150	
Base Capacity (vph)	1402	763	345	1942	332	839
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.26	0.54	0.58	0.75	0.18

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 48
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Project Site Drive & County Highway 161



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.88	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	1863	2787	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	1863	2787	1770	1863
Volume (vph)	817	182	172	1030	229	139
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	888	198	187	1120	249	151
RTOR Reduction (vph)	0	120	0	136	0	0
Lane Group Flow (vph)	888	78	187	984	249	151
Turn Type		Perm		pm+ov	Prot	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	18.9	18.9	8.3	27.2	8.8	21.1
Effective Green, g (s)	18.9	18.9	8.3	27.2	8.8	21.1
Actuated g/C Ratio	0.39	0.39	0.17	0.57	0.18	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1352	623	322	1812	325	819
v/s Ratio Prot	c0.26		0.10	c0.21	c0.14	0.08
v/s Ratio Perm		0.05		0.14		
v/c Ratio	0.66	0.13	0.58	0.54	0.77	0.18
Uniform Delay, d1	11.9	9.3	18.3	6.5	18.6	8.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	2.7	0.3	10.3	0.1
Delay (s)	13.1	9.4	20.9	6.8	28.9	8.3
Level of Service	B	A	C	A	C	A
Approach Delay (s)	12.4		8.9			21.1
Approach LOS	B		A			C

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	14	23	60	996	346	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	14	23	60	996	346	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			862			
pX, platoon unblocked						
vC, conflicting volume	1056				111	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1056				111	60
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				60	97
cM capacity (veh/h)	659				867	1005

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	37	60	996	376
Volume Left	14	0	0	346
Volume Right	0	0	996	30
cSH	659	1700	1700	877
Volume to Capacity	0.02	0.04	0.59	0.43
Queue Length 95th (ft)	2	0	0	54
Control Delay (s)	4.1	0.0	0.0	12.2
Lane LOS	A			B
Approach Delay (s)	4.1	0.0		12.2
Approach LOS				B

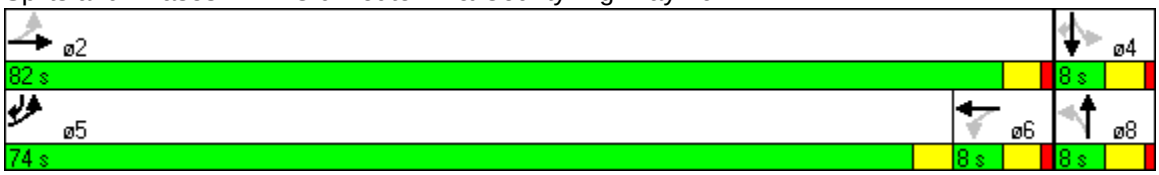
Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations								
Volume (vph)	327	40	27	1	1	25	1	1029
Lane Group Flow (vph)	355	45	71	0	2	27	1	1118
Turn Type	pm+pt			Perm		Perm		pm+ov
Protected Phases	5	2	6		8		4	5
Permitted Phases	2			8		4		4
Detector Phases	5	2	6	8	8	4	4	5
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Total Split (s)	74.0	82.0	8.0	8.0	8.0	8.0	8.0	74.0
Total Split (%)	82.2%	91.1%	8.9%	8.9%	8.9%	8.9%	8.9%	82.2%
Maximum Green (s)	71.0	78.0	4.0	4.0	4.0	4.0	4.0	71.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Lead/Lag	Lead		Lag					Lead
Lead-Lag Optimize?	Yes		Yes					Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	None	Min	Min	None
v/c Ratio	0.30	0.03	0.38		0.01	0.17	0.01	0.86
Control Delay	2.3	1.1	26.7		36.5	37.2	37.0	9.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	2.3	1.1	26.7		36.5	37.2	37.0	9.8
Queue Length 50th (ft)	19	2	8		1	8	0	46
Queue Length 95th (ft)	29	5	#77		8	42	6	97
Internal Link Dist (ft)		782	1512		679		1053	
Turn Bay Length (ft)						50		
Base Capacity (vph)	1393	1604	186		135	160	160	1356
Starvation Cap Reductn	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0
Reduced v/c Ratio	0.25	0.03	0.38		0.01	0.17	0.01	0.82

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 55.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Old Route 17 & County Highway 161



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99			0.92			1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00			0.98		0.95	1.00	1.00
Satd. Flow (prot)	1770	1850			1714			1817		1770	1863	1583
Flt Permitted	0.43	1.00			1.00			0.86		0.85	1.00	1.00
Satd. Flow (perm)	801	1850			1714			1594		1585	1863	1583
Volume (vph)	327	40	2	0	27	39	1	1	0	25	1	1029
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	355	43	2	0	29	42	1	1	0	27	1	1118
RTOR Reduction (vph)	0	0	0	0	38	0	0	0	0	0	0	151
Lane Group Flow (vph)	355	45	0	0	33	0	0	2	0	27	1	967
Turn Type	pm+pt			Perm			Perm			Perm		pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	41.0	41.0			5.3			4.7		4.7	4.7	37.4
Effective Green, g (s)	41.0	41.0			5.3			4.7		4.7	4.7	36.4
Actuated g/C Ratio	0.76	0.76			0.10			0.09		0.09	0.09	0.68
Clearance Time (s)	3.0	4.0			4.0			4.0		4.0	4.0	3.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1184	1412			169			140		139	163	1191
v/s Ratio Prot	0.18	0.02			0.02						0.00	c0.48
v/s Ratio Perm	c0.05							0.00		0.02		0.13
v/c Ratio	0.30	0.03			0.20			0.01		0.19	0.01	0.81
Uniform Delay, d1	2.1	1.5			22.2			22.4		22.7	22.4	6.2
Progression Factor	1.00	1.00			1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0			0.6			0.0		0.7	0.0	4.3
Delay (s)	2.2	1.5			22.8			22.4		23.4	22.4	10.5
Level of Service	A	A			C			C		C	C	B
Approach Delay (s)		2.1			22.8			22.4			10.8	
Approach LOS		A			C			C			B	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	4.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	29	336	1054	377
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	29	336	1054	377
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1133		
pX, platoon unblocked						
vC, conflicting volume	1448	527	1054			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1448	527	1054			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	96			
cM capacity (veh/h)	117	496	656			

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	29	336	527	527	377
Volume Left	29	0	0	0	0
Volume Right	0	0	0	0	377
cSH	656	1700	1700	1700	1700
Volume to Capacity	0.04	0.20	0.31	0.31	0.22
Queue Length 95th (ft)	3	0	0	0	0
Control Delay (s)	10.7	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	0.9		0.0		
Approach LOS					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	336	0	0	1411	20	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	336	0	0	1411	20	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				982		
pX, platoon unblocked						
vC, conflicting volume			336		1042	336
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			336		1042	336
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		91	100
cM capacity (veh/h)			1220		225	660

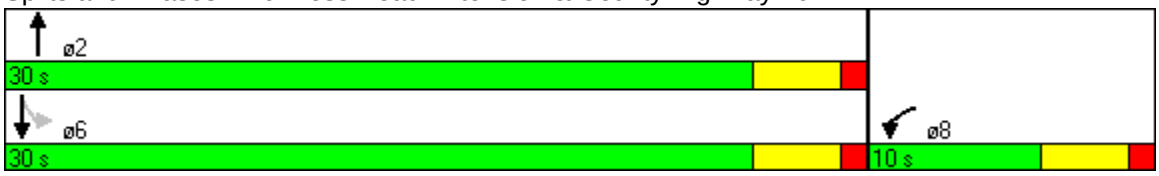
Direction, Lane #	NB 1	SB 1	SB 2	NW 1
Volume Total	336	706	706	20
Volume Left	0	0	0	20
Volume Right	0	0	0	0
cSH	1700	1700	1700	225
Volume to Capacity	0.20	0.42	0.42	0.09
Queue Length 95th (ft)	0	0	0	7
Control Delay (s)	0.0	0.0	0.0	22.5
Lane LOS				C
Approach Delay (s)	0.0	0.0		22.5
Approach LOS				C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Volume (vph)	7	1073	1	1405
Lane Group Flow (vph)	10	1167	1	1527
Turn Type			Perm	
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phases	8	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0
Total Split (s)	10.0	30.0	30.0	30.0
Total Split (%)	25.0%	75.0%	75.0%	75.0%
Maximum Green (s)	6.0	26.0	26.0	26.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min
v/c Ratio	0.11	0.34	0.00	0.45
Control Delay	15.7	0.8	1.0	1.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.7	0.8	1.0	1.0
Queue Length 50th (ft)	6	0	0	0
Queue Length 95th (ft)	19	66	1	101
Internal Link Dist (ft)	524	902		799
Turn Bay Length (ft)			50	
Base Capacity (vph)	91	3419	382	3419
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.11	0.34	0.00	0.45

Intersection Summary
Cycle Length: 40
Actuated Cycle Length: 112.5
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: Foss Road Extension & County Highway 161



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.97		1.00		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1743		3539		1770	3539
Flt Permitted	0.96		1.00		0.24	1.00
Satd. Flow (perm)	1743		3539		448	3539
Volume (vph)	7	2	1073	1	1	1405
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	2	1166	1	1	1527
RTOR Reduction (vph)	2	0	0	0	0	0
Lane Group Flow (vph)	8	0	1167	0	1	1527
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	1.6		105.7		105.7	105.7
Effective Green, g (s)	1.6		105.7		105.7	105.7
Actuated g/C Ratio	0.01		0.92		0.92	0.92
Clearance Time (s)	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	24		3244		411	3244
v/s Ratio Prot	c0.00		0.33			c0.43
v/s Ratio Perm					0.00	
v/c Ratio	0.33		0.36		0.00	0.47
Uniform Delay, d1	56.3		0.6		0.4	0.7
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	8.1		0.1		0.0	0.1
Delay (s)	64.4		0.7		0.4	0.8
Level of Service	E		A		A	A
Approach Delay (s)	64.4		0.7			0.8
Approach LOS	E		A			A

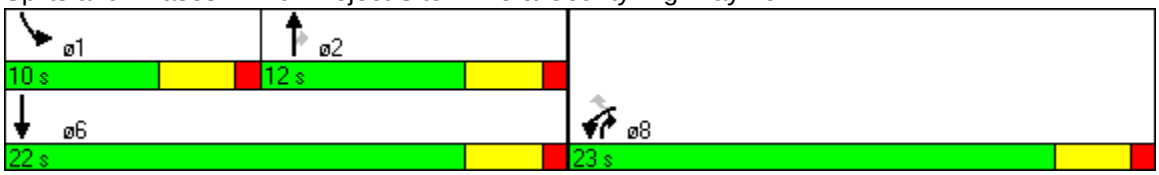
Intersection Summary			
HCM Average Control Delay	1.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	115.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1014	226	238	838	186	392
Lane Group Flow (vph)	1102	246	259	911	202	426
Turn Type		Perm		pm+ov	Prot	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Detector Phases	8	8	2	8	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0
Total Split (s)	23.0	23.0	12.0	23.0	10.0	22.0
Total Split (%)	51.1%	51.1%	26.7%	51.1%	22.2%	48.9%
Maximum Green (s)	19.0	19.0	8.0	19.0	6.0	18.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	None	None	Min
v/c Ratio	0.76	0.30	0.78	0.46	0.85	0.57
Control Delay	15.6	2.7	38.1	3.0	55.9	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	2.7	38.1	3.0	55.9	14.2
Queue Length 50th (ft)	115	0	65	26	52	81
Queue Length 95th (ft)	175	29	#160	46	#144	149
Internal Link Dist (ft)	410		399			750
Turn Bay Length (ft)					150	
Base Capacity (vph)	1449	811	332	2001	237	748
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.30	0.78	0.46	0.85	0.57

Intersection Summary

Cycle Length: 45
Actuated Cycle Length: 44.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Project Site Drive & County Highway 161



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.88	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	1863	2787	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	1863	2787	1770	1863
Volume (vph)	1014	226	238	838	186	392
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1102	246	259	911	202	426
RTOR Reduction (vph)	0	143	0	105	0	0
Lane Group Flow (vph)	1102	103	259	806	202	426
Turn Type		Perm		pm+ov	Prot	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	18.8	18.8	8.0	26.8	6.0	18.0
Effective Green, g (s)	18.8	18.8	8.0	26.8	6.0	18.0
Actuated g/C Ratio	0.42	0.42	0.18	0.60	0.13	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1441	664	333	1916	237	749
v/s Ratio Prot	c0.32		c0.14	0.18	c0.11	0.23
v/s Ratio Perm		0.07		0.11		
v/c Ratio	0.76	0.16	0.78	0.42	0.85	0.57
Uniform Delay, d1	11.1	8.1	17.6	4.8	19.0	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.1	10.9	0.2	24.4	1.0
Delay (s)	13.6	8.2	28.4	5.0	43.3	11.4
Level of Service	B	A	C	A	D	B
Approach Delay (s)	12.6		10.2			21.7
Approach LOS	B		B			C

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	44.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCS2000: Ramps and Ramp Junctions Release 4.1f

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Merge Analysis

Analyst:	SLW
Agency/Co.:	Tetra Tech Rizzo
Date performed:	8/5/10
Analysis time period:	Friday PM Peak Hour
Freeway/Dir of Travel:	Eastbound State Route 17
Junction:	Exit 107 EB On-Ramp
Jurisdiction:	Thompson, NY
Analysis Year:	2018 Build Conditions
Description:	Stockbridge-Munsee Casino [BFri

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	60.0	mph
Volume on freeway	2391	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	857	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	333	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1200	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2391	857	333	vph
Peak-hour factor, PHF	1.00	1.00	1.00	
Peak 15-min volume, v15	598	258	58	v
Trucks and buses	1	5	8	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.995	0.976	0.962	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2403	878	346	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2403 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3281	4600	No
v_{R12}	3281	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 25.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.371	
Space mean speed in ramp influence area,	S_R = 53.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 53.3	mph

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Merge Analysis

Analyst:	SLW
Agency/Co.:	Tetra Tech Rizzo
Date performed:	8/5/10
Analysis time period:	Friday PM Peak Hour
Freeway/Dir of Travel:	Westbound State Route 17
Junction:	Exit 107 WB On-Ramp
Jurisdiction:	Thompson, NY
Analysis Year:	2018 Build Conditions
Description:	Stockbridge-Munsee Casino [BFri

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	60.0	mph
Volume on freeway	2966	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	379	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1030	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1400	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2966	379	1030	vph
Peak-hour factor, PHF	1.00	1.00	1.00	
Peak 15-min volume, v15	742	95	258	v
Trucks and buses	1	9	4	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.995	0.957	0.980	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2981	396	1051	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2981 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3377	4600	No
v_{R12}	3377	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 27.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.386	
Space mean speed in ramp influence area,	S_R = 53.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 53.0	mph

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Merge Analysis

Analyst:	SLW
Agency/Co.:	Tetra Tech Rizzo
Date performed:	8/5/10
Analysis time period:	Saturday PM Peak Hour
Freeway/Dir of Travel:	Eastbound State Route 17
Junction:	Exit 107 EB On-Ramp
Jurisdiction:	Thompson, NY
Analysis Year:	2018 Build Conditions
Description:	Stockbridge-Munsee Casino [BSat

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	60.0	mph
Volume on freeway	2314	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	666	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	350	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1200	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2314	666	350	vph
Peak-hour factor, PHF	1.00	1.00	1.00	
Peak 15-min volume, v15	579	167	88	v
Trucks and buses	1	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.995	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2326	669	352	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2326 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2995	4600	No
v_{R12}	2995	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.345	
Space mean speed in ramp influence area,	S_R = 53.8	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 53.8	mph

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Merge Analysis

Analyst:	SLW
Agency/Co.:	Tetra Tech Rizzo
Date performed:	8/5/10
Analysis time period:	Saturday PM Peak Hour
Freeway/Dir of Travel:	Westbound State Route 17
Junction:	Exit 107 WB On-Ramp
Jurisdiction:	Thompson, NY
Analysis Year:	2018 Build Conditions
Description:	Stockbridge-Munsee Casino [BSat

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	60.0	mph
Volume on freeway	2313	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	279	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	849	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1400	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2313	279	849	vph
Peak-hour factor, PHF	1.00	1.00	1.00	
Peak 15-min volume, v15	773	70	262	v
Trucks and buses	1	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.995	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2325	280	853	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2325 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2605	4600	No
v_{R12}	2605	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.325	
Space mean speed in ramp influence area,	S_R = 54.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 54.2	mph

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Merge Analysis

Analyst:	SLW
Agency/Co.:	Tetra Tech Rizzo
Date performed:	8/5/10
Analysis time period:	Sunday PM Peak Hour
Freeway/Dir of Travel:	Eastbound State Route 17
Junction:	Exit 107 EB On-Ramp
Jurisdiction:	Thompson, NY
Analysis Year:	2018 Build Conditions
Description:	Stockbridge-Munsee Casino [BSun

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	60.0	mph
Volume on freeway	3201	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	1010	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	376	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1200	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3201	1010	376	vph
Peak-hour factor, PHF	1.00	1.00	1.00	
Peak 15-min volume, v15		253	94	v
Trucks and buses	1	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.995	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3217	1020	380	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3217 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4237	4600	No
v_{R12}	4237	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 32.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.537	
Space mean speed in ramp influence area,	S_R = 50.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 50.3	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

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Merge Analysis

Analyst:	SLW
Agency/Co.:	Tetra Tech Rizzo
Date performed:	8/6/10
Analysis time period:	Sunday PM Peak Hour
Freeway/Dir of Travel:	Westbound State Route 17
Junction:	Exit 107 WB On-Ramp
Jurisdiction:	Thompson, NY
Analysis Year:	2018 Build Conditions
Description:	Stockbridge-Munsee Casino [BSun

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	60.0	mph
Volume on freeway	2058	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	406	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	758	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1400	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2058	406	758	vph
Peak-hour factor, PHF	1.00	1.00	1.00	
Peak 15-min volume, v15	515	102	190	v
Trucks and buses	1	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.995	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2068	410	766	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2068 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2478	4600	No
v_{R12}	2478	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.318	
Space mean speed in ramp influence area,	S_R = 54.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 54.3	mph

No Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	223	56	3	0	22	35	1	1	1	17	2	1036
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	223	56	3	0	22	35	1	1	1	17	2	1036
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	57			59			544	560	58	544	544	40
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	57			59			544	560	58	544	544	40
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	86			100			0	100	100	96	99	0
cM capacity (veh/h)	1547			1545			0	374	1009	399	382	1032

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	282	57	3	1055
Volume Left	223	0	1	17
Volume Right	3	35	1	1036
cSH	1547	1545	0	1003
Volume to Capacity	0.14	0.00	Err	1.05
Queue Length 95th (ft)	13	0	Err	585
Control Delay (s)	6.3	0.0	Err	63.1
Lane LOS	A		F	F
Approach Delay (s)	6.3	0.0	Err	63.1
Approach LOS			F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	200	32	1	0	14	20	0	0	0	10	1	836
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	200	32	1	0	14	20	0	0	0	10	1	836
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	34			33			457	466	32	456	457	24
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	34			33			457	466	32	456	457	24
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			100			100	100	100	98	100	21
cM capacity (veh/h)	1578			1579			95	431	1041	464	437	1052

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	233	34	0	847
Volume Left	200	0	0	10
Volume Right	1	20	0	836
cSH	1578	1579	1700	1035
Volume to Capacity	0.13	0.00	0.00	0.82
Queue Length 95th (ft)	11	0	0	240
Control Delay (s)	6.7	0.0	0.0	21.9
Lane LOS	A		A	C
Approach Delay (s)	6.7	0.0	0.0	21.9
Approach LOS			A	C

Intersection Summary			
Average Delay	18.1		
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	205	42	2	0	28	33	1	1	0	19	1	1226
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	205	42	2	0	28	33	1	1	0	19	1	1226
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	61			44			498	514	43	498	498	44
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	61			44			498	514	43	498	498	44
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			100			0	100	100	96	100	0
cM capacity (veh/h)	1542			1564			0	402	1027	433	411	1025

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	249	61	2	1246
Volume Left	205	0	1	19
Volume Right	2	33	0	1226
cSH	1542	1564	0	1003
Volume to Capacity	0.13	0.00	Err	1.24
Queue Length 95th (ft)	11	0	Err	1039
Control Delay (s)	6.5	0.0	Err	133.5
Lane LOS	A		F	F
Approach Delay (s)	6.5	0.0	Err	133.5
Approach LOS			F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	104.0%	ICU Level of Service	G
Analysis Period (min)	15		

No Signals

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	332	53	3	0	21	38	1	1	1	22	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	332	53	3	0	21	38	1	1	1	22	2	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	59			56			760	778	54	758	760	40
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	59			56			760	778	54	758	760	40
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	79			100			100	100	100	92	99	100
cM capacity (veh/h)	1545			1549			268	257	1012	269	263	1031

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total	332	56	59	3	22	2
Volume Left	332	0	0	1	22	0
Volume Right	0	3	38	1	0	0
cSH	1545	1700	1549	349	269	263
Volume to Capacity	0.21	0.03	0.00	0.01	0.08	0.01
Queue Length 95th (ft)	20	0	0	1	7	1
Control Delay (s)	8.0	0.0	0.0	15.4	19.6	18.8
Lane LOS	A			C	C	C
Approach Delay (s)	6.8		0.0	15.4	19.5	
Approach LOS				C	C	

Intersection Summary			
Average Delay	6.7		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	349	31	1	0	13	26	0	0	0	14	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	349	31	1	0	13	26	0	0	0	14	1	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	39			32			756	768	32	755	756	26
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	39			32			756	768	32	755	756	26
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	78			100			100	100	100	95	100	100
cM capacity (veh/h)	1571			1580			268	258	1043	269	262	1050

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total	349	32	39	0	14	1
Volume Left	349	0	0	0	14	0
Volume Right	0	1	26	0	0	0
cSH	1571	1700	1580	1700	269	262
Volume to Capacity	0.22	0.02	0.00	0.00	0.05	0.00
Queue Length 95th (ft)	21	0	0	0	4	0
Control Delay (s)	7.9	0.0	0.0	0.0	19.1	18.8
Lane LOS	A			A	C	C
Approach Delay (s)	7.3		0.0	0.0	19.1	
Approach LOS				A	C	

Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	327	40	2	0	27	39	1	1	0	25	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	327	40	2	0	27	39	1	1	0	25	1	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	66			42			742	761	41	741	742	46
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	66			42			742	761	41	741	742	46
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	79			100			100	100	100	91	100	100
cM capacity (veh/h)	1536			1567			277	264	1030	277	270	1023

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total	327	42	66	2	25	1
Volume Left	327	0	0	1	25	0
Volume Right	0	2	39	0	0	0
cSH	1536	1700	1567	270	277	270
Volume to Capacity	0.21	0.02	0.00	0.01	0.09	0.00
Queue Length 95th (ft)	20	0	0	1	7	0
Control Delay (s)	8.0	0.0	0.0	18.4	19.3	18.4
Lane LOS	A			C	C	C
Approach Delay (s)	7.1		0.0	18.4	19.3	
Approach LOS				C	C	

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	1	1	1317	8	6	1195
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	1432	9	7	1299
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2098	720			1440	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2098	720			1440	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			99	
cM capacity (veh/h)	44	370			467	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	2	954	486	7	649	649
Volume Left	1	0	0	7	0	0
Volume Right	1	0	9	0	0	0
cSH	79	1700	1700	467	1700	1700
Volume to Capacity	0.03	0.56	0.29	0.01	0.38	0.38
Queue Length 95th (ft)	2	0	0	1	0	0
Control Delay (s)	52.0	0.0	0.0	12.8	0.0	0.0
Lane LOS	F			B		
Approach Delay (s)	52.0	0.0		0.1		
Approach LOS	F					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	2	3	1199	2	1	955
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	3	1303	2	1	1038
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1826	653			1305	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1826	653			1305	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	99			100	
cM capacity (veh/h)	68	410			526	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	5	869	437	1	519	519
Volume Left	2	0	0	1	0	0
Volume Right	3	0	2	0	0	0
cSH	136	1700	1700	526	1700	1700
Volume to Capacity	0.04	0.51	0.26	0.00	0.31	0.31
Queue Length 95th (ft)	3	0	0	0	0	0
Control Delay (s)	32.5	0.0	0.0	11.9	0.0	0.0
Lane LOS	D			B		
Approach Delay (s)	32.5	0.0		0.0		
Approach LOS	D					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	7	2	1073	1	1	1405
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	2	1166	1	1	1527
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1933	584			1167	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1933	584			1167	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	100			100	
cM capacity (veh/h)	58	455			594	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	10	778	390	1	764	764
Volume Left	8	0	0	1	0	0
Volume Right	2	0	1	0	0	0
cSH	72	1700	1700	594	1700	1700
Volume to Capacity	0.14	0.46	0.23	0.00	0.45	0.45
Queue Length 95th (ft)	11	0	0	0	0	0
Control Delay (s)	63.0	0.0	0.0	11.1	0.0	0.0
Lane LOS	F			B		
Approach Delay (s)	63.0	0.0		0.0		
Approach LOS	F					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

2018 Cumulative Build

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	34	74	64	726	610	22
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	34	74	64	726	610	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			862			
pX, platoon unblocked						
vC, conflicting volume	790				206	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	790				206	64
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				19	98
cM capacity (veh/h)	830				750	1000

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	108	64	726	632
Volume Left	34	0	0	610
Volume Right	0	0	726	22
cSH	830	1700	1700	757
Volume to Capacity	0.04	0.04	0.43	0.83
Queue Length 95th (ft)	3	0	0	236
Control Delay (s)	3.3	0.0	0.0	28.9
Lane LOS	A			D
Approach Delay (s)	3.3	0.0		28.9
Approach LOS				D

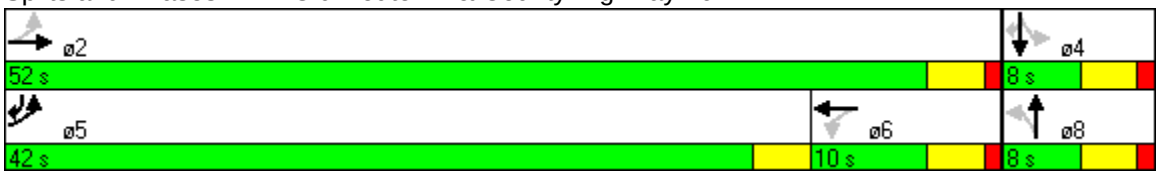
Intersection Summary			
Average Delay	12.2		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations								
Volume (vph)	627	53	21	1	1	19	2	768
Lane Group Flow (vph)	682	61	61	0	3	21	2	835
Turn Type	pm+pt			Perm		Perm		pm+ov
Protected Phases	5	2	6		8		4	5
Permitted Phases	2			8		4		4
Detector Phases	5	2	6	8	8	4	4	5
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Total Split (s)	42.0	52.0	10.0	8.0	8.0	8.0	8.0	42.0
Total Split (%)	70.0%	86.7%	16.7%	13.3%	13.3%	13.3%	13.3%	70.0%
Maximum Green (s)	39.0	48.0	6.0	4.0	4.0	4.0	4.0	39.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Lead/Lag	Lead		Lag					Lead
Lead-Lag Optimize?	Yes		Yes					Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	None	None	None	None
v/c Ratio	0.57	0.04	0.20		0.02	0.12	0.01	0.65
Control Delay	3.6	1.0	14.5		23.0	25.9	25.0	2.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	3.6	1.0	14.5		23.0	25.9	25.0	2.8
Queue Length 50th (ft)	0	0	4		0	4	0	1
Queue Length 95th (ft)	96	6	38		8	26	6	18
Internal Link Dist (ft)		782	1512		679		1053	
Turn Bay Length (ft)						50		
Base Capacity (vph)	1269	1702	318		149	175	175	1380
Starvation Cap Reductn	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0
Reduced v/c Ratio	0.54	0.04	0.19		0.02	0.12	0.01	0.61

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 40.2
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Old Route 17 & County Highway 161



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99			0.92			0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00			0.98		0.95	1.00	1.00
Satd. Flow (prot)	1770	1849			1706			1750		1770	1863	1583
Flt Permitted	0.45	1.00			1.00			1.00		1.00	1.00	1.00
Satd. Flow (perm)	846	1849			1706			1779		1863	1863	1583
Volume (vph)	627	53	3	0	21	35	1	1	1	19	2	768
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	682	58	3	0	23	38	1	1	1	21	2	835
RTOR Reduction (vph)	0	1	0	0	32	0	0	1	0	0	0	362
Lane Group Flow (vph)	682	60	0	0	29	0	0	2	0	21	2	473
Turn Type	pm+pt			Perm			Perm			Perm		pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	33.4	33.4			6.9			1.1		1.1	1.1	24.6
Effective Green, g (s)	33.4	33.4			6.9			1.1		1.1	1.1	23.6
Actuated g/C Ratio	0.79	0.79			0.16			0.03		0.03	0.03	0.56
Clearance Time (s)	3.0	4.0			4.0			4.0		4.0	4.0	3.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1154	1453			277			46		48	48	1028
v/s Ratio Prot	c0.31	0.03			0.02						0.00	c0.24
v/s Ratio Perm	c0.15							0.00		0.01		0.06
v/c Ratio	0.59	0.04			0.11			0.04		0.44	0.04	0.46
Uniform Delay, d1	2.0	1.0			15.2			20.2		20.4	20.2	5.6
Progression Factor	1.00	1.00			1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	0.8	0.0			0.2			0.4		6.3	0.4	0.3
Delay (s)	2.8	1.0			15.3			20.6		26.7	20.5	6.0
Level of Service	A	A			B			C		C	C	A
Approach Delay (s)		2.6			15.3			20.6			6.5	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	42.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	34	629	790	645
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	34	629	790	645
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1133		
pX, platoon unblocked						
vC, conflicting volume	1487	395	790			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1487	395	790			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	96			
cM capacity (veh/h)	110	604	826			

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	34	629	395	395	645
Volume Left	34	0	0	0	0
Volume Right	0	0	0	0	645
cSH	826	1700	1700	1700	1700
Volume to Capacity	0.04	0.37	0.23	0.23	0.38
Queue Length 95th (ft)	3	0	0	0	0
Control Delay (s)	9.5	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.5		0.0		
Approach LOS					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	629	0	0	1393	42	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	629	0	0	1393	42	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				982		
pX, platoon unblocked						
vC, conflicting volume			629		1326	629
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			629		1326	629
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		71	100
cM capacity (veh/h)			949		147	425

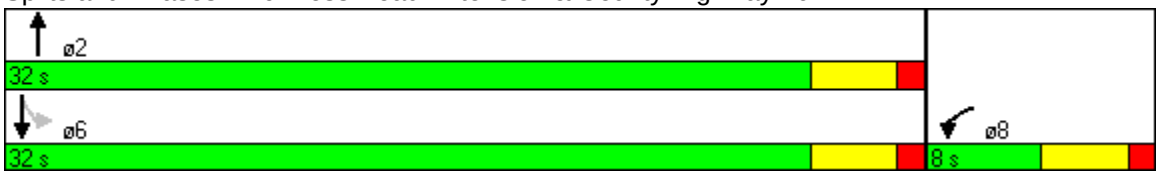
Direction, Lane #	NB 1	SB 1	SB 2	NW 1
Volume Total	629	696	696	42
Volume Left	0	0	0	42
Volume Right	0	0	0	0
cSH	1700	1700	1700	147
Volume to Capacity	0.37	0.41	0.41	0.29
Queue Length 95th (ft)	0	0	0	28
Control Delay (s)	0.0	0.0	0.0	39.0
Lane LOS				E
Approach Delay (s)	0.0	0.0		39.0
Approach LOS				E

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Volume (vph)	1	1581	6	1392
Lane Group Flow (vph)	2	1727	7	1513
Turn Type			Perm	
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phases	8	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0
Total Split (s)	8.0	32.0	32.0	32.0
Total Split (%)	20.0%	80.0%	80.0%	80.0%
Maximum Green (s)	4.0	28.0	28.0	28.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min
v/c Ratio	0.04	0.50	0.03	0.44
Control Delay	15.0	0.8	0.5	0.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.0	0.8	0.5	0.7
Queue Length 50th (ft)	1	0	0	0
Queue Length 95th (ft)	10	89	1	70
Internal Link Dist (ft)	524	902		799
Turn Bay Length (ft)			50	
Base Capacity (vph)	55	3465	261	3468
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.04	0.50	0.03	0.44

Intersection Summary
Cycle Length: 40
Actuated Cycle Length: 120
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: Foss Road Extension & County Highway 161



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.93		1.00		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1695		3536		1770	3539
Flt Permitted	0.98		1.00		0.13	1.00
Satd. Flow (perm)	1695		3536		245	3539
Volume (vph)	1	1	1581	8	6	1392
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	1718	9	7	1513
RTOR Reduction (vph)	1	0	0	0	0	0
Lane Group Flow (vph)	1	0	1727	0	7	1513
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	0.8		114.4		114.4	114.4
Effective Green, g (s)	0.8		114.4		114.4	114.4
Actuated g/C Ratio	0.01		0.93		0.93	0.93
Clearance Time (s)	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	11		3283		228	3286
v/s Ratio Prot	c0.00		c0.49			0.43
v/s Ratio Perm					0.03	
v/c Ratio	0.09		0.53		0.03	0.46
Uniform Delay, d1	60.8		0.6		0.3	0.5
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	3.6		0.2		0.1	0.1
Delay (s)	64.4		0.8		0.4	0.7
Level of Service	E		A		A	A
Approach Delay (s)	64.4		0.8			0.7
Approach LOS	E		A			A

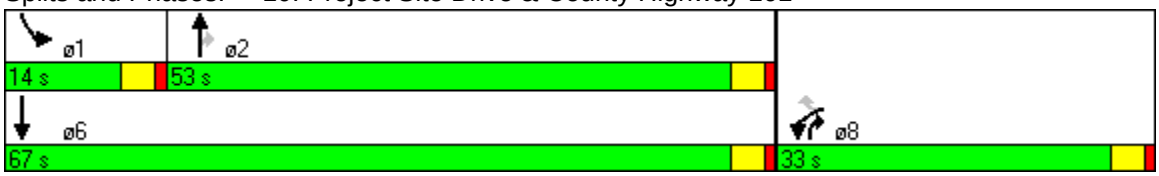
Intersection Summary			
HCM Average Control Delay	0.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	123.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	929	201	818	764	166	468
Lane Group Flow (vph)	1010	218	889	830	180	509
Turn Type		Perm		pm+ov	Prot	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Detector Phases	8	8	2	8	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0
Total Split (s)	33.0	33.0	53.0	33.0	14.0	67.0
Total Split (%)	33.0%	33.0%	53.0%	33.0%	14.0%	67.0%
Maximum Green (s)	29.0	29.0	49.0	29.0	10.0	63.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	None	None	Min
v/c Ratio	1.01	0.35	0.98	0.36	1.01	0.43
Control Delay	66.9	5.6	51.4	2.2	117.2	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	5.6	51.4	2.2	117.2	10.9
Queue Length 50th (ft)	~340	0	532	40	~119	151
Queue Length 95th (ft)	#477	53	#812	55	#257	220
Internal Link Dist (ft)	410		399			750
Turn Bay Length (ft)					150	
Base Capacity (vph)	1001	616	913	2315	178	1174
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.35	0.97	0.36	1.01	0.43

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 99.5
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Project Site Drive & County Highway 161



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.88	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	1863	2787	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	1863	2787	1770	1863
Volume (vph)	929	201	818	764	166	468
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1010	218	889	830	180	509
RTOR Reduction (vph)	0	154	0	39	0	0
Lane Group Flow (vph)	1010	64	889	791	180	509
Turn Type		Perm		pm+ov	Prot	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	29.0	29.0	48.5	77.5	10.0	62.5
Effective Green, g (s)	29.0	29.0	48.5	77.5	10.0	62.5
Actuated g/C Ratio	0.29	0.29	0.49	0.78	0.10	0.63
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1001	461	908	2283	178	1170
v/s Ratio Prot	c0.29		c0.48	0.10	c0.10	0.27
v/s Ratio Perm		0.04		0.18		
v/c Ratio	1.01	0.14	0.98	0.35	1.01	0.44
Uniform Delay, d1	35.2	26.0	25.0	3.3	44.8	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	30.7	0.1	24.5	0.1	70.4	0.3
Delay (s)	65.9	26.2	49.5	3.4	115.2	9.7
Level of Service	E	C	D	A	F	A
Approach Delay (s)	58.9		27.3			37.3
Approach LOS	E		C			D

Intersection Summary			
HCM Average Control Delay	39.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	99.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	4	35	32	586	661	8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	4	35	32	586	661	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			862			
pX, platoon unblocked						
vC, conflicting volume	618				75	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	618				75	32
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				29	99
cM capacity (veh/h)	962				925	1042

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	39	32	586	669
Volume Left	4	0	0	661
Volume Right	0	0	586	8
cSH	962	1700	1700	926
Volume to Capacity	0.00	0.02	0.34	0.72
Queue Length 95th (ft)	0	0	0	162
Control Delay (s)	0.9	0.0	0.0	18.3
Lane LOS	A			C
Approach Delay (s)	0.9	0.0		18.3
Approach LOS				C

Intersection Summary			
Average Delay	9.3		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	SBL	SBT	SBR	ø8
Lane Configurations							
Volume (vph)	664	31	13	11	1	605	
Lane Group Flow (vph)	722	35	38	12	1	658	
Turn Type	pm+pt			Perm		pm+ov	
Protected Phases	5	2	6		4	5	8
Permitted Phases	2			4		4	
Detector Phases	5	2	6	4	4	5	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Total Split (s)	24.0	32.0	8.0	8.0	8.0	24.0	8.0
Total Split (%)	60.0%	80.0%	20.0%	20.0%	20.0%	60.0%	20%
Maximum Green (s)	21.0	28.0	4.0	4.0	4.0	21.0	4.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Lead/Lag	Lead		Lag			Lead	
Lead-Lag Optimize?	Yes		Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	None	None	None
v/c Ratio	0.59	0.02	0.15	0.06	0.00	0.55	
Control Delay	3.9	1.0	11.1	17.0	16.0	2.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.9	1.0	11.1	17.0	16.0	2.2	
Queue Length 50th (ft)	0	0	2	2	0	0	
Queue Length 95th (ft)	116	5	22	13	3	15	
Internal Link Dist (ft)		782	1512		1053		
Turn Bay Length (ft)				50			
Base Capacity (vph)	1198	1744	257	207	207	1250	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.60	0.02	0.15	0.06	0.00	0.53	

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 30.1
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Old Route 17 & County Highway 161

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00					1.00	1.00	1.00
Frt	1.00	1.00			0.91					1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1855			1704					1770	1863	1583
Flt Permitted	0.48	1.00			1.00					1.00	1.00	1.00
Satd. Flow (perm)	898	1855			1704					1863	1863	1583
Volume (vph)	664	31	1	0	13	22	0	0	0	11	1	605
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	722	34	1	0	14	24	0	0	0	12	1	658
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	0	322
Lane Group Flow (vph)	722	35	0	0	17	0	0	0	0	12	1	336
Turn Type	pm+pt			Perm			Perm			Perm		pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	24.7	24.7			4.3					0.6	0.6	18.0
Effective Green, g (s)	24.7	24.7			4.3					0.6	0.6	17.0
Actuated g/C Ratio	0.74	0.74			0.13					0.02	0.02	0.51
Clearance Time (s)	3.0	4.0			4.0					4.0	4.0	3.0
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	1096	1376			220					34	34	998
v/s Ratio Prot	c0.32	0.02			0.01						0.00	c0.17
v/s Ratio Perm	c0.16									0.01		0.05
v/c Ratio	0.66	0.03			0.08					0.35	0.03	0.34
Uniform Delay, d1	2.3	1.1			12.8					16.2	16.1	4.8
Progression Factor	1.00	1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2	1.4	0.0			0.2					6.2	0.4	0.2
Delay (s)	3.7	1.1			12.9					22.4	16.4	5.0
Level of Service	A	A			B					C	B	A
Approach Delay (s)		3.6			12.9			0.0			5.3	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	4.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	33.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	14	672	617	539
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	14	672	617	539
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1133		
pX, platoon unblocked						
vC, conflicting volume	1317	308	617			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1317	308	617			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	99			
cM capacity (veh/h)	147	687	959			

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	14	672	308	308	539
Volume Left	14	0	0	0	0
Volume Right	0	0	0	0	539
cSH	959	1700	1700	1700	1700
Volume to Capacity	0.01	0.40	0.18	0.18	0.32
Queue Length 95th (ft)	1	0	0	0	0
Control Delay (s)	8.8	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	0.2		0.0		
Approach LOS					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	672	0	0	1148	8	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	672	0	0	1148	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				982		
pX, platoon unblocked						
vC, conflicting volume			672		1246	672
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			672		1246	672
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		95	100
cM capacity (veh/h)			915		166	398

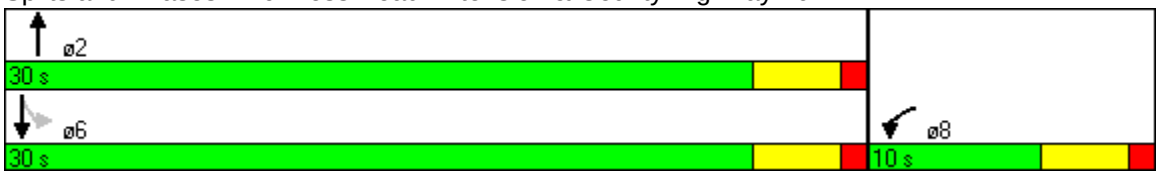
Direction, Lane #	NB 1	SB 1	SB 2	NW 1
Volume Total	672	574	574	8
Volume Left	0	0	0	8
Volume Right	0	0	0	0
cSH	1700	1700	1700	166
Volume to Capacity	0.40	0.34	0.34	0.05
Queue Length 95th (ft)	0	0	0	4
Control Delay (s)	0.0	0.0	0.0	27.8
Lane LOS				D
Approach Delay (s)	0.0	0.0		27.8
Approach LOS				D

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Volume (vph)	2	1388	1	1146
Lane Group Flow (vph)	5	1511	1	1246
Turn Type			Perm	
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phases	8	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0
Total Split (s)	10.0	30.0	30.0	30.0
Total Split (%)	25.0%	75.0%	75.0%	75.0%
Maximum Green (s)	6.0	26.0	26.0	26.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min
v/c Ratio	0.06	0.44	0.00	0.36
Control Delay	12.6	0.8	1.0	0.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.6	0.8	1.0	0.7
Queue Length 50th (ft)	2	0	0	0
Queue Length 95th (ft)	14	95	1	70
Internal Link Dist (ft)	524	902		799
Turn Bay Length (ft)			50	
Base Capacity (vph)	83	3448	280	3448
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.06	0.44	0.00	0.36

Intersection Summary
Cycle Length: 40
Actuated Cycle Length: 117.7
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: Foss Road Extension & County Highway 161



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.92		1.00		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1678		3539		1770	3539
Flt Permitted	0.98		1.00		0.17	1.00
Satd. Flow (perm)	1678		3539		310	3539
Volume (vph)	2	3	1388	2	1	1146
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	3	1509	2	1	1246
RTOR Reduction (vph)	3	0	0	0	0	0
Lane Group Flow (vph)	2	0	1511	0	1	1246
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	1.3		111.5		111.5	111.5
Effective Green, g (s)	1.3		111.5		111.5	111.5
Actuated g/C Ratio	0.01		0.92		0.92	0.92
Clearance Time (s)	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	18		3267		286	3267
v/s Ratio Prot	c0.00		c0.43			0.35
v/s Ratio Perm					0.00	
v/c Ratio	0.11		0.46		0.00	0.38
Uniform Delay, d1	59.2		0.6		0.4	0.6
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	2.8		0.1		0.0	0.1
Delay (s)	62.0		0.7		0.4	0.6
Level of Service	E		A		A	A
Approach Delay (s)	62.0		0.7			0.6
Approach LOS	E		A			A

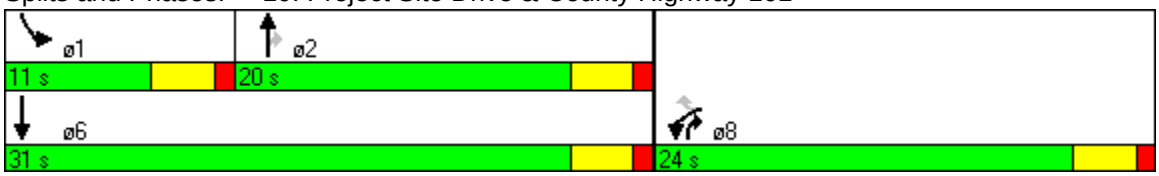
Intersection Summary			
HCM Average Control Delay	0.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	821	178	356	1035	224	326
Lane Group Flow (vph)	892	193	387	1125	243	354
Turn Type		Perm		pm+ov	Prot	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Detector Phases	8	8	2	8	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0
Total Split (s)	24.0	24.0	20.0	24.0	11.0	31.0
Total Split (%)	43.6%	43.6%	36.4%	43.6%	20.0%	56.4%
Maximum Green (s)	20.0	20.0	16.0	20.0	7.0	27.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	None	None	Min
v/c Ratio	0.71	0.27	0.77	0.55	1.03	0.40
Control Delay	18.3	3.6	30.1	4.1	96.2	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	3.6	30.1	4.1	96.2	10.5
Queue Length 50th (ft)	125	0	112	53	~92	67
Queue Length 95th (ft)	181	33	#222	84	#207	118
Internal Link Dist (ft)	410		399			750
Turn Bay Length (ft)					150	
Base Capacity (vph)	1292	716	550	2043	237	928
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.27	0.70	0.55	1.03	0.38

Intersection Summary

Cycle Length: 55
Actuated Cycle Length: 52.6
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Project Site Drive & County Highway 161



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.88	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	1863	2787	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	1863	2787	1770	1863
Volume (vph)	821	178	356	1035	224	326
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	892	193	387	1125	243	354
RTOR Reduction (vph)	0	122	0	55	0	0
Lane Group Flow (vph)	892	71	387	1070	243	354
Turn Type		Perm		pm+ov	Prot	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	19.3	19.3	14.2	33.5	7.0	25.2
Effective Green, g (s)	19.3	19.3	14.2	33.5	7.0	25.2
Actuated g/C Ratio	0.37	0.37	0.27	0.64	0.13	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1262	582	504	1991	236	894
v/s Ratio Prot	c0.26		c0.21	0.20	c0.14	0.19
v/s Ratio Perm		0.04		0.19		
v/c Ratio	0.71	0.12	0.77	0.54	1.03	0.40
Uniform Delay, d1	14.2	11.0	17.6	5.2	22.8	8.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.1	6.9	0.3	66.5	0.3
Delay (s)	16.0	11.1	24.5	5.5	89.2	9.1
Level of Service	B	B	C	A	F	A
Approach Delay (s)	15.1		10.4			41.7
Approach LOS	B		B			D

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	14	20	56	887	627	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	14	20	56	887	627	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			862			
pX, platoon unblocked						
vC, conflicting volume	943				104	56
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	943				104	56
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				28	97
cM capacity (veh/h)	727				877	1011

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	34	56	887	657
Volume Left	14	0	0	627
Volume Right	0	0	887	30
cSH	727	1700	1700	882
Volume to Capacity	0.02	0.03	0.52	0.74
Queue Length 95th (ft)	1	0	0	175
Control Delay (s)	4.3	0.0	0.0	20.0
Lane LOS	A			C
Approach Delay (s)	4.3	0.0		20.0
Approach LOS				C

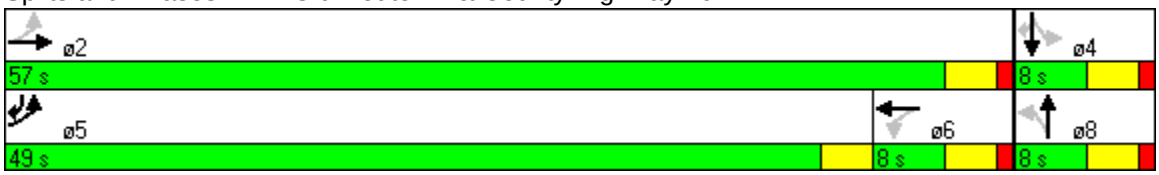
Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations								
Volume (vph)	606	40	27	1	1	21	1	916
Lane Group Flow (vph)	659	45	68	0	2	23	1	996
Turn Type	pm+pt			Perm		Perm		pm+ov
Protected Phases	5	2	6		8		4	5
Permitted Phases	2			8		4		4
Detector Phases	5	2	6	8	8	4	4	5
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Total Split (s)	49.0	57.0	8.0	8.0	8.0	8.0	8.0	49.0
Total Split (%)	75.4%	87.7%	12.3%	12.3%	12.3%	12.3%	12.3%	75.4%
Maximum Green (s)	46.0	53.0	4.0	4.0	4.0	4.0	4.0	46.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Lead/Lag	Lead		Lag					Lead
Lead-Lag Optimize?	Yes		Yes					Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	None	Min	Min	None
v/c Ratio	0.58	0.03	0.35		0.01	0.14	0.01	0.76
Control Delay	4.7	1.4	21.0		26.0	27.3	26.0	5.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	4.7	1.4	21.0		26.0	27.3	26.0	5.4
Queue Length 50th (ft)	44	2	7		1	6	0	22
Queue Length 95th (ft)	73	5	#52		7	30	5	46
Internal Link Dist (ft)		782	1512		679		1053	
Turn Bay Length (ft)						50		
Base Capacity (vph)	1248	1509	192		143	170	170	1315
Starvation Cap Reductn	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0
Reduced v/c Ratio	0.53	0.03	0.35		0.01	0.14	0.01	0.76

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 46.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Old Route 17 & County Highway 161



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00			1.00		1.00	1.00	1.00
Frt	1.00	0.99			0.92			1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00			0.98		0.95	1.00	1.00
Satd. Flow (prot)	1770	1850			1719			1817		1770	1863	1583
Flt Permitted	0.47	1.00			1.00			0.84		0.95	1.00	1.00
Satd. Flow (perm)	877	1850			1719			1568		1774	1863	1583
Volume (vph)	606	40	2	0	27	36	1	1	0	21	1	916
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	659	43	2	0	29	39	1	1	0	23	1	996
RTOR Reduction (vph)	0	1	0	0	35	0	0	0	0	0	0	214
Lane Group Flow (vph)	659	44	0	0	33	0	0	2	0	23	1	782
Turn Type	pm+pt			Perm			Perm			Perm		pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	33.9	33.9			4.5			4.2		4.2	4.2	30.6
Effective Green, g (s)	33.9	33.9			4.5			4.2		4.2	4.2	29.6
Actuated g/C Ratio	0.74	0.74			0.10			0.09		0.09	0.09	0.64
Clearance Time (s)	3.0	4.0			4.0			4.0		4.0	4.0	3.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1137	1360			168			143		162	170	1154
v/s Ratio Prot	0.32	0.02			0.02						0.00	c0.37
v/s Ratio Perm	c0.11							0.00		0.01		0.12
v/c Ratio	0.58	0.03			0.20			0.01		0.14	0.01	0.68
Uniform Delay, d1	2.9	1.7			19.1			19.1		19.3	19.1	5.2
Progression Factor	1.00	1.00			1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0			0.6			0.0		0.4	0.0	1.6
Delay (s)	3.6	1.7			19.7			19.1		19.7	19.1	6.8
Level of Service	A	A			B			B		B	B	A
Approach Delay (s)		3.5			19.7			19.1			7.1	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	46.1	Sum of lost time (s)	4.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	29	612	938	703
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	29	612	938	703
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1133		
pX, platoon unblocked						
vC, conflicting volume	1608	469	938			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1608	469	938			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	96			
cM capacity (veh/h)	92	541	726			

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	29	612	469	469	703
Volume Left	29	0	0	0	0
Volume Right	0	0	0	0	703
cSH	726	1700	1700	1700	1700
Volume to Capacity	0.04	0.36	0.28	0.28	0.41
Queue Length 95th (ft)	3	0	0	0	0
Control Delay (s)	10.2	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	0.5		0.0		
Approach LOS					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	612	0	0	1621	20	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	612	0	0	1621	20	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				982		
pX, platoon unblocked					0.96	
vC, conflicting volume			612		1422	612
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			612		1398	612
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		84	100
cM capacity (veh/h)			963		126	436

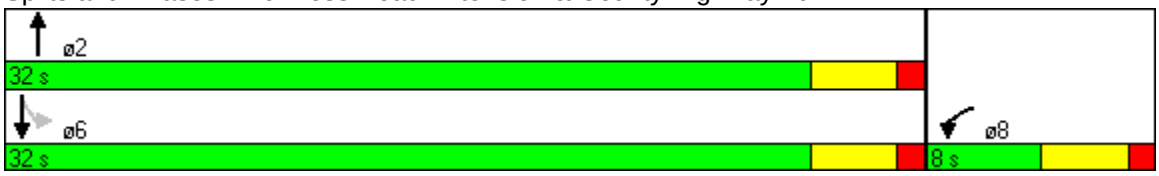
Direction, Lane #	NB 1	SB 1	SB 2	NW 1
Volume Total	612	810	810	20
Volume Left	0	0	0	20
Volume Right	0	0	0	0
cSH	1700	1700	1700	126
Volume to Capacity	0.36	0.48	0.48	0.16
Queue Length 95th (ft)	0	0	0	14
Control Delay (s)	0.0	0.0	0.0	38.8
Lane LOS				E
Approach Delay (s)	0.0	0.0		38.8
Approach LOS				E

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Volume (vph)	7	1270	1	1614
Lane Group Flow (vph)	10	1381	1	1754
Turn Type			Perm	
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phases	8	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0
Total Split (s)	8.0	32.0	32.0	32.0
Total Split (%)	20.0%	80.0%	80.0%	80.0%
Maximum Green (s)	4.0	28.0	28.0	28.0
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min
v/c Ratio	0.16	0.40	0.00	0.51
Control Delay	20.2	0.8	1.0	1.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.2	0.8	1.0	1.1
Queue Length 50th (ft)	6	0	0	0
Queue Length 95th (ft)	20	64	1	100
Internal Link Dist (ft)	524	902		799
Turn Bay Length (ft)			50	
Base Capacity (vph)	62	3436	302	3436
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.16	0.40	0.00	0.51

Intersection Summary
Cycle Length: 40
Actuated Cycle Length: 112.5
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: Foss Road Extension & County Highway 161



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frt	0.97		1.00		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1743		3539		1770	3539
Flt Permitted	0.96		1.00		0.19	1.00
Satd. Flow (perm)	1743		3539		357	3539
Volume (vph)	7	2	1270	1	1	1614
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	2	1380	1	1	1754
RTOR Reduction (vph)	2	0	0	0	0	0
Lane Group Flow (vph)	8	0	1381	0	1	1754
Turn Type					Perm	
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	1.1		106.3		106.3	106.3
Effective Green, g (s)	1.1		106.3		106.3	106.3
Actuated g/C Ratio	0.01		0.92		0.92	0.92
Clearance Time (s)	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	17		3260		329	3260
v/s Ratio Prot	c0.00		0.39			c0.50
v/s Ratio Perm					0.00	
v/c Ratio	0.47		0.42		0.00	0.54
Uniform Delay, d1	56.9		0.6		0.4	0.7
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	19.2		0.1		0.0	0.2
Delay (s)	76.1		0.7		0.4	0.9
Level of Service	E		A		A	A
Approach Delay (s)	76.1		0.7			0.9
Approach LOS	E		A			A

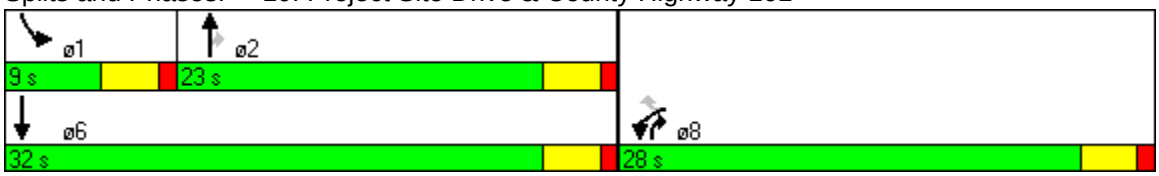
Intersection Summary			
HCM Average Control Delay	1.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	115.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1019	221	431	842	182	596
Lane Group Flow (vph)	1108	240	468	915	198	648
Turn Type		Perm		pm+ov	Prot	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Detector Phases	8	8	2	8	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0
Total Split (s)	28.0	28.0	23.0	28.0	9.0	32.0
Total Split (%)	46.7%	46.7%	38.3%	46.7%	15.0%	53.3%
Maximum Green (s)	24.0	24.0	19.0	24.0	5.0	28.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	None	None	Min
v/c Ratio	0.80	0.31	0.84	0.42	1.27	0.76
Control Delay	21.2	3.2	35.0	2.6	193.6	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	3.2	35.0	2.6	193.6	20.5
Queue Length 50th (ft)	175	0	152	32	~97	179
Queue Length 95th (ft)	#249	35	#292	49	#207	#302
Internal Link Dist (ft)	410		399			750
Turn Bay Length (ft)					150	
Base Capacity (vph)	1417	794	600	2181	156	883
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.30	0.78	0.42	1.27	0.73

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 57.4
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Project Site Drive & County Highway 161



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.88	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	1863	2787	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	1863	2787	1770	1863
Volume (vph)	1019	221	431	842	182	596
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1108	240	468	915	198	648
RTOR Reduction (vph)	0	143	0	24	0	0
Lane Group Flow (vph)	1108	97	468	891	198	648
Turn Type		Perm		pm+ov	Prot	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	23.1	23.1	17.2	40.3	5.0	26.2
Effective Green, g (s)	23.1	23.1	17.2	40.3	5.0	26.2
Actuated g/C Ratio	0.40	0.40	0.30	0.70	0.09	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1384	638	559	2155	154	852
v/s Ratio Prot	c0.32		0.25	0.17	c0.11	c0.35
v/s Ratio Perm		0.06		0.15		
v/c Ratio	0.80	0.15	0.84	0.41	1.29	0.76
Uniform Delay, d1	15.1	10.9	18.7	3.6	26.2	12.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	0.1	10.5	0.1	168.7	4.0
Delay (s)	18.5	11.0	29.3	3.7	194.8	17.0
Level of Service	B	B	C	A	F	B
Approach Delay (s)	17.2		12.3			58.6
Approach LOS	B		B			E

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCS2000: Ramps and Ramp Junctions Release 4.1f

Rizzo
Rizzo

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E-mail: helpdesk@rizzo.com

Merge Analysis

Analyst:	SLW
Agency/Co.:	Tetra Tech Rizzo
Date performed:	8/5/10
Analysis time period:	Friday PM Peak Hour
Freeway/Dir of Travel:	Eastbound State Route 17
Junction:	Exit 107 EB On-Ramp
Jurisdiction:	Thompson, NY
Analysis Year:	2018 Cumulative Build
Description:	Stockbridge-Munsee Casino [CBFr

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	60.0	mph
Volume on freeway	2976	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	760	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	632	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1200	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2976	760	632	vph
Peak-hour factor, PHF	1.00	1.00	1.00	
Peak 15-min volume, v15	744	190	158	v
Trucks and buses	1	5	8	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.995	0.976	0.962	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2991	779	657	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2991 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3770	4600	No
v_{R12}	3770	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 28.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.436	
Space mean speed in ramp influence area,	S_R = 52.1	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 52.1	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

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Merge Analysis

Analyst:	SLW
Agency/Co.:	Tetra Tech Rizzo
Date performed:	8/5/10
Analysis time period:	Friday PM Peak Hour
Freeway/Dir of Travel:	Westbound State Route 17
Junction:	Exit 107 WB On-Ramp
Jurisdiction:	Thompson, NY
Analysis Year:	2018 Cumulative Build
Description:	Stockbridge-Munsee Casino [CBFr

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	60.0	mph
Volume on freeway	3539	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	679	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1001	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1400	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3539	679	1001	vph
Peak-hour factor, PHF	1.00	1.00	1.00	
Peak 15-min volume, v15	885	170	296	v
Trucks and buses	1	9	4	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.995	0.957	0.980	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3557	710	1021	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3557 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4267	4600	No
v_{R12}	4267	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.550	
Space mean speed in ramp influence area,	S_R = 50.1	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 50.1	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

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Merge Analysis

Analyst:	SLW
Agency/Co.:	Tetra Tech Rizzo
Date performed:	8/5/10
Analysis time period:	Saturday PM Peak Hour
Freeway/Dir of Travel:	Eastbound State Route 17
Junction:	Exit 107 EB On-Ramp
Jurisdiction:	Thompson, NY
Analysis Year:	2018 Cumulative Build
Description:	Stockbridge-Munsee Casino [CBSa

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	60.0	mph
Volume on freeway	2837	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	764	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	669	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1200	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2837	764	669	vph
Peak-hour factor, PHF	1.00	1.00	1.00	
Peak 15-min volume, v15	920	191		v
Trucks and buses	1	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.995	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2851	768	672	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2851 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3619	4600	No
v_{R12}	3619	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 27.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.412	
Space mean speed in ramp influence area,	S_R = 52.6	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 52.6	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

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E-mail: helpdesk@rizzo.com

Merge Analysis

Analyst:	SLW
Agency/Co.:	Tetra Tech Rizzo
Date performed:	8/5/10
Analysis time period:	Saturday PM Peak Hour
Freeway/Dir of Travel:	Westbound State Route 17
Junction:	Exit 107 WB On-Ramp
Jurisdiction:	Thompson, NY
Analysis Year:	2018 Cumulative Build
Description:	Stockbridge-Munsee Casino [CBSa

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	60.0	mph
Volume on freeway	2903	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	553	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	726	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1400	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2903	553	726	vph
Peak-hour factor, PHF	1.00	1.00	1.00	
Peak 15-min volume, v15	726		182	v
Trucks and buses	1	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.995	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2918	556	730	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2918 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3474	4600	No
v_{R12}	3474	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 27.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.398	
Space mean speed in ramp influence area,	S_R = 52.8	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 52.8	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Rizzo
Rizzo

Phone: 508-902-2000 Fax: 508-903-2001
E-mail: helpdesk@rizzo.com

Merge Analysis

Analyst:	SLW
Agency/Co.:	Tetra Tech Rizzo
Date performed:	8/5/10
Analysis time period:	Sunday PM Peak Hour
Freeway/Dir of Travel:	Eastbound State Route 17
Junction:	Exit 107 EB On-Ramp
Jurisdiction:	Thompson, NY
Analysis Year:	2018 Cumulative Build
Description:	Stockbridge-Munsee Casino [CBSu

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	60.0	mph
Volume on freeway	3782	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	901	vph
Length of first accel/decel lane	900	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	657	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1200	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3782	901	657	vph
Peak-hour factor, PHF	1.00	1.00	1.00	
Peak 15-min volume, v15	946	282		v
Trucks and buses	1	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.995	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3801	910	664	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3801 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4711	4600	Yes
v_{R12}	4711	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 36.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 0.701	
Space mean speed in ramp influence area,	S_R = 47.4	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 47.4	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

Rizzo
Rizzo

Phone: 508-902-2000 Fax: 508-903-2001
E-mail: helpdesk@rizzo.com

Merge Analysis

Analyst:	SLW
Agency/Co.:	Tetra Tech Rizzo
Date performed:	8/5/10
Analysis time period:	Sunday PM Peak Hour
Freeway/Dir of Travel:	Westbound State Route 17
Junction:	Exit 107 WB On-Ramp
Jurisdiction:	Thompson, NY
Analysis Year:	2018 Cumulative Build
Description:	Stockbridge-Munsee Casino [CBSu

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	60.0	mph
Volume on freeway	2603	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	732	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	680	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1400	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2603	732	680	vph
Peak-hour factor, PHF	1.00	1.00	1.00	
Peak 15-min volume, v15	651	183	170	v
Trucks and buses	1	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.995	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2616	739	687	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2616 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3355	4600	No
v_{R12}	3355	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 26.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.384	
Space mean speed in ramp influence area,	S_R = 53.1	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 53.1	mph

No Signals

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	627	53	3	0	21	35	1	1	1	19	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	627	53	3	0	21	35	1	1	1	19	2	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	56			56			1348	1364	54	1347	1348	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	56			56			1348	1364	54	1347	1348	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	60			100			99	99	100	78	98	100
cM capacity (veh/h)	1549			1549			86	88	1012	87	90	1033

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total	627	56	56	3	19	2
Volume Left	627	0	0	1	19	0
Volume Right	0	3	35	1	0	0
cSH	1549	1700	1549	125	87	90
Volume to Capacity	0.40	0.03	0.00	0.02	0.22	0.02
Queue Length 95th (ft)	50	0	0	2	19	2
Control Delay (s)	8.9	0.0	0.0	34.5	57.6	46.0
Lane LOS	A			D	F	E
Approach Delay (s)	8.2		0.0	34.5	56.5	
Approach LOS				D	F	

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	664	31	1	0	13	22	0	0	0	11	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	664	31	1	0	13	22	0	0	0	11	1	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	35			32			1384	1394	32	1383	1384	24
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	35			32			1384	1394	32	1383	1384	24
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	58			100			100	100	100	86	99	100
cM capacity (veh/h)	1576			1580			80	82	1043	81	83	1052

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total	664	32	35	0	11	1
Volume Left	664	0	0	0	11	0
Volume Right	0	1	22	0	0	0
cSH	1576	1700	1580	1700	81	83
Volume to Capacity	0.42	0.02	0.00	0.00	0.14	0.01
Queue Length 95th (ft)	54	0	0	0	11	1
Control Delay (s)	8.9	0.0	0.0	0.0	56.1	48.9
Lane LOS	A			A	F	E
Approach Delay (s)	8.5		0.0	0.0	55.5	
Approach LOS				A	F	

Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

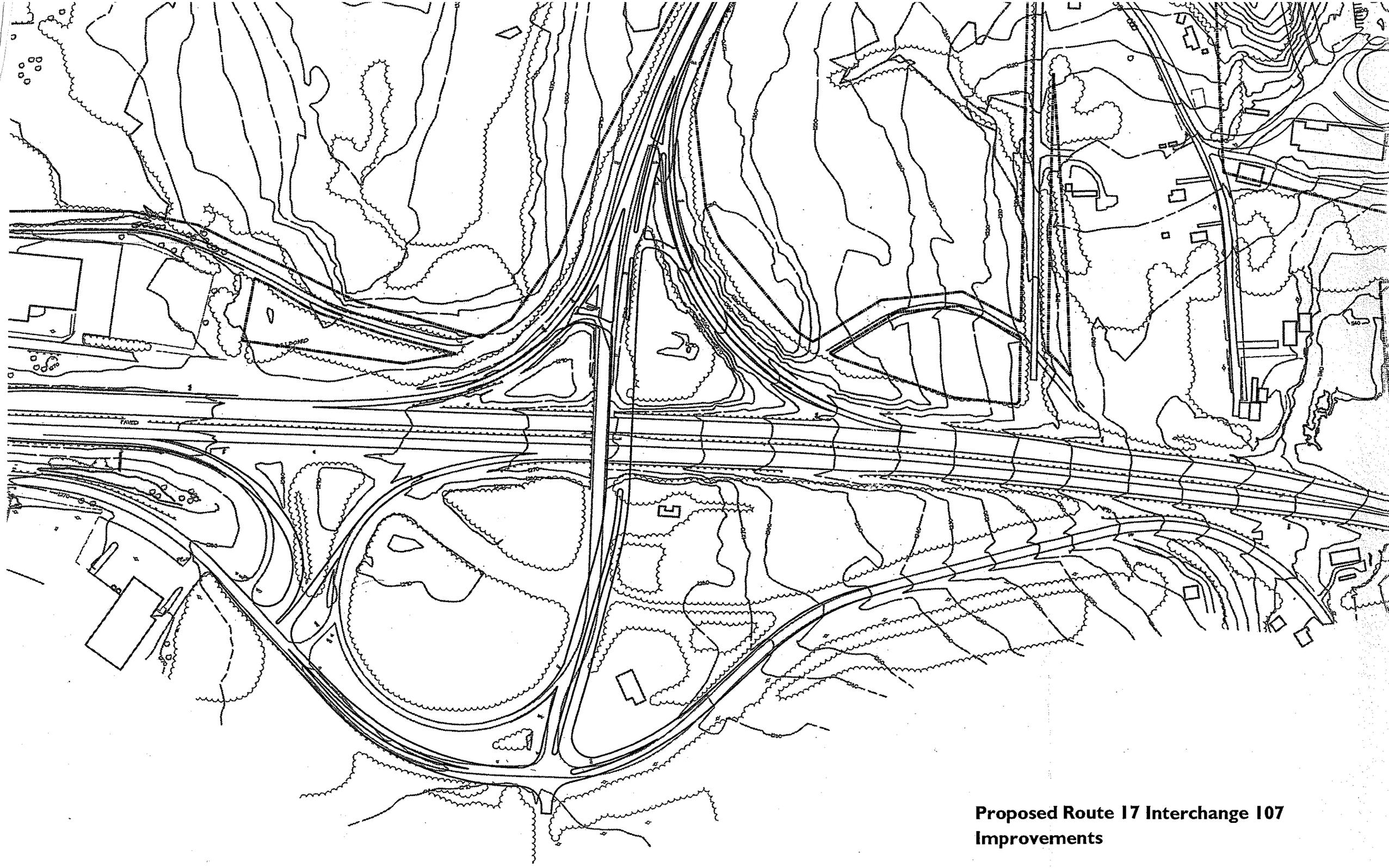
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	606	40	2	0	27	36	1	1	0	21	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	606	40	2	0	27	36	1	1	0	21	1	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	63			42			1298	1316	41	1298	1299	45
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	63			42			1298	1316	41	1298	1299	45
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	61			100			99	99	100	78	99	100
cM capacity (veh/h)	1540			1567			95	96	1030	95	98	1025

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total	606	42	63	2	21	1
Volume Left	606	0	0	1	21	0
Volume Right	0	2	36	0	0	0
cSH	1540	1700	1567	95	95	98
Volume to Capacity	0.39	0.02	0.00	0.02	0.22	0.01
Queue Length 95th (ft)	48	0	0	2	20	1
Control Delay (s)	8.8	0.0	0.0	43.5	53.0	42.2
Lane LOS	A			E	F	E
Approach Delay (s)	8.3		0.0	43.5	52.5	
Approach LOS				E	F	

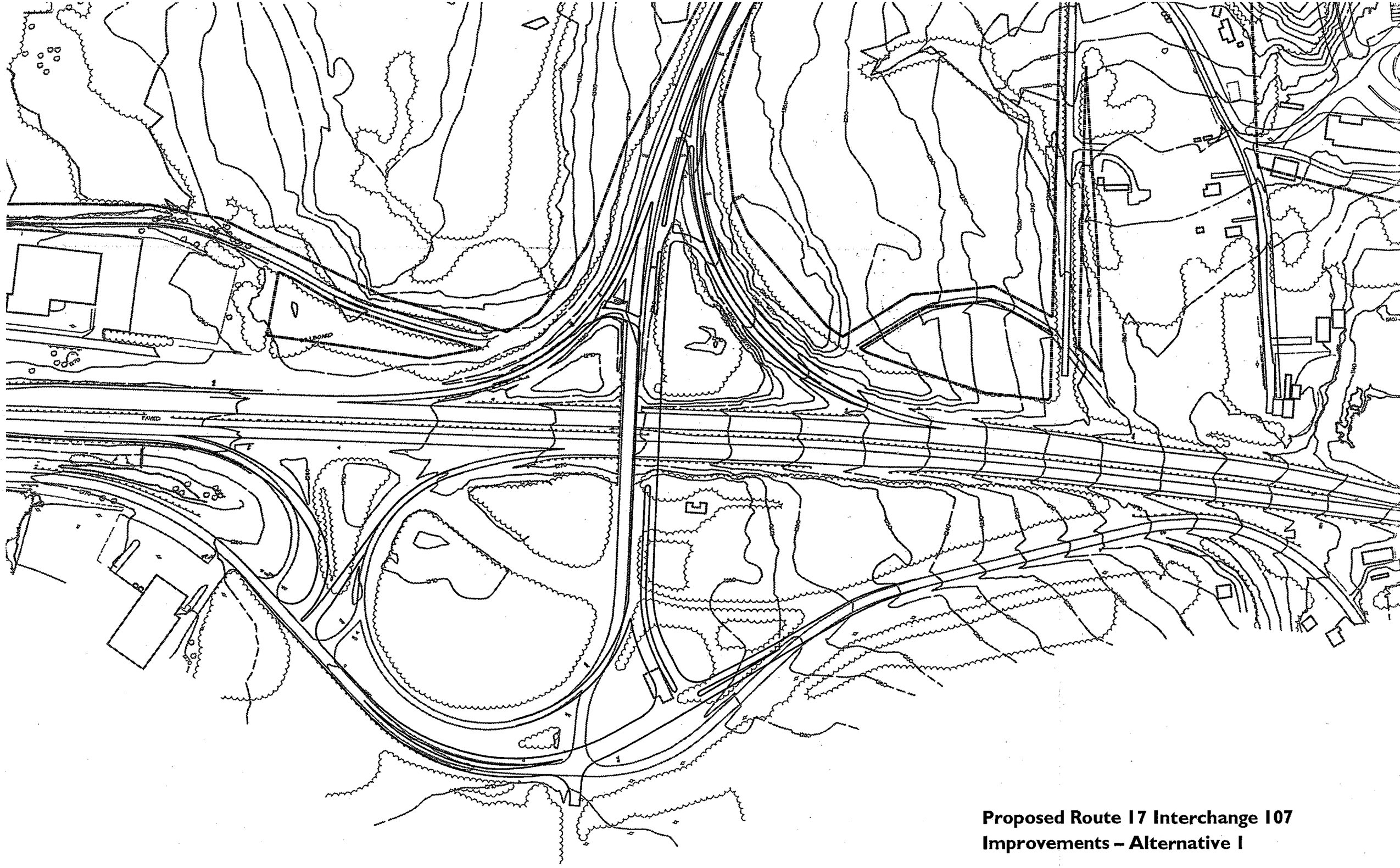
Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix C

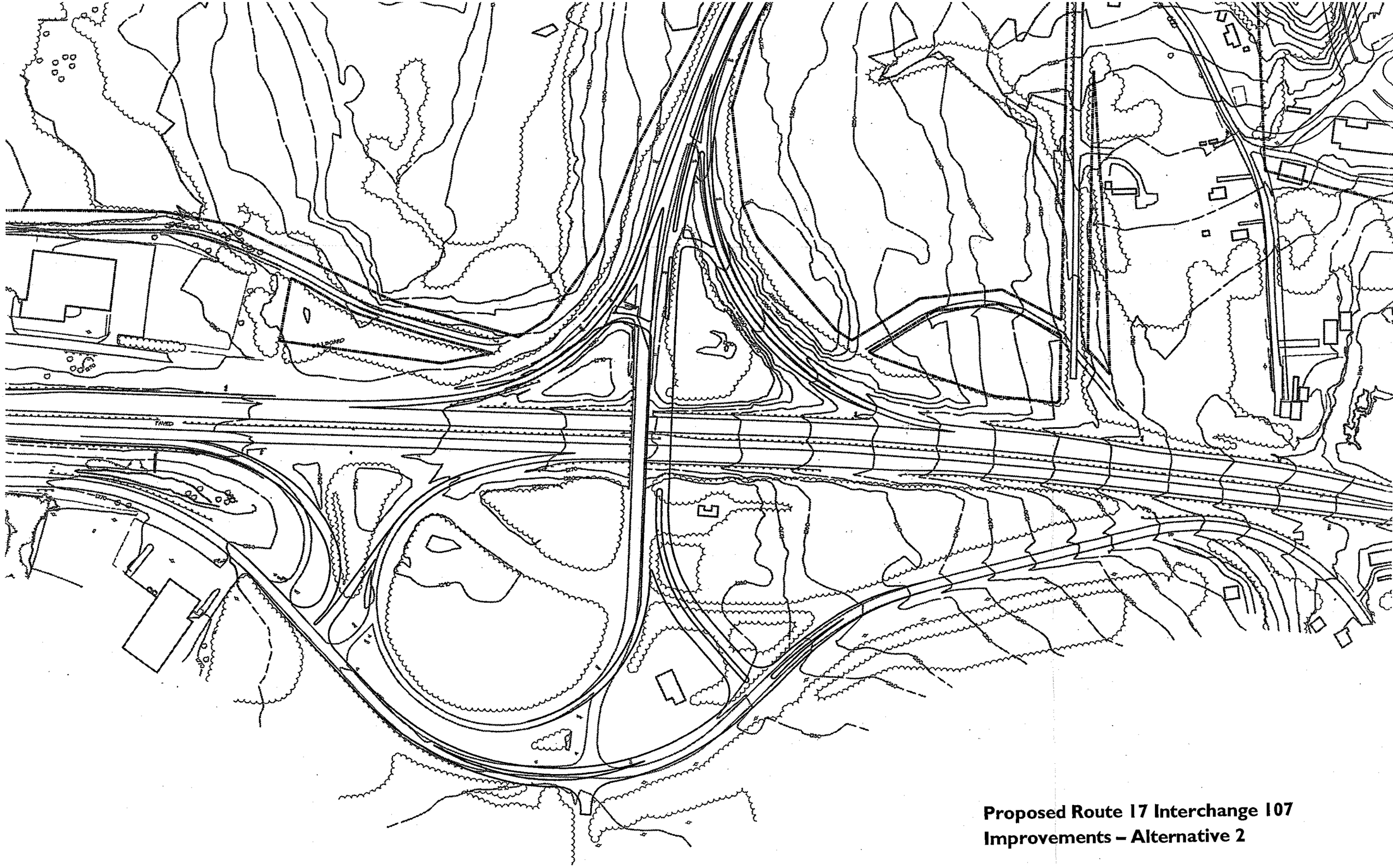
State Route 17 Interchange 107 Improvement Plan Alternatives



Proposed Route 17 Interchange 107 Improvements



Proposed Route 17 Interchange 107
Improvements – Alternative 1



Proposed Route 17 Interchange 107 Improvements – Alternative 2

Appendix D

Traffic Signal Warrant Analyses

County Highway 161 / Old Route 17 - Build Condition

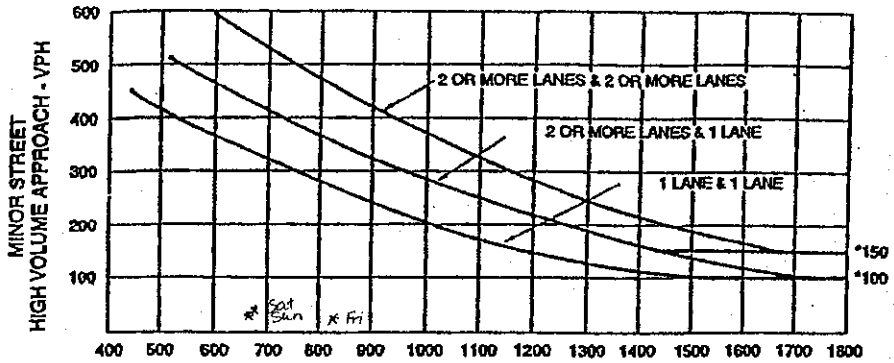
SIGNAL WARRANT WORKSHEET

WARRANT 3 *(PEAK HOUR VOLUME)*

Project Name: Trading Cove New York
Location: Thompson, NY
Compiled By: SML

Project No.: 7419
Data Source: Rizzo Projections
Date: 7/7/05

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

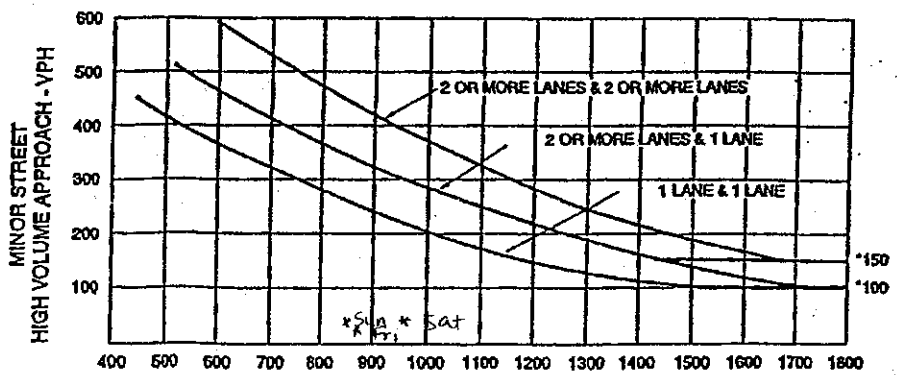
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Hour	Major Street Volume	Minor Street Volume
FRI	836	24
SAT	692	37
SUN	690	35

Warrant 3 Met?		
YES	NO	(CIRCLE)

County Highway 161/Old Route 17 - Cumulative Build Condition

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Hour	Major Street Volume	Minor Street Volume
FRI	885	24
SAT	957	37
SUN	853	35

Warrant 3 Met?		
YES	NO	(CIRCLE)

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County Highway 161/Proposed Site Drive - Build Condition

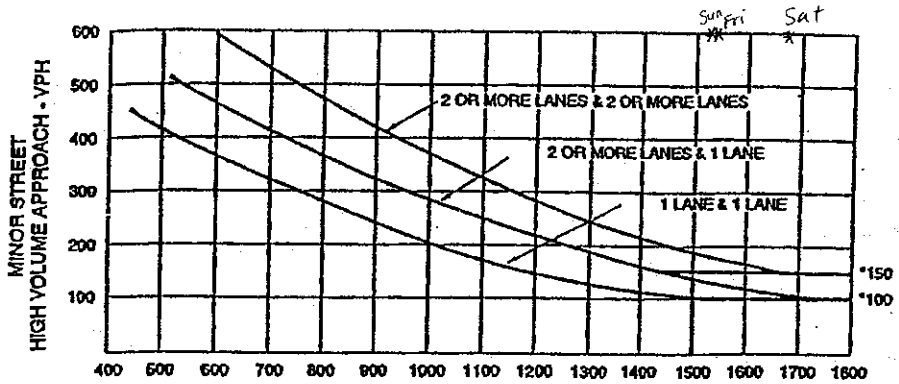
SIGNAL WARRANT WORKSHEET

WARRANT 3 *(PEAK HOUR VOLUME)*

Project Name: Trading Cove New York
Location: Thompson, NY
Compiled By: SML

Project No.: 7419
Data Source: Rizzo Projections
Date: 7/7/05

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

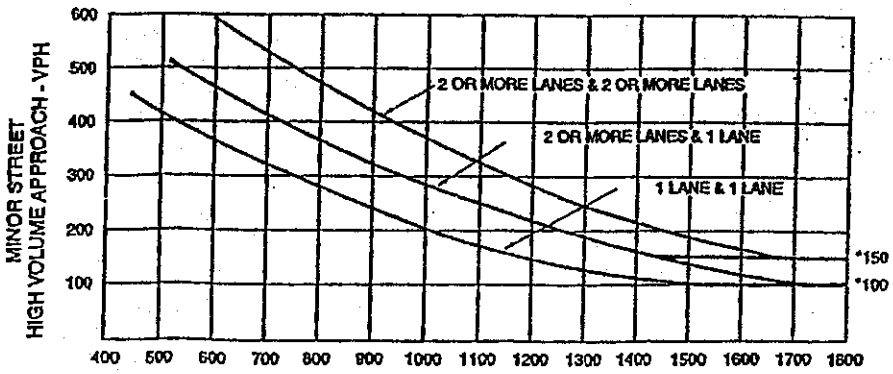
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Hour	Major Street Volume	Minor Street Volume
FRI	1532	1130
SAT	1686	999
SUN	1526	1240

Warrant 3 Met?		
Fri Sat Sun YES	NO	(CIRCLE)

Since warrants are met in Build Condition, they will also be met in Cumulative Build condition.

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Hour	Major Street Volume	Minor Street Volume

Warrant 3 Met?		
YES	NO	(CIRCLE)

RIZZO ASSOCIATES
A TETRA TECH COMPANY

State Rte 17 EB ON/OFF Ramps @ Old Route 17 - Build Condition

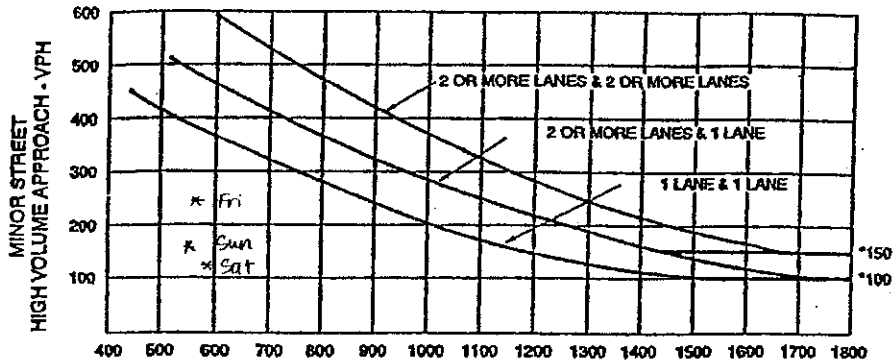
SIGNAL WARRANT WORKSHEET

WARRANT 3 (PEAK HOUR VOLUME)

Project Name: Trading Cove New York
Location: Thompson, NY
Compiled By: SML

Project No.: 7419
Data Source: Rizzo Projections
Date: 7/7/05

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

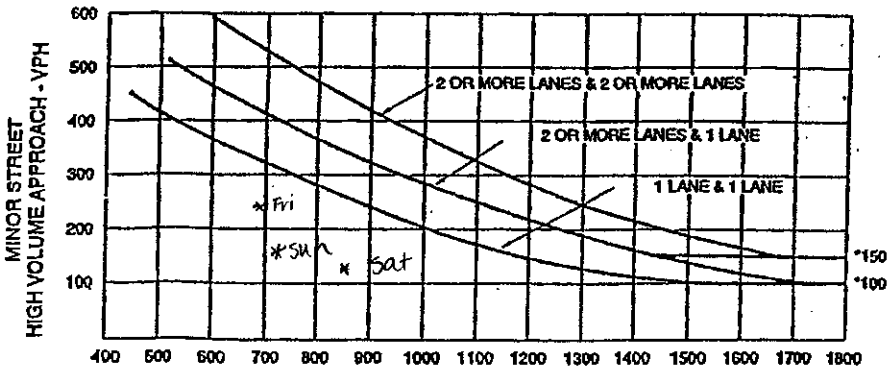
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Hour	Major Street Volume	Minor Street Volume
FRI	560	244
SAT	584	119
SUN	545	166

Warrant 3 Met?		
YES	NO	(CIRCLE)

State Rte 17 EB On/Off Ramps @ Old Route 17 – Cumulative Build Condition

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Hour	Major Street Volume	Minor Street Volume
FRI	698	244
SAT	649	119
SUN	708	166

Warrant 3 Met?		
YES	NO	(CIRCLE)

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A TETRA TECH COMPANY

Appendix E

Mohegan Sun Count Data Summaries

Mohegan Sun Daily Count Summary (no construction impacts)
(Including Event Days)

7419.03
5/12/01

Day	Month	Date	Year	Moghegan Sun Blvd Daily Traffic	Sandy Desert Rd. Daily Traffic	Total Daily Traffic	** = over 35,000 * = over 30,000
Tues	June	10	1997	14862	5900	20762	
		11	1997	15578	5900	21478	
		12	1997	15812	5900	21712	
		13	1997	19592	5900	25492	
		14	1997	26198	5900	32098	*
		15	1997	23814	5900	29714	
		16	1997	16446	5700	22146	
		17	1997	16035	5700	21735	
		18	1997	17072	5700	22772	
		19	1997	17183	5700	22883	
Wed	July	2	1997	17992	5700	23692	
		3	1997	19492	5700	25192	
		4	1997	24827	5700	30527	*
		5	1997	26227	5700	31927	*
		6	1997	22319	5700	28019	
		7	1997	17455	5700	23155	
Mon	Dec.	1	1997	18395	5199	23594	
		2	1997	15415	5199	20614	
		3	1997	16193	5199	21392	
		4	1997	15796	5199	20995	
		5	1997	17813	5199	23012	
		6	1997	23380	5199	28579	
		7	1997	21871	5199	27070	
		8	1997	14705	4967	19672	
		9	1997	14068	4967	19035	
		10	1997	11490	4967	16457	
		11	1997	11779	4967	16746	
		12	1997	15870	4967	20837	
		13	1997	20529	4967	25496	
		14	1997	19376	4967	24343	
		15	1997	14288	5046	19334	
		16	1997	14497	5046	19543	
		17	1997	15499	5046	20545	
		18	1997	14562	5046	19608	
		19	1997	15225	5046	20271	
		20	1997	19314	5046	24360	
		21	1997	18537	5046	23583	
		22	1997	14365	4851	19216	
		23	1997	10720	4851	15571	
		24	1997	11951	4851	16802	
		25	1997	14841	4851	19692	
		26	1997	26864	4851	31715	*
		27	1997	20722	4851	25573	
		28	1997	21244	4851	26095	
Mon.	Dec.	29	1997	17718	5298	23016	
		30	1997	15597	5298	20895	

		31	1997	19166	5298	24464		
	Jan.	1	1998	28076	5298	33374	*	
		2	1998	25691	5298	30989	*	
		3	1998	25192	5298	30490	*	
		4	1998	25990	5298	31288	*	
		5	1998	15660	5276	20936		
		6	1998	15362	5276	20638		
		7	1998	15206	5276	20482		
		8	1998	14844	5276	20120		
		9	1998	17984	5276	23260		
		10	1998	26889	5276	32165	*	
		11	1998	24245	5276	29521		
		12	1998	16169	5086	21255		
		13	1998	13700	5086	18786		
		14	1998	16923	5086	22009		
		15	1998	11261	5086	16347		
		16	1998	13436	5086	18522		
		17	1998	25613	5086	30699	*	
		18	1998	25253	5086	30339	*	
		19	1998	19481	5018	24499		
		20	1998	14823	5018	19841		
		21	1998	16502	5018	21520		
		22	1998	16159	5018	21177		
		23	1998	11394	5018	16412		
		24	1998	23236	5018	28254		
		25	1998	21223	5018	26241		
Mon.	Jan.	26	1998	15133	5282	20415		
		27	1998	14930	5282	20212		
		28	1998	15007	5282	20289		
		29	1998	16784	5282	22066		
		30	1998	19023	5282	24305		
		31	1998	28220	5282	33502	*	
	Feb.	1	1998	26092	5282	31374	*	
		2	1998	15391	5331	20722		
		3	1998	15668	5331	20999		
		4	1998	13499	5331	18830		
		5	1998	10577	5331	15908		
		6	1998	18949	5331	24280		**********
Sat.		7	1998	29183	5331	**34514**	*	9 =>USE FOR
		8	1998	26328	5331	31659	*	HOURLY COUNT DATA
		9	1998	15765	5706	21471		
		10	1998	15676	5706	21382		
		11	1998	16552	5706	22258		
		12	1998	16251	5706	21957		
		13	1998	20675	5706	26381		
		14	1998	32698	5706	38404	* **	3
		15	1998	33994	5706	39700	* **	2
		16	1998	25331	5613	30944	*	
		17	1998	15625	5613	21238		
		18	1998	16611	5613	22224		
		19	1998	18028	5613	23641		
		20	1998	21934	5613	27547		

		21	1998	27964	5613	33577	*		
		22	1998	25894	5613	31507	*		
		23	1998	15262	5419	20681			
		24	1998	14601	5419	20020			
		25	1998	14974	5419	20393			
		26	1998	16925	5419	22344			
		27	1998	20053	5419	25472			
		28	1998	27873	5419	33292	*		
Wed.	Oct.	14	1998	20017	6870	26887			
		15	1998	20550	6870	27420			
		16	1998	24109	6870	30979	*		
		17	1998	29368	6870	36238	*	**	5
		18	1998	28166	6870	35036	*	**	7
		19	1998	19331	6930	26261			
		20	1998	19072	6930	26002			
		21	1998	19506	6930	26436			
		22	1998	20387	6930	27317			
		23	1998	23492	6930	30422	*		
		24	1998	33079	6930	40009	*	**	1
		25	1998	29427	6930	36357	*	**	4
		26	1998	19406	6658	26064			
		27	1998	19144	6658	25802			
		28	1998	19483	6658	26141			
		29	1998	19913	6658	26571			
		30	1998	23673	6658	30331	*		
		31	1998	29028	6658	35686	*	**	6
	Nov.	1	1998	24197	6658	30855	*		
		2	1998	16697	5927	22624			
		3	1998	16697	5927	22624			
		4	1998	17452	5927	23379			
		5	1998	18330	5927	24257			
		6	1998	19511	5927	25438			
		7	1998	26539	5927	32466	*		
		8	1998	24413	5927	30340	*		
		9	1998	16290	5954	22244			
		10	1998	17257	5954	23211			
		11	1998	21886	5954	27840			
		12	1998	18223	5954	24177			
		13	1998	20153	5954	26107			
		14	1998	26426	5954	32380	*		
		15	1998	24439	5954	30393	*		
		16	1998	15883	5879	21762			
		17	1998	15825	5879	21704			
		18	1998	18194	5879	24073			
		19	1998	17587	5879	23466			
		20	1998	19023	5879	24902			
		21	1998	24772	5879	30651	*		
		22	1998	23685	5879	29564			
Mon.	Nov.	23	1998	15953	5572	21525			
		24	1998	15758	5572	21330			
		25	1998	16023	5572	21595			
		26	1998	17693	5572	23265			

	27	1998	28994	5572	34566	*		8 **********
Sat.	28	1998	28360	5572	**33932**	*		10 =>USE FOR
	29	1998	22220	5572	27792			HOURLY COUNT DATA
	30	1998	16010	5874	21884			
Dec.	1	1998	15780	5874	21654			
	2	1998	16251	5874	22125			
	3	1998	18820	5874	24694			
	4	1998	21834	5874	27708			
	5	1998	26744	5874	32618	*		
	6	1998	25783	5874	31657	*		
	7	1998	18679	5699	24378			
	8	1998	22400	5699	28099			
	9	1998	16624	5699	22323			
	10	1998	16540	5699	22239			
	11	1998	18232	5699	23931			
	12	1998	26708	5699	32407	*		
	13	1998	22411	5699	28110			
	14	1998	16253	5517	21770			
	15	1998	16504	5517	22021			
	16	1998	16478	5517	21995			
	17	1998	15717	5517	21234			
	18	1998	18545	5517	24062			
	19	1998	21410	5517	26927			
	20	1998	20889	5517	26406			
	21	1998	15717	5371	21088			
	22	1998	16407	5371	21778			
	23	1998	16387	5371	21758			
	24	1998	12175	5371	17546			
	25	1998	17840	5371	23211			
	26	1998	27507	5371	32878	*		
	27	1998	25456	5371	30827	*		
	28	1998	21742	5306	27048			
	29	1998	18875	5306	24181			
	30	1998	18731	5306	24037			
	31	1998	20767	5306	26073			
Jan.	1	1999	32581	5306	37887	*	**	3
	2	1999	27249	5306	32555	*		
	3	1999	13149	5306	18455			

Total all Counts:	4,740,086
Number of Daily Counts:	188
Average Daily Count:	25,213
95th Percentile of Total:	4,503,082
Number of Daily Counts in 95th Percentile:	179
95th Percentile Daily Count:	9th highest count

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Additional Counts (during Construction)

Mon.	June	21	1999	17927	8065	25992	
		22	1999	17253	8065	25318	
		23	1999	17261	8065	25326	
		24	1999	17293	8065	25358	
Fri.		**25**	**1999**	**20585**	**8065**	**28650**	**********
Sat.		**26**	**1999**	**26553**	**8065**	**34618**	USE FOR HOURLY COUNT DATA
Sun.		**27**	**1999**	**24707**	**8065**	**32772**	**********
		28	1999	19748	8824	28572	
		29	1999	19483	8824	28307	
		30	1999	20536	8824	29360	
	July	1	1999	20199	8824	29023	
		2	1999	22893	8824	31717	
		3	1999	27225	8824	36049	
		4	1999	30902	8824	39726	
		5	1999	27505	8871	36376	
		6	1999	21747	8871	30618	
		7	1999	22421	8871	31292	
		8	1999	21091	8871	29962	
Fri.		9	1999	23996	8871	32867	
Sat.		10	1999	28816	8871	37687	
Sun.		11	1999	27311	8871	36182	
		12	1999	22661			
		13	1999	23835			
		14	1999	24778			
		15	1999	23546			
		16	1999	27170			
		17	1999	28074			
		18	1999	27848			
		19	1999	22909			
		20	1999	22571			
		21	1999	24519			
		22	1999	24386			
		23	1999	25932			
		24	1999	29630			
		25	1999	28229			
		26	1999	21860			
		27	1999	20539			

7: 194 – 188
21: 634 – 324
512

Appendix F

Traffic Volume Network Calculations

				Annual Rate (%):		10.5%						
				Design Year:		2018						
				Years:		1						
				Factor:		1.105						
		2010 (Exist) Peak Hour			Design Year Base			Total Background Trips			No Build	
	Fri PM	Sat PM	Sun PM	Fri PM	Sat PM	Sun PM	Fri PM	Sat PM	Sun PM	Fri PM	Sat PM	Sun PM
EXISTING							0	0	0			
1 Rte 17 EB Off-ramp/Old Rte 17							0	0	0			
SBL	64	18	77	71	20	85	54	68	54	125	87	139
SBR	20	7	27	22	8	30	0	0	0	22	8	30
EBT	92	28	25	102	31	28	0	0	0	102	31	28
WBT	51	23	43	56	25	48	0	0	0	56	25	48
2 Rte 17 EB On Con./Old Rte 17							0	0	0			
EBL	31	4	13	34	4	14	0	0	0	34	4	14
EBT	125	42	89	138	46	98	54	68	54	193	114	152
WBT	51	23	43	56	25	48	0	0	0	56	25	48
WBR	5	0	0	6	0	0	0	0	0	6	0	0
3 ↓7 EB On Con./Rte 17 EB On Ramp							0	0	0			
NBL	36	4	13	40	4	14	0	0	0	40	4	14
WBT	105	41	216	116	45	239	65	54	58	181	99	297
4 Rte 161/Old Rte 17							0	0	0			
NBL	1	0	1	1	0	1	0	0	0	1	0	1
NBT	1	0	1	1	0	1	0	0	0	1	0	1
NBR	1	0	0	1	0	0	0	0	0	1	0	0
SBL	10	4	11	11	4	12	0	0	0	11	4	12
SBT	2	1	1	2	1	1	0	0	0	2	1	1
SBR	36	11	18	40	12	20	0	0	0	40	12	20
EBL	74	13	51	82	14	56	54	68	54	136	82	110
EBT	48	28	36	53	31	40	0	0	0	53	31	40
EBR	3	1	2	3	1	2	0	0	0	3	1	2
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	19	12	24	21	13	27	0	0	0	21	13	27
WBR	26	12	26	29	13	29	0	0	0	29	13	29
5 Rte 161/Rte 17 EB On-ramp							0	0	0			
NBT	101	25	76	112	28	84	54	68	54	166	95	138
SBT	48	16	30	53	18	33	0	0	0	53	18	33
SBR	105	41	214	116	45	236	65	54	58	181	99	294
6 Rte 161/Rte 17 WB On-ramp							0	0	0			
NBL	31	13	26	34	14	29	0	0	0	34	14	29
NBT	70	12	50	77	13	55	54	68	54	132	81	109
SBT	153	57	244	169	63	270	65	54	58	234	117	328
SBR	48	9	60	53	10	66	65	54	58	118	64	124
7 Rte 161/Rte 17 WB Off-ramp							0	0	0			
NBT	70	12	50	77	13	55	54	68	54	132	81	109
SBT	163	59	286	180	65	316	131	107	116	311	172	432
WBL	38	7	18	42	8	20	0	0	0	42	8	20
WBR	371	57	96	410	63	106	54	68	54	464	131	160
8 Rte 161/Old County Highway							0	0	0			
NBT	434	67	145	480	74	160	109	135	107	588	209	268
NBR	7	2	1	8	2	1	0	0	0	8	2	1
SBL	5	1	1	6	1	1	0	0	0	6	1	1
SBT	162	57	280	179	63	309	131	107	116	310	170	425
WBL	1	2	6	1	2	7	0	0	0	1	2	7
WBR	1	3	2	1	3	2	0	0	0	1	3	2
17W Route 17 west of Interchange 107							0	0	0			
EBT	1465	1220	2180	1619	1348	2409	950	1088	989	2569	2436	3398
WBT	1965	1175	1030	2171	1298	1138	1276	1150	992	3448	2449	2130
17E Route 17 east of Interchange 107							0	0	0			
EBT	1795	1262	2208	1983	1395	2440	962	1074	993	2945	2469	3433
WBT	2022	1195	1155	2234	1320	1276	1265	1164	988	3500	2485	2264

BUILD							0	0	0			
1B Rte 17 EB Off-ramp/Old Rte 17							0	0	0			
SBL	64	18	77	71	20	85	54	68	54	125	87	139
SBR	20	7	27	22	8	30	0	0	0	22	8	30
EBL	31	4	13	34	4	14	0	0	0	34	4	14
EBT	61	24	12	67	27	13	0	0	0	67	27	13
WBT	51	23	43	56	25	48	0	0	0	56	25	48
WBR	5	0	0	6	0	0	65	54	58	71	54	58
4B Rte 161/Old Rte 17							0	0	0			
NBL	1	0	1	1	0	1	0	0	0	1	0	1
NBT	1	0	1	1	0	1	0	0	0	1	0	1
NBR	1	0	0	1	0	0	0	0	0	1	0	0
SBL	10	4	11	11	4	12	0	0	0	11	4	12
SBT	2	1	1	2	1	1	0	0	0	2	1	1
SBR	36	11	18	40	12	20	65	54	58	105	66	78
EBL	74	13	51	82	14	56	54	68	54	136	82	110
EBT	48	28	36	53	31	40	0	0	0	53	31	40
EBR	3	1	2	3	1	2	0	0	0	3	1	2
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	19	12	24	21	13	27	0	0	0	21	13	27
WBR	26	12	26	29	13	29	0	0	0	29	13	29
9B Rte 161/Foss Road							0	0	0			
NBT	434	67	145	480	74	160	109	135	107	588	209	268
NBR	7	2	1	8	2	1	0	0	0	8	2	1
SBL	5	1	1	6	1	1	0	0	0	6	1	1
SBT	162	57	280	179	63	309	131	107	116	310	170	425
WBL	1	2	6	1	2	7	0	0	0	1	2	7
WBR	1	3	2	1	3	2	0	0	0	1	3	2
10B Rte 161/Project Site Driveway							0	0	0			
NBT	435	70	147	481	77	162	109	135	107	589	212	270
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	167	58	281	185	64	311	131	107	116	315	171	426
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0	0	0	0

Build = existing volumes assigned to build network.

					Annual Rate (%):		10.5%						
					Design Year:		2018						
					Years:		1						
					Factor:		1.105						
		2010 (Exist) Peak Hour			Design Year Base			Total Background Trips			Build		
		Fri PM	Sat PM	Sun PM	Fri PM	Sat PM	Sun PM	Fri PM	Sat PM	Sun PM	Fri PM	Sat PM	Sun PM
EXISTING								0	0	0			
1	Rte 17 EB Off-ramp/Old Rte 17							0	0	0			
	SBL	64	18	77	71	20	85	241	322	261	311	342	346
	SBR	20	7	27	22	8	30	0	0	0	22	8	30
	EBT	92	28	25	102	31	28	9	13	10	111	44	38
	WBT	51	23	43	56	25	48	11	10	12	68	35	60
2	Rte 17 EB On Con./Old Rte 17							0	0	0			
	EBL	31	4	13	34	4	14	0	0	0	34	4	14
	EBT	125	42	89	138	46	98	250	334	271	388	381	369
	WBT	51	23	43	56	25	48	11	10	12	68	35	60
	WBR	5	0	0	6	0	0	0	0	0	6	0	0
3	17 EB On Con./Rte 17 EB On Ramp							0	0	0			
	NBL	36	4	13	40	4	14	0	0	0	40	4	14
	WBT	105	41	216	116	45	239	701	617	760	817	662	999
4	Rte 161/Old Rte 17							0	0	0			
	NBL	1	0	1	1	0	1	0	0	0	1	0	1
	NBT	1	0	1	1	0	1	0	0	0	1	0	1
	NBR	1	0	0	1	0	0	0	0	0	1	0	0
	SBL	10	4	11	11	4	12	11	10	12	22	14	25
	SBT	2	1	1	2	1	1	0	0	0	2	1	1
	SBR	36	11	18	40	12	20	11	10	12	51	22	32
	EBL	74	13	51	82	14	56	250	334	271	332	349	327
	EBT	48	28	36	53	31	40	0	0	0	53	31	40
	EBR	3	1	2	3	1	2	0	0	0	3	1	2
	WBL	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	19	12	24	21	13	27	0	0	0	21	13	27
	WBR	26	12	26	29	13	29	9	13	10	38	26	39
5	Rte 161/Rte 17 EB On-ramp							0	0	0			
	NBT	101	25	76	112	28	84	259	347	281	371	374	365
	SBT	48	16	30	53	18	33	23	20	25	76	38	58
	SBR	105	41	214	116	45	236	701	617	760	817	662	996
6	Rte 161/Rte 17 WB On-ramp							0	0	0			
	NBL	31	13	26	34	14	29	0	0	0	34	14	29
	NBT	70	12	50	77	13	55	259	347	281	337	360	336
	SBT	153	57	244	169	63	270	724	637	785	893	700	1054
	SBR	48	9	60	53	10	66	292	255	311	345	265	377
7	Rte 161/Rte 17 WB Off-ramp							0	0	0			
	NBT	70	12	50	77	13	55	259	347	281	337	360	336
	SBT	163	59	286	180	65	316	1016	892	1095	1196	957	1411
	WBL	38	7	18	42	8	20	0	0	0	42	8	20
	WBR	371	57	96	410	63	106	578	778	632	988	841	738
8	Rte 161/Old County Highway							0	0	0			
	NBT	434	67	145	480	74	160	837	1124	913	1317	1199	1073
	NBR	7	2	1	8	2	1	0	0	0	8	2	1
	SBL	5	1	1	6	1	1	0	0	0	6	1	1
	SBT	162	57	280	179	63	309	1016	892	1095	1195	955	1405
	WBL	1	2	6	1	2	7	0	0	0	1	2	7
	WBR	1	3	2	1	3	2	0	0	0	1	3	2
17W	Route 17 west of Interchange 107							0	0	0			
	EBT	1465	1220	2180	1619	1348	2409	1105	1316	1168	2724	2664	3577
	WBT	1965	1175	1030	2171	1298	1138	1477	1319	1219	3648	2617	2357
17E	Route 17 east of Interchange 107							0	0	0			
	EBT	1522	1240	2303	1682	1370	2545	1566	1612	1667	3247	2982	4212
	WBT	2022	1195	1155	2234	1320	1276	1762	1841	1540	3996	3162	2816

BUILD							0	0	0			
1B Rte 17 EB Off-ramp/Old Rte 17							0	0	0			
SBL	64	18	77	71	20	85	241	322	261	311	342	346
SBR	20	7	27	22	8	30	0	0	0	22	8	30
EBL	31	4	13	34	4	14	0	0	0	34	4	14
EBT	61	24	12	67	27	13	9	13	10	77	39	23
WBT	51	23	43	56	25	48	11	10	12	68	35	60
WBR	110	41	214	122	45	236	701	617	760	823	662	996
4B Rte 161/Old Rte 17							0	0	0			
NBL	1	0	1	1	0	1	0	0	0	1	0	1
NBT	1	0	1	1	0	1	0	0	0	1	0	1
NBR	1	0	0	1	0	0	0	0	0	1	0	0
SBL	10	4	11	11	4	12	11	10	12	22	14	25
SBT	2	1	1	2	1	1	0	0	0	2	1	1
SBR	141	52	232	156	57	256	713	627	772	868	685	1029
EBL	74	13	51	82	14	56	250	334	271	332	349	327
EBT	48	28	36	53	31	40	0	0	0	53	31	40
EBR	3	1	2	3	1	2	0	0	0	3	1	2
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	19	12	24	21	13	27	0	0	0	21	13	27
WBR	26	12	26	29	13	29	9	13	10	38	26	39
9B Rte 161/Foss Road							0	0	0			
NBT	434	67	145	480	74	160	837	1124	913	1317	1199	1073
NBR	7	2	1	8	2	1	0	0	0	8	2	1
SBL	5	1	1	6	1	1	0	0	0	6	1	1
SBT	162	57	280	179	63	309	1016	892	1095	1195	955	1405
WBL	1	2	6	1	2	7	0	0	0	1	2	7
WBR	1	3	2	1	3	2	0	0	0	1	3	2
10B Rte 161/Project Site Driveway							0	0	0			
NBT	435	70	147	481	77	162	76	95	75	557	172	238
NBR	0	0	0	0	0	0	761	1030	838	761	1030	838
SBL	0	0	0	0	0	0	169	229	186	169	229	186
SBT	167	58	281	185	64	311	92	75	81	276	139	392
WBL	0	0	0	0	0	0	924	817	1014	924	817	1014
WBR	0	0	0	0	0	0	206	182	226	206	182	226

Build = existing volumes assigned to build network.

					Annual Rate (%):		10.5%			
					Design Year:		2018			
					Years:		1			
					Factor:		1.105			
		2010 (Exist) Peak Hour			Design Year Base			Cumulative Build		
		Fri PM	Sat PM	Sun PM	Fri PM	Sat PM	Sun PM	Fri PM	Sat PM	Sun PM
EXISTING										
1	Rte 17 EB Off-ramp/Old Rte 17									
	SBL	64	18	77	71	20	85	610	661	627
	SBR	20	7	27	22	8	30	22	8	30
	EBT	92	28	25	102	31	28	108	40	35
	WBT	51	23	43	56	25	48	64	32	56
2	Rte 17 EB On Con./Old Rte 17									
	EBL	31	4	13	34	4	14	34	4	14
	EBT	125	42	89	138	46	98	684	696	648
	WBT	51	23	43	56	25	48	64	32	56
	WBR	5	0	0	6	0	0	6	0	0
3	17 EB On Con./Rte 17 EB On Ramp									
	NBL	36	4	13	40	4	14	40	4	14
	WBT	105	41	216	116	45	239	721	586	889
4	Rte 161/Old Rte 17									
	NBL	1	0	1	1	0	1	1	0	1
	NBT	1	0	1	1	0	1	1	0	1
	NBR	1	0	0	1	0	0	1	0	0
	SBL	10	4	11	11	4	12	19	11	21
	SBT	2	1	1	2	1	1	2	1	1
	SBR	36	11	18	40	12	20	48	19	29
	EBL	74	13	51	82	14	56	627	664	606
	EBT	48	28	36	53	31	40	53	31	40
	EBR	3	1	2	3	1	2	3	1	2
	WBL	0	0	0	0	0	0	0	0	0
	WBT	19	12	24	21	13	27	21	13	27
	WBR	26	12	26	29	13	29	35	22	36
5	Rte 161/Rte 17 EB On-ramp									
	NBT	101	25	76	112	28	84	664	686	640
	SBT	48	16	30	53	18	33	69	32	51
	SBR	105	41	214	116	45	236	721	586	887
6	Rte 161/Rte 17 WB On-ramp									
	NBL	31	13	26	34	14	29	34	14	29
	NBT	70	12	50	77	13	55	629	672	612
	SBT	153	57	244	169	63	270	790	617	938
	SBR	48	9	60	53	10	66	645	539	703
7	Rte 161/Rte 17 WB Off-ramp									
	NBT	70	12	50	77	13	55	629	672	612
	SBT	163	59	286	180	65	316	1393	1148	1621
	WBL	38	7	18	42	8	20	42	8	20
	WBR	371	57	96	410	63	106	959	718	660
8	Rte 161/Old County Highway									
	NBT	434	67	145	480	74	160	1581	1388	1270
	NBR	7	2	1	8	2	1	8	2	1
	SBL	5	1	1	6	1	1	6	1	1
	SBT	162	57	280	179	63	309	1392	1146	1614
	WBL	1	2	6	1	2	7	1	2	7
	WBR	1	3	2	1	3	2	1	3	2
17W	Route 17 west of Interchange 107									
	EBT	1465	1220	2180	1619	1348	2409	3608	3506	4439
	WBT	1965	1175	1030	2171	1298	1138	4520	3481	3228
17E	Route 17 east of Interchange 107									
	EBT	1522	1240	2303	1682	1370	2545	3737	3427	4684
	WBT	2022	1195	1155	2234	1320	1276	4540	3629	3283

BUILD

1B Rte 17 EB Off-ramp/Old Rte 17									
SBL	64	18	77	71	20	85	610	661	627
SBR	20	7	27	22	8	30	22	8	30
EBL	31	4	13	34	4	14	34	4	14
EBT	61	24	12	67	27	13	74	35	20
WBT	51	23	43	56	25	48	64	32	56
WBR	110	41	214	122	45	236	726	586	887
4B Rte 161/Old Rte 17									
NBL	1	0	1	1	0	1	1	0	1
NBT	1	0	1	1	0	1	1	0	1
NBR	1	0	0	1	0	0	1	0	0
SBL	10	4	11	11	4	12	19	11	21
SBT	2	1	1	2	1	1	2	1	1
SBR	141	52	232	156	57	256	768	605	916
EBL	74	13	51	82	14	56	627	664	606
EBT	48	28	36	53	31	40	53	31	40
EBR	3	1	2	3	1	2	3	1	2
WBL	0	0	0	0	0	0	0	0	0
WBT	19	12	24	21	13	27	21	13	27
WBR	26	12	26	29	13	29	35	22	36
9B Rte 161/Foss Road									
NBT	434	67	145	480	74	160	1581	1388	1270
NBR	7	2	1	8	2	1	8	2	1
SBL	5	1	1	6	1	1	6	1	1
SBT	162	57	280	179	63	309	1392	1146	1614
WBL	1	2	6	1	2	7	1	2	7
WBR	1	3	2	1	3	2	1	3	2
10B Rte 161/Project Site Driveway									
NBT	435	70	147	481	77	162	818	356	431
NBR	0	0	0	0	0	0	764	1035	842
SBL	0	0	0	0	0	0	166	224	182
SBT	167	58	281	185	64	311	468	326	596
WBL	0	0	0	0	0	0	929	821	1019
WBR	0	0	0	0	0	0	201	178	221

Build = existing volumes assigned to build network.

Appendix G

Market Analysis

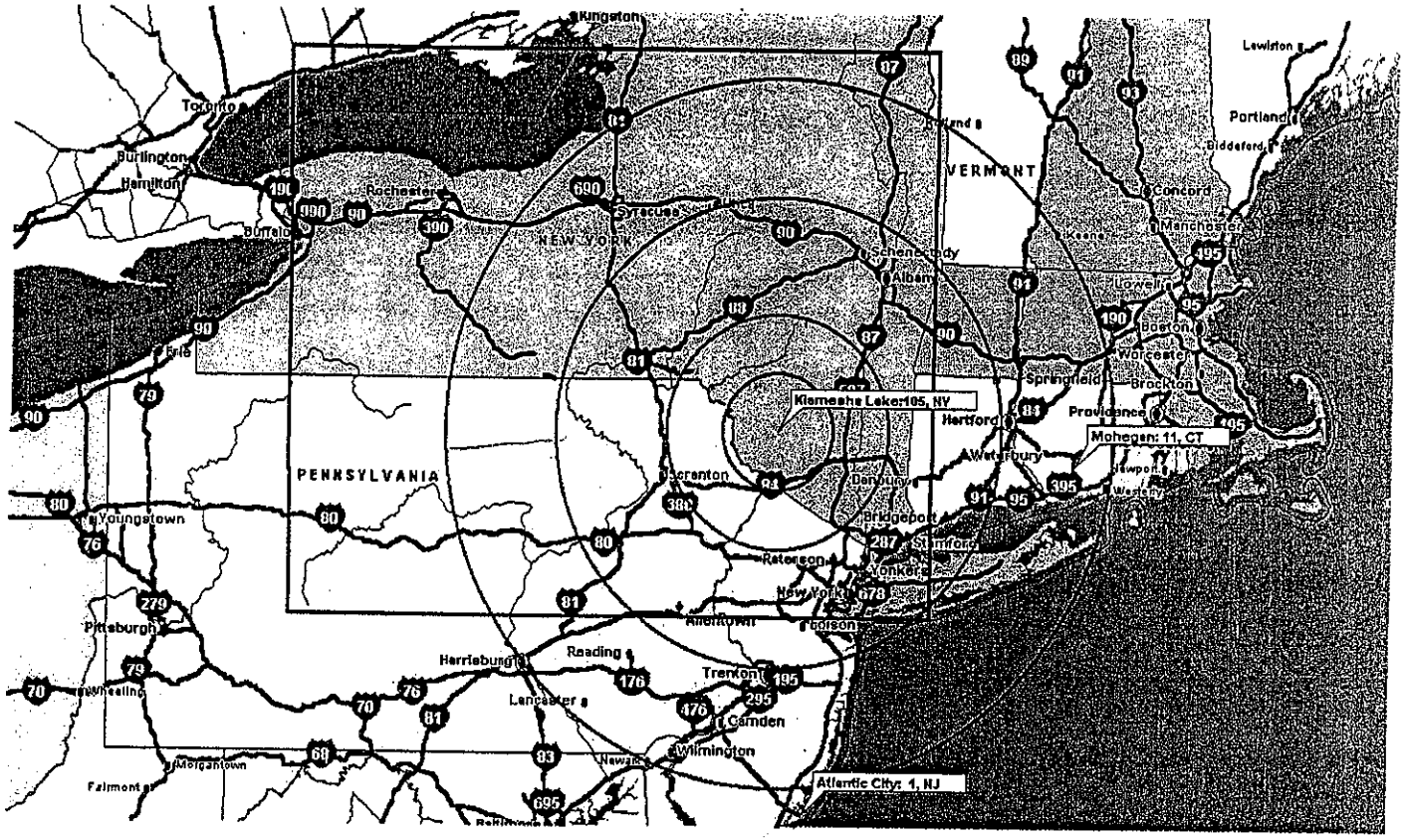
Close proximity to major metropolitan areas

In 2004, when the casino is expected to be opened for its first full year:

Within 50 miles there are expected to be 1.0 million adults

Within 100 miles there are expected to be 13.9 million adults

Within 150 miles there are expected to be 15.3 million adults



Market demographic assumptions

- Kiamesha Lake, NY has been selected as a representative location in the Catskill region
- Four concentric rings were defined around Kiamesha Lake in increments of 0 to 25, 25 to 50, 50 to 100 and 100 to 150 miles (Manhattan, Brooklyn and Queens, the New York MSA area is located in the 50 to 100 mile ring)
- The concentric rings have been truncated along lines equidistant between Kiamesha Lake and Atlantic City, NJ and between Kiamesha Lake and Montville/Ledyard, CT
  - only those people residing closer to Kiamesha Lake than either Atlantic City or Montville/Ledyard have been included in the concentric rings
- The propensity estimate in the 100 to 150 mile range has been adjusted to reflect the presence of Turning Stone Casino in Verona, NY
- The win analysis assumes that two casinos are operating Las Vegas/Atlantic City style gaming facilities
- Market win information is presented in constant 1999 dollars

Total market potential

Win analysis
Kiamesha Lake, NY – 1999 dollars

(is part of)

	0 – 25 miles	25 – 50 miles	50 – 100 miles	100 – 150 miles	New York MSA (Part)	>150 mile
Adult population in 2004	149,782	872,218	8,501,244	1,454,510	4,366,764	
Propensity	33%	30%	25%	10%	10%	2%
Number of trips annually	6.0	6.0	3.0	2.0	2.0	1
Gamer visits	296,568	1,569,992	6,375,933	290,902	873,353	170668
	3.5%	18%	− 873353 for NYC 5502580 63% (excluding NYC)	3.5%	10%	2%

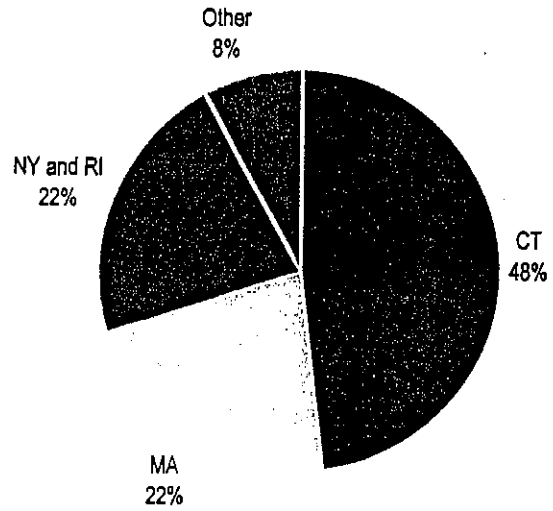
Total visits (98%) = 8533395

100% = 8704063 annual visitors

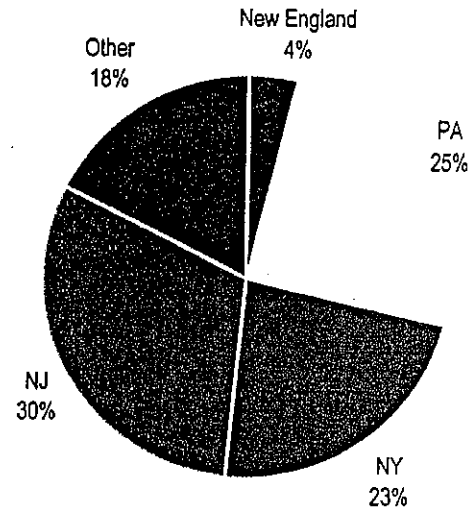
Connecticut/Atlantic City player profile

The Connecticut gaming market draws the majority of their visitors from the local area, while Atlantic City attracts more patrons from further distances

Connecticut



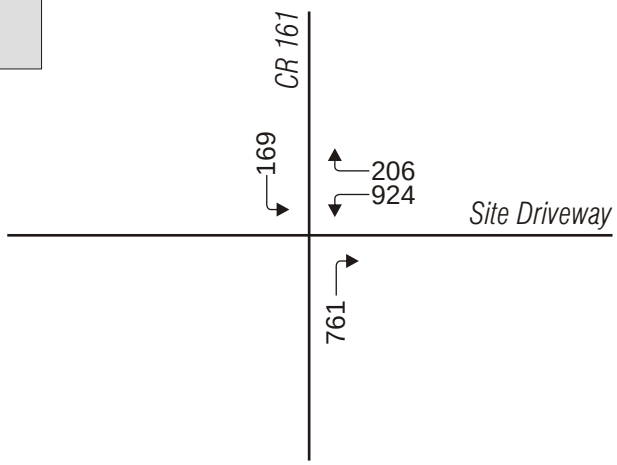
Atlantic City



Appendix H

Proposed Project Trips (New Trips Only)

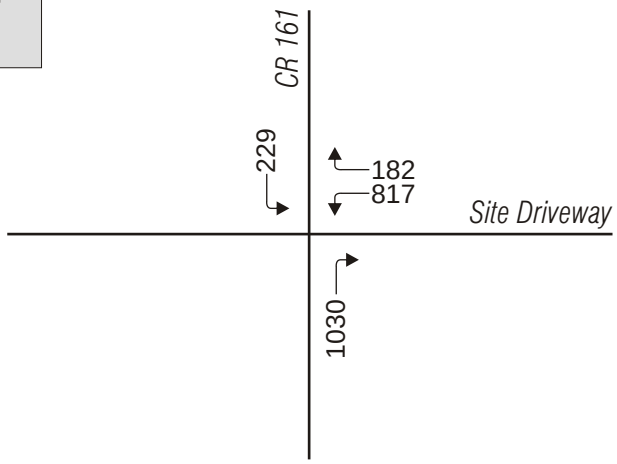
Friday Afternoon Peak Hour
(4:45 PM - 5:45 PM)



Project Trips

930	IN
1,130	OUT
2,060	TOTAL

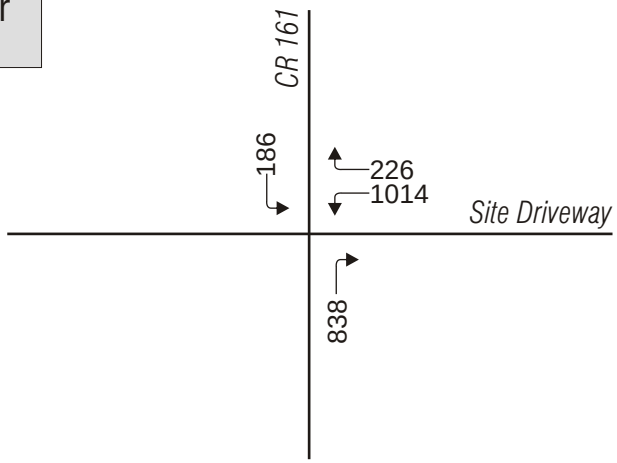
Saturday Evening Peak Hour
(7:30 PM - 8:30 PM)



Project Trips

1,259	IN
999	OUT
2,258	TOTAL

Sunday Afternoon Peak Hour
(4:00 PM - 5:00 PM)



Project Trips

1,024	IN
1,240	OUT
2,264	TOTAL

Not to Scale

Note: Traffic volumes include the effects of shared trips.

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

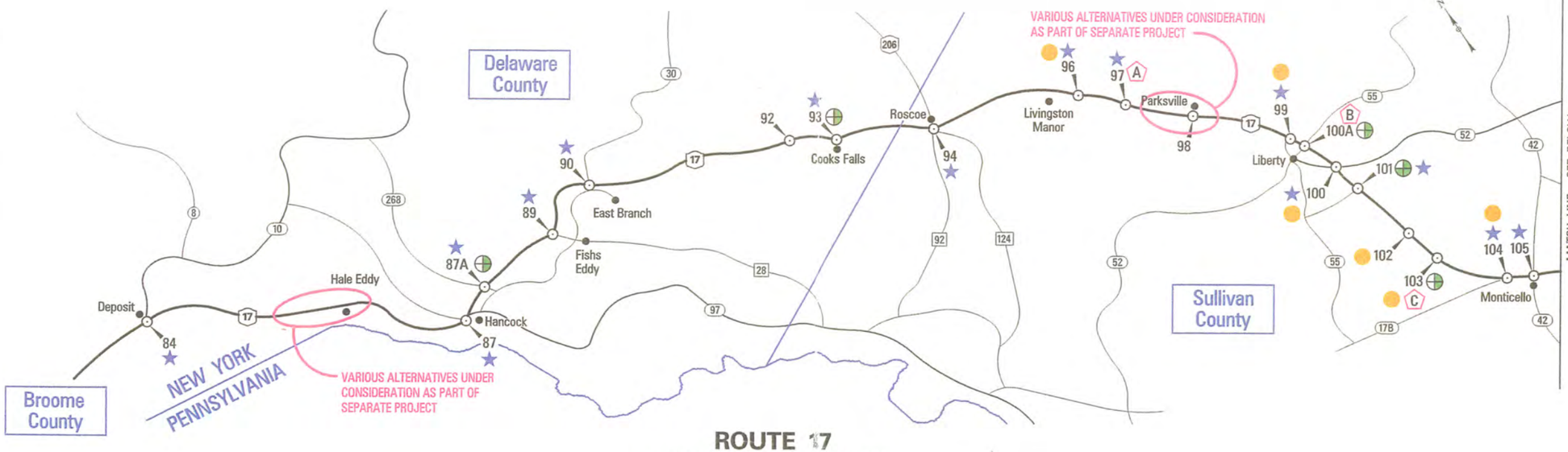
Proposed Project Trips - Peak Month Conditions

Figure H

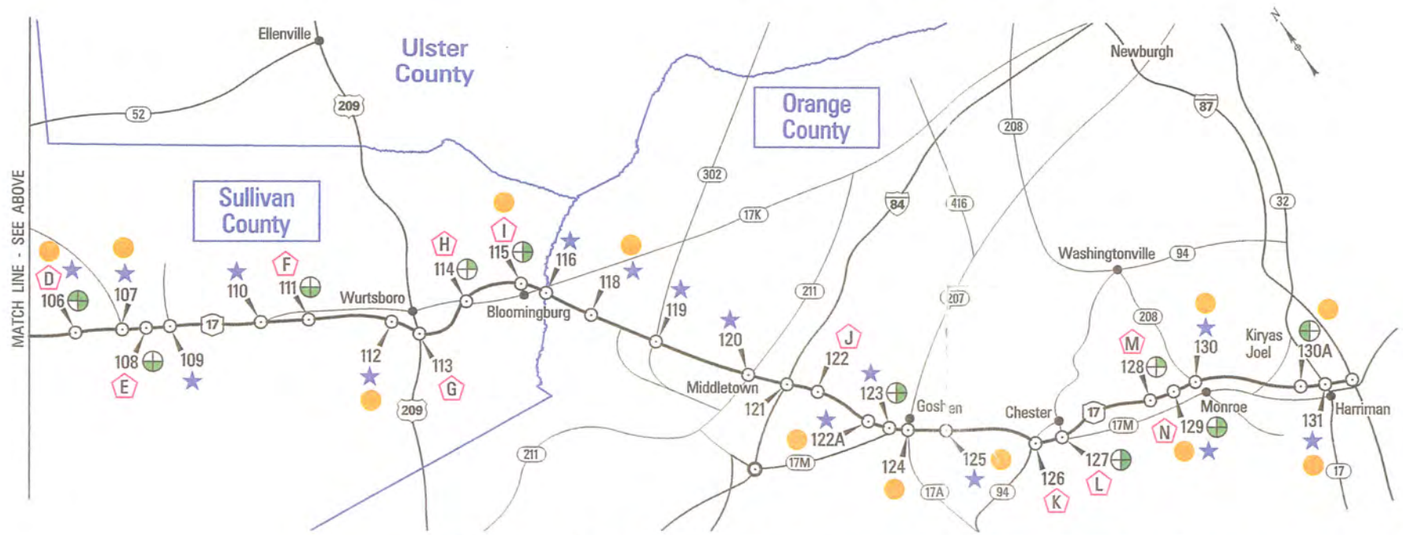
Appendix I

NYSDOT State Route 17 Interchange Improvements

PROJECT CORRIDOR MAP - ROUTE 17 INTERCHANGE SPACING & GEOMETRICS STUDY



ROUTE 17
PROJECT CORRIDOR
EXIT 84 TO EXIT 131



FINAL CORRIDOR PLAN SUMMARY

LEGEND

- EXISTING INTERCHANGE
- ROUTE 17
- COUNTY ROUTE
- STATE ROUTE
- PARTIAL INTERCHANGE ACCESS (SEE DIAGRAM A)
- GENERAL GEOMETRIC, OPERATIONAL, AND ACCIDENT RELATED IMPROVEMENTS
- INCREASE BRIDGE VERTICAL CLEARANCE VIA BRIDGE RAISING, MAINLINE LOWERING, OR BOTH
- MAJOR INTERCHANGE MODIFICATIONS: CLOSURE, NEW LOCATION, OR UPGRADE TO FULLY DIRECTIONAL - SEE CORRIDOR PLAN SUMMARY INSERT

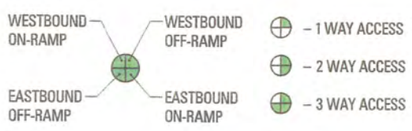


DIAGRAM A

PIN P108.20
ROUTE 17 INTERCHANGE
SPACING AND GEOMETRICS STUDY

Executive Summary

Exit No.	Name	General Improvements ★	Vertical Clear. ●	Final Recommendations	Cost
84	Deposit/Walton	★		Replace Yield with Stop sign on WB off-ramp, add rumble strips and chevron signs prior to horizontal curve.	$5,000
87	Hancock	★		Reconstruct and upgrade EB off-ramp with standard horizontal radius.	$1,225,000
87A	Cadosia/Hancock	★		Realign skewed intersection of EB on-ramp and Green Flats Road, realign WB off-ramp to intersect RT 990P / RT 268, install directional signage to exit 87, and maintain partial interchange.	$550,000
89	Fishs Eddy	★		Realign intersection of CR17 and WB ramps, realign EB off-ramp to intersect at CR17/CR28 intersection, upgrade intersection of CR17 and EB on-ramp.	$750,000
90	East Branch/Downsville	★		Realign CR 17 as necessary to allow realignment of WB on-ramp to intersect NYS Rt. 30.	$1,225,000
92	Horton/Cooks Fall			No improvements recommended. Install direction signage between ramps.	$15,000
93	Cooks Falls	★		Reconstruct WB off-ramp with standard radius and deceleration lane, install directional signage to exit 92 and maintain partial interchange.	$600,000
94	Roscoe/Oneonta	★		Clear vegetation adjacent to CR17 to increase sight distance, prohibit direct parking lot access from EB off-ramp.	$40,000
96	Livingston Manor	★	●	Reconstruct WB on-ramp with standard horizontal radius and vertical grade, relocate gravel parking area, and improve directional signage between ramps. Reconstruct bridge to provide required vertical clearance.	$2,475,000
97	Morsston	★		(A) Reconstruct to conventional fully directional interchange.	$2,125,000
99	Liberty, N. Main St.	★	●	Extend EB/WB acceleration lanes. Reconstruct bridge to provide required vertical clearance.	$2,625,000
100A	NY 52 West and NY 55, Liberty			(B) Short term install direction signage to exit 100, long term upgrade to fully directional interchange. (Improvements not required for Interstate designation).	$15,000 – $2,275,000
100	NY 52 Liberty	★	●	Realign South Main Street (Rt. 52) and EB off-ramp intersection; modify WB on-ramp and Clements Road intersections; extend WB acceleration lane; and improve access control at car dealership. Reconstruct bridge to provide required vertical clearance.	$7,425,000

★ - General geometric, operational, and accident related improvements

● - Increase bridge clearance via bridge raising, mainline lowering, or both

⬠ - Major interchange modifications: closure, new location, or upgrade to fully directional

PIN P108.20
ROUTE 17 INTERCHANGE
SPACING AND GEOMETRICS STUDY

Executive Summary

Exit No.	Name	General Improvements ★	Vertical Clear. ●	Final Recommendations	Cost
101	Ferndale, Swan Lake	★		Realign EB ramps intersection with CR71, and CR71 intersection with CR175, extend EB acceleration lane, install directional signage to exit 100, and maintain partial interchange.	$550,000
102	Harris, Bushville		●	Reconstruct interchange considering three alternatives for improved hospital access. Lower mainline to provide required bridge clearance (Improvement to hospital access is not required for interstate designation).	$4,525,000 – $7,400,000
103	Rapp Road		●	C Construct fully directional interchange considering three alternatives. Reconstruct bridge to provide required vertical clearance.	$4,475,000 – $5,325,000
104	Raceway, Monticello	★	●	Provide improved southbound left turn access to EB on ramp and extend EB acceleration lane. Reconfigure intersection of CR 174 and the WB ramp connector road. Lower mainline to provide required bridge clearance.	$3,675,000
105	Kiamesha, Monticello	★		Investigating three alternatives to address traffic flow and safety concerns. (Improvements not required for interstate designation).	$0 – $4,475,000
106	East Monticello	★	●	D Upgrade to fully directional interchange being developed under PIN 9066.87. Reconstruct bridge to provide required vertical clearance.	$6,325,000
107	Bridgeville, South Fallsburg	★	●	Reconstruct EB off-ramp with standard horizontal radius, reconstruct existing slip ramp from CR 173 to EB on-ramp, extend EB acceleration, reconstruct existing left turn slip ramps at CR 166 and the Route 17 WB ramps. Reconstruct bridge to provide required vertical clearance.	$2,400,000
108	Bridgeville			E Close Interchange, divert traffic to 109.	$175,000
109	Rockhill, Woodridge	★		Reconstruct ramps to Interstate standards considering three alternatives.	$2,075,000 – $4,750,000
110	Lake LouiseMarie, Wanaksink Lake	★		Upgrade ramps to Interstate standards at current location. Reconstruct EB on-ramp and clear vegitation along WB ramps.	$150,000
111	Wolf Lake			F Close Interchange and divert traffic to upgraded exit 110.	$25,000

★ - General geometric, operational, and accident related improvements

● - Increase bridge clearance via bridge raising, mainline lowering, or both

⬠ - Major interchange modifications: closure, new location, or upgrade to fully directional

PIN P108.20
ROUTE 17 INTERCHANGE
SPACING AND GEOMETRICS STUDY

Executive Summary

Exit No.	Name	General Improvements ★	Vertical Clear. ●	Final Recommendations	Cost
112	Masten Lake, Yankee Lake	★	●	Construct new EB on-ramp opposite the existing EB off-ramp, remove the existing EB off-ramp and construct a cul-de-sac, realign CR 166/166A to accommodate through movements, reconstruct the WB on-ramp with standard horizontal radius, extend WB acceleration lane. Reconstruct bridge to provide required vertical clearance.	$4,575,000
113	US 209 Wurtsboro Ellenville			G To be reconstructed under PIN 9177.12.	
114	Wurtsboro, Highview			H Due to community input and environmental/social/economic considerations a more detailed study of this interchange will be progressed as a separate NYSDOT project, considering closure and upgrade to fully directional.	$125,000 – $9,000,000
115	Burlingham Road		●	I Upgrade to full interchange. Realign Roosa Gap Road for improved spacing with Route 17 mainline and ramps, and remove gravel drive at EB ramp terminus. Reconstruct bridge to provide required vertical clearance.	$4,725,000
116	Montgomery / Bloomingburg	★		Extend EB and WB acceleration lanes. (Improvements not required for interstate designation)	$125,000
118	Fair Oaks	★	●	Extend EB and WB acceleration lanes, improve the intersection of the WB off-ramp with Brown Road and Motel Drive. Reconstruct bridge to provide required vertical clearance.	$2,825,000
119	Pine Bush	★		Upgrade interchange geometrics considering two alternatives.	$2,050,000 – $2,850,000
120	Middletown / Mongomery	★		Extend EB and WB deceleration lanes, extend WB acceleration lane. (Improvements not required for Interstate designation)	$300,000
121	Newburgh/Port Jervis			Maintain existing interchange.	$0
122	East Main Street /Crystal Run Road			J Proposed reconstruction under separate project (PIN 8006.48).	
122A	Fletcher Street /Goshen	★	●	Reconstruction of all of the ramps and the cross road connecting Cheechunk Road and Fletcher Street required due to bridge vertical clearance improvements. Reconstruct bridge to provide required vertical clearance.	$5,400,000

★ - General geometric, operational, and accident related improvements
● - Increase bridge clearance via bridge raising, mainline lowering, or both
⬠ - Major interchange modifications: closure, new location, or upgrade to fully directional

PIN P108.20
ROUTE 17 INTERCHANGE
SPACING AND GEOMETRICS STUDY

Executive Summary

Exit No.	Name	General Improvements ★	Vertical Clear. ●	Final Recommendations	Cost
123	Middletown/Port Jervis	★		Realign the intersection of West Main Street/Matthews Street/WB off-ramp. Maintain partial interchange.	$350,000
124	Florida Goshen		●	Raise bridge to provide required bridge clearance. Maintain existing Interchange.	$525,000
125	South Street	★	●	Upgrade interchange geometrics considering two alternatives. Reconstruct bridge to provide required vertical clearance.	$7,000,000 – $10,150,000
126	Chester/Florida			K Proposed reconstruction under separate project (PIN 8006.56).	
127	Greycourt Road/ Sugarloaf/Warwick			L Construct a new fully direction interchange considering two alternatives	$4,675,000 – $5,600,000
128	Oxford Depot			M Close Interchange, divert traffic to upgraded Exit 127.	$75,000
129	Museum Village Road	★	●	N Upgrade to full interchange. Reconstruct WB off-ramp to intersect with with Museum Village Road, reconstruct EB on-ramp from Orange Rockland Road. Lower EB mainline to provide required bridge clearance.	$6,575,000
130	Monroe/ Washingtonville	★	●	Eliminate break in access along EB on ramp right turn lane on NY Route 208. Lower mainline to provide required bridge clearance.	$1,300,000
130A	Bear Mountain		●	Lower mainline to provide required bridge clearance.	$1,550,000
131	Newburgh/Suffern	★	●	Reconstruct WB off-ramp with standard horizontal radius and reconstruct the direct connection from the WB off-ramp into Woodbury Commons considering alternatives A or C. Lower mainline to provide required bridge clearance.	$2,425,000 – $4,425,000
				TOTAL	$88,050,000 – $116,935,000

★ - General geometric, operational, and accident related improvements

● - Increase bridge clearance via bridge raising, mainline lowering, or both

⬠ - Major interchange modifications: closure, new location, or upgrade to fully directional

Appendix J

Regional Traffic Volume Forecasts

Trading Cove - Stockbridge-Munsee Casino
Thompson, NY
ADT Projections

Peak hour trips multiplied by 8.993 to represent daily trips 28,750 13,890 39,640

** Conservative growth rate used to factor volumes DOWN*

Route #	Segment	2009 AADT NYSDOT Data	2002 AADT (from counts)	Growth Rate*	Estimated 2001 AADT	Seasonal Adjustment Factor	Peak Month EXISTING ADT	% Bkrnd Project Trips	No-Build Bkrnd Proj. ADT	Peak Month NO-BUILD ADT	% Site Trips	Site Trips	Peak Month BUILD ADT	% Cumulative Trips	Cummulative Trips	Pk Month CUMMULATIVE BUILD ADT
Sullivan County:																
17	Delaware County Line -- Rte 206 & CR 124		4,880	1.5%	4,807	1.73	8,320	10.00%	2,875	11,200	5.00%	695	11,890	10.00%	3,964	15,850
17	Rte 206 & CR 124 -- Rte 17B Monticello Exit 104		10,750	1.5%	10,589	1.73	18,320	15.00%	4,313	22,630	5.00%	695	23,320	15.00%	5,946	29,270
17	Rte 17B Monticello Exit 104 -- Rte 42 Exit 105		18,180	1.5%	17,907	1.73	30,980	25.00%	7,188	38,170	10.00%	1,389	39,560	25.00%	9,910	49,470
17	Rte 42 Monticello Exit 105 -- Old Rte 17 CR 173		15,840	1.5%	15,602	1.73	26,990	30.00%	8,625	35,620	10.00%	1,389	37,010	30.00%	11,892	48,900
17	Old Rte 17 CR 173 -- CR 161 Bridgeville Exit 107	25887	25,270	1.5%	24,891	1.73	43,060	30.00%	8,625	51,690	15.00%	2,084	53,770	30.00%	11,892	65,660
17	CR 161 Bridgeville Exit 107 -- EB CR 173	22572	18,820	1.5%	18,538	1.73	32,070	30.00%	8,625	40,700	75.00%	10,418	51,120	30.00%	11,892	63,010
17	EB CR 173 -- Orange County Line	22711	20,190	1.5%	19,887	1.73	34,400	25.00%	7,188	41,590	70.00%	9,723	51,310	25.00%	9,910	61,220
17	Sullivan County Line -- Rte 211	27277	28,490	1.5%	28,063	1.73	48,550	25.00%	7,188	55,740	70.00%	9,723	65,460	25.00%	9,910	75,370
17	Rte 211 -- Start 6 17M Overlaps	40835	48,010	1.5%	47,290	1.73	81,810	20.00%	5,750	87,560	65.00%	9,029	96,590	20.00%	7,928	104,520
17	Start 6 17M Overlaps -- Rtes 207 & 17A	56698	58,070	1.5%	57,199	1.73	98,950	15.00%	4,313	103,260	60.00%	8,334	111,590	15.00%	5,946	117,540
17	Rtes 207 & 17A -- End Route 6 Overlap		53,930	1.5%	53,121	1.73	91,900	15.00%	4,313	96,210	60.00%	8,334	104,540	15.00%	5,946	110,490
17	End Rte 6 Overlap -- Route 32	42675	42,790	1.5%	42,148	1.73	72,920	15.00%	4,313	77,230	60.00%	8,334	85,560	15.00%	5,946	91,510
17	Rte 32 -- ACC I-87 Harriman		34,960	1.5%	34,436	1.73	59,570	10.00%	2,875	62,450	50.00%	6,945	69,400	10.00%	3,964	73,360
17	ACC I-87 Harriman -- Rtes 210 & 17A	11114	9,650	1.5%	9,505	1.73	16,440	10.00%	2,875	19,320	50.00%	6,945	26,270	10.00%	3,964	30,230
17	Rtes 210 & 17A -- Rockland County Line		16,270	1.5%	16,026	1.73	27,720	10.00%	2,875	30,600	50.00%	6,945	37,550	10.00%	3,964	41,510
I-87	Rockland County Line -- Interstate 16 Rts 6 & 7	90782	91,410	1.5%	90,039	1.50	135,060	10.00%	2,875	137,940	45.00%	6,251	144,190	10.00%	3,964	148,150
I-84	Start 52 Overlap -- Dutchess County Line		68980	1.5%	67,945	1.50	101,920	10.00%	2,875	104,800	15.00%	2,084	106,880	10.00%	3,964	110,840
6	Start of Rte 987 Overlap -- Rockland County Line		15,750	1.5%	15,514	1.21	18,770	5.00%	1,438	20,210	19.00%	2,639	22,850	5.00%	1,982	24,830
17K	CR 23 Rockcut Rd -- Start 32 Overlap		18,040	1.5%	17,769	1.21	21,500	1.00%	288	21,790	1.00%	139	21,930	1.00%	396	22,330
209	End Rte 6 Overlap -- CR 80 Neversink Dr.		6,880	1.5%	6,777	1.21	8,200	2.00%	575	8,780	2.00%	278	9,060	2.00%	793	9,850

Note: 2009 volumes are comparable to 2001 volumes. Retained 2001 volumes from DEIS to represent existing (baseline) conditions.

Appendix K

DEIS – FEIS Comparison

Total Entering Volumes

Friday PM Peak Hour

	Existing			No Build			Build			Cumulative Build		
Intersection	**2001**	**2010**	**% Change**	**2011**	**2018**	**% Change**	**2011**	**2018**	**% Change**	**2011**	**2018**	**% Change**
Proposed Site Drive/County Route 161	285	602	111.2%	376	777	106.6%	2436	2839	16.5%	2437	3315	36.0%
County Route 161/Old Route 17	227	221	-2.6%	418	277	-33.7%	1524	1397	-8.3%	1525	1625	6.6%
Route 17 EB On ramp/Route 17 Mainline												
Route 17 EB On ramp	150	141	-6.0%	223	183	-17.9%	791	1030	30.2%	654	954	45.9%
Route 17 EB Mainline	1458	1381	-5.3%	2896	2641	-8.8%	2663	2641	-0.8%	3075	3843	25.0%
Route 17 WB On ramp/Route 17 Mainline												
Route 17 WB On ramp	60	79	31.7%	95	110	15.8%	513	246	-52.0%	651	558	-14.3%
Route 17 WB Mainline	1920	1886	-1.8%	3370	3607	7.0%	3127	3607	15.4%	3494	4740	35.7%

Operating Level of Service

Friday PM Peak Hour

	Existing			No Build			Build			Cumulative Build		
Intersection	**2001**	**2010**	**Change[1]**	**2011**	**2018**	**Change[1]**	**2011**	**2018**	**Change[1]**	**2011**	**2018**	**Change[1]**
Proposed Site Drive/County Route 161	N/A	N/A		N/A	N/A		B	B	0	B	C	-
County Route 161/Old Route 17	A	A	0	B	B	0	B	B	0	B	A	+
Route 17 EB On ramp/Route 17 Mainline	N/C	N/C		N/C	N/C		C	D	-	D	F	--
Route 17 WB On ramp/Route 17 Mainline	N/C	N/C		N/C	N/C		D	D	0	D	F	--

[1.] Legend:

+ = Improvement in LOS

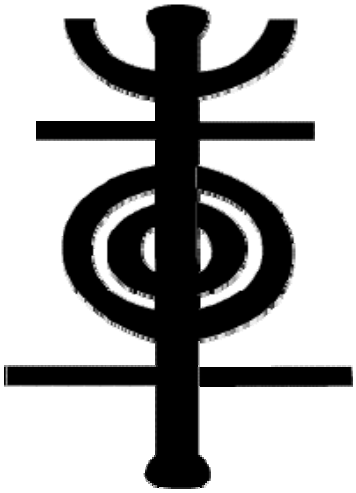
0 = No Change in LOS

- = Deterioration in LOS

Appendix C

Stockbridge - Munsee Casino Market Study

Stockbridge-Munsee Casino
Market Study



Presented to the Stockbridge-Munsee Community
Band of Mohican Indians

by AKRF, Inc.

September 29, 2010

AKRF

This market study evaluates and characterizes the gaming market for the proposed Stockbridge-Munsee Casino (the "Casino Project") in the Town of Thompson, Sullivan County, NY. The new facility is anticipated to encompass 150,000 square feet of gaming space and offer approximately 3,000 slots machines and 190 table games. Once completed, the facility will also include a 750-room hotel and other amenities that will add to the attractiveness of the destination.

Until 2004, major gaming destinations in the Northeast had fairly distinct trade areas with little overlap. Since then, the gaming landscape in the Northeast has evolved. New legislation facilitated the introduction of gaming activities at a number of racetracks in New York and Pennsylvania, and allowed gaming activities at non-racing locations in Pennsylvania. To account for the increase in gaming venues, this study maps racinos and casinos and their respective trade areas in Connecticut, New York, New Jersey, and Pennsylvania, and assesses how the new competition may affect visitation to the Casino Project. The study also evaluates and quantifies the number of slot machines and gaming tables necessary for the Casino Project to become a successful operation within its market area.

A. METHODOLOGY

EVALUATING THE TRADE AREA

The first step when evaluating the market for a gaming operation is to delineate appropriate trade areas from which the new facility will draw the majority of its visitors. The delineation of different trade areas is necessary because the propensity for repeat visitation varies depending on the physical distance of potential visitors to the gambling location. In general, casinos and racinos tend to generate far more repeat visitation from the immediately surrounding areas. For example, residents living within a 25-mile radius of a gaming facility tend to visit three to five times more often than residents living within a 120-mile radius.

In addition, gaming destinations such as Atlantic City, Mohegan Sun and Foxwoods in Connecticut, and the Philadelphia casinos have a high attraction potential, enabling them to attract visitors from far beyond their local trade area boundaries. These regional gaming destinations have the ability to attract a substantial number of visitors from within a two-hour drive time trade area, while racinos and smaller casinos tend to draw their customers almost exclusively from within 25-mile and 50-mile trade areas.

To assess the viability of the Casino Project's trade areas, AKRF evaluated the trade areas of other casino locations in the Northeast United States, including trade areas for Atlantic City casinos, Mohegan Sun/Foxwoods casinos, Philadelphia casinos, Sand Bethlehem, and Turning Stone. For each gaming destination the analysis identified:

- The adult population (i.e., population age 18 and older) within a 25-mile, 50-mile, and 60-mile drive-time radius of the gaming location. All three trade areas are typically

characterized by varying degrees of repeat visitation, with populations in the 25 and 50-mile trade accounting for the vast majority of visits (85 to 95 percent);

- The propensity to gamble, or the percentage of adults likely to participate in gambling activities in a given market. Propensity rates are based on metropolitan area averages identified by Richard K. Miller in his report: "Casino, Gaming and Wagering 2010"[1];
- The potential number of unique visitors from each of the trade area segments to the individual casino location;
- The frequency, or the number of times adult gamblers are likely to visit a casino; and
- The potential revenues for each of the selected trade areas, using average revenue-per-visit rates.

After evaluating these factors, the analysis compares and ranks trade areas of selected casino locations in the Northeast according to their visitation and expenditure potential.

EVALUATING ON-SITE DEMAND FOR SLOT MACHINES AND GAMING TABLES

To determine the suitable number of slot machines and gaming tables for the Casino Project, AKRF reviewed the number and mix of gaming venues in the Northeast. Racino and casino facilities in the Connecticut, New York, New Jersey, and Pennsylvania were identified as benchmarks, and for each facility information was collected about the square footage of gaming space, the number of slot machines and gaming tables, and hotel rooms available. The analysis then identified a typical number of slot machines and gaming tables at competing facilities, and from this information an average number (or range) of slot machines and gaming tables was developed for the Casino Project.

FINDINGS AND CONCLUSIONS

The Stockbridge-Munsee Casino Market Study incorporates findings and conclusions regarding the viability of the Stockbridge-Munsee Casino trade area and the type and number of gaming venues that could potentially impact visitation to the proposed casino, based on regional benchmarks for adult gambling population, number of gaming venues, hotel rooms, gaming expenditures, road infrastructure, travel times, and driving distances.

B. ESTIMATED VISITATION FOR SELECTED CASINO MARKETS IN EASTERN U.S.

Based on the experience of other large attractions and tourist destinations in the United States, and the findings of other casino market studies[2], it is common for the vast majority of visitation to any casino in the United States, with the exception of Las Vegas, to be generated by the region within a few hours drive time of a gaming location. For example, a market study conducted by the University of Connecticut in 2000 for the Foxwoods Casino Resort[3] indicated that about 95 percent of its visitors came from either Connecticut or its neighboring states.

[1] "Casinos, Gaming & Wagering 2010": Richard K. Miller & Associates, 2010

[2] "New York Racinos: Casinos of Convenience": HVS International, 2007

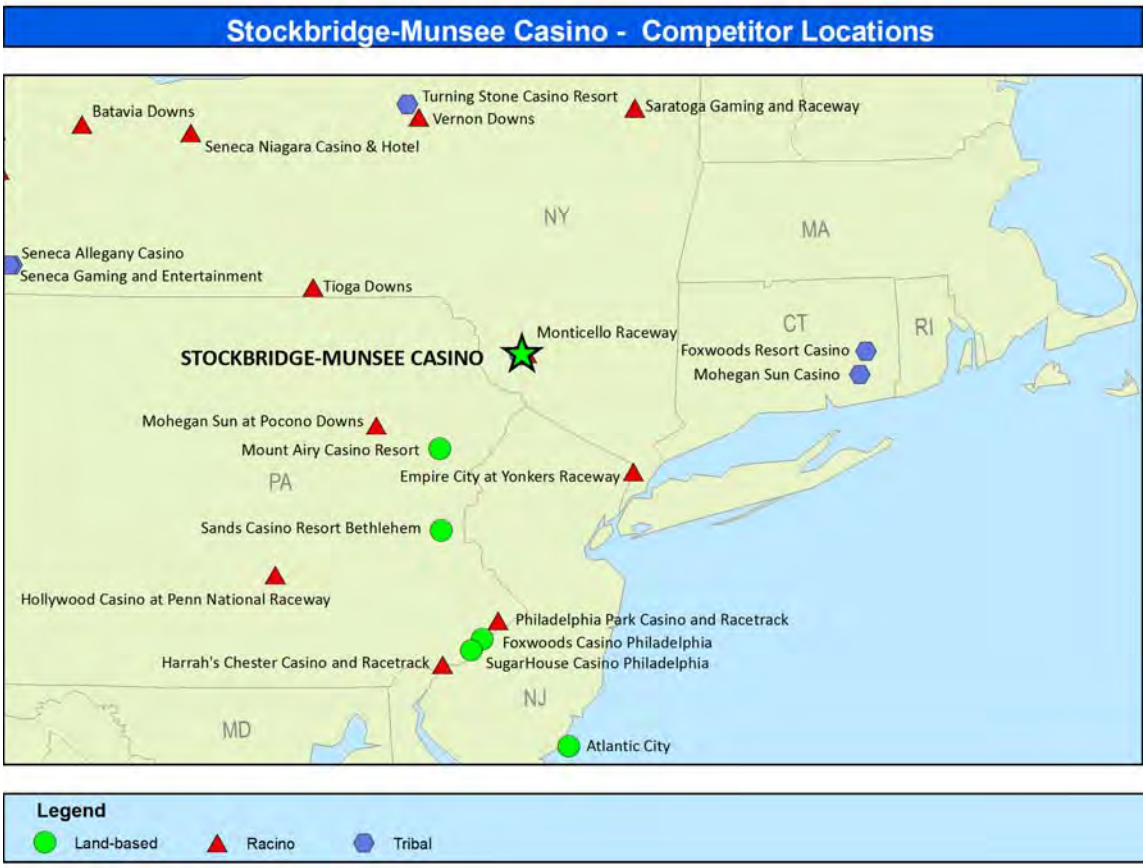
[3] "The Economic Impact of the Mashantucket Pequot Tribal Nation Operations in Connecticut": University of Connecticut Center for Economic, 2000

Analysis.

Likewise, according to the Atlantic City Convention Center & Visitors Authority from 2008, only 400,000, or 1.3 percent of the estimated 30 million visitors to Atlantic City take the train or fly, indicating that most visitors live within an easy driving distance. Market surveys indicate that drive times of a half hour, one hour, and two hours (or respectively 25 miles, 50 miles, and 120 miles) most accurately capture the trade areas of regional gaming facilities.

Delineating three distinct trade areas also allows the study to incorporate the potential effects of smaller casino and racinos facilities with a limited potential to draw visitation from beyond a 50-mile radius. Racinos are typically smaller gaming facilities and do not provide table games and other amenities offered by larger gaming destinations. Even larger racino facilities, such as the newly-opened Yonkers Raceway in Yonkers, New York, do not extend their reach beyond their local trade area. For the purpose of this study, racinos were assumed to attract their visitors only from within the 25- and 50-mile trade areas.

Figure 1: Existing Competing Racino and Casino Facilities



Source: AKRF, Inc., September 2010

Figure 1 shows an inventory of gaming locations in Connecticut, New York, New Jersey, and eastern Pennsylvania. Gaming facilities are categorized as racinos, tribal, or land-based casinos. Gambling was introduced in Pennsylvania in 2004, when as part of the Pennsylvania Race Horse Development and Gaming Act 14, gaming licenses were provided to operate gaming facilities at

existing horse tracks and a few new stand-alone casino locations. New gaming options were also introduced in New York State, when in 2005 racetracks were allowed, for the first time, to operate video lottery terminals (VLTs). Overall, new facilities in the two states added significant new competition the New York metro area market.

While it is anticipated that all gaming facilities, casinos and racinos will compete with each other for local visitors, only selected gaming destinations are expected to draw substantial visitation from beyond a 50-mile radius. For the purpose of this study only casino facilities and casino clusters able to offer a critical mass of slot machines, gaming tables, amenities and attractions are considered "gaming destinations."

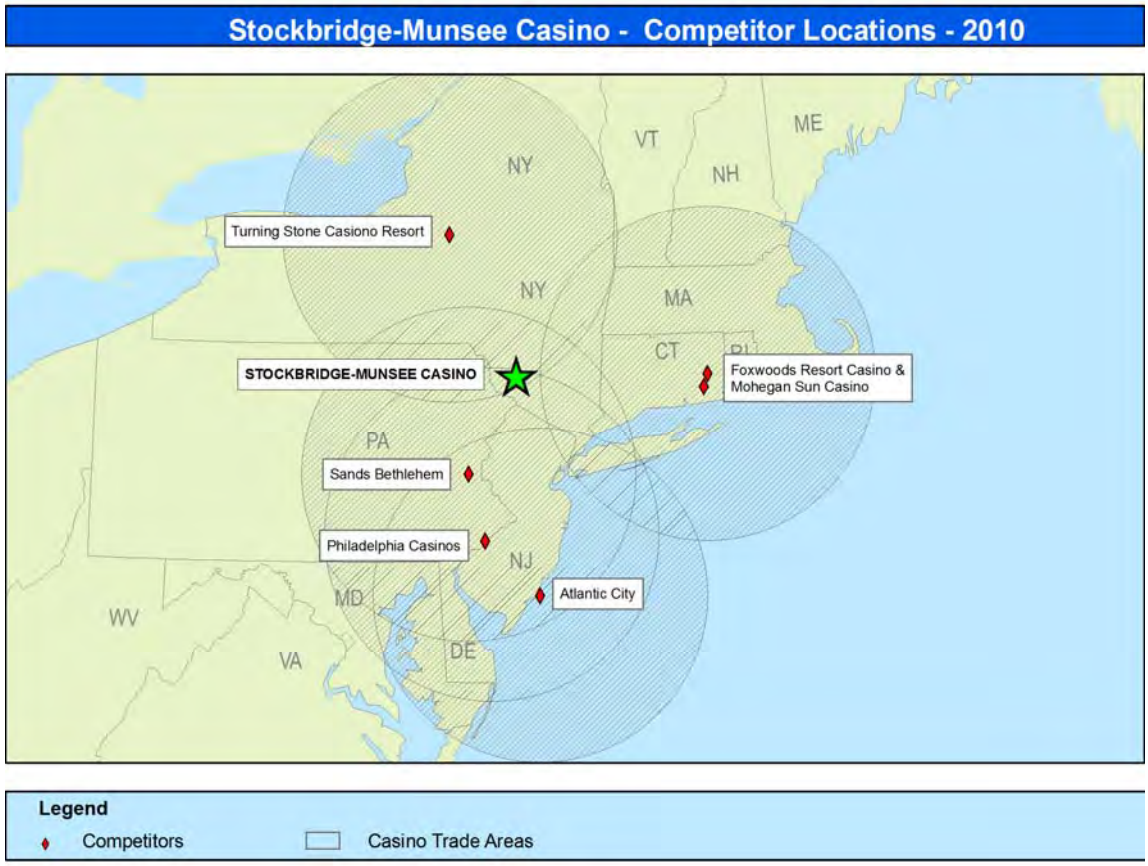
Figure 2: Two-Hour Drive-Time Trade Areas of Regional Gaming Destinations 2004

Source: AKRF, Inc., September 2010

In 2004, only the Turning Stone Casino Resort, Atlantic City, and the two Connecticut casinos were considered gaming destinations. While Atlantic City and the two Connecticut casinos were major players in the national gambling market (they have the second- and third-highest revenue streams nationwide), the Turning Stone casino resort, which is the fifth-most visited attraction in New York State, is a good example of a successful regional gaming location.

Figure 2 shows that in 2004, the trade areas of the three major existing gaming destinations overlapped in only a few geographic areas, with operations serving three nearly distinct areas. The Turning Stone casino served mainly the central New York State market and parts of Canada. Mohegan Sun and Foxwoods attracted most of their visitors from Connecticut and other New England States including the Boston metropolitan area, but also shared the New York City market with gaming operations in Atlantic City. A study by the University of Connecticut indicated that about 55 percent of Foxwoods visitors come from Massachusetts, while only 14 percent come from New York State. Atlantic City covers most of the major metropolitan areas in the Mid-Atlantic Region, including New York City, Philadelphia, and Baltimore, all of which are within a 2-hour drive of Atlantic City.

Figure 3: Two-Hour Drive-Time Trade Areas of Regional Gaming Destinations 2010



Source: AKRF, Inc., September 2010

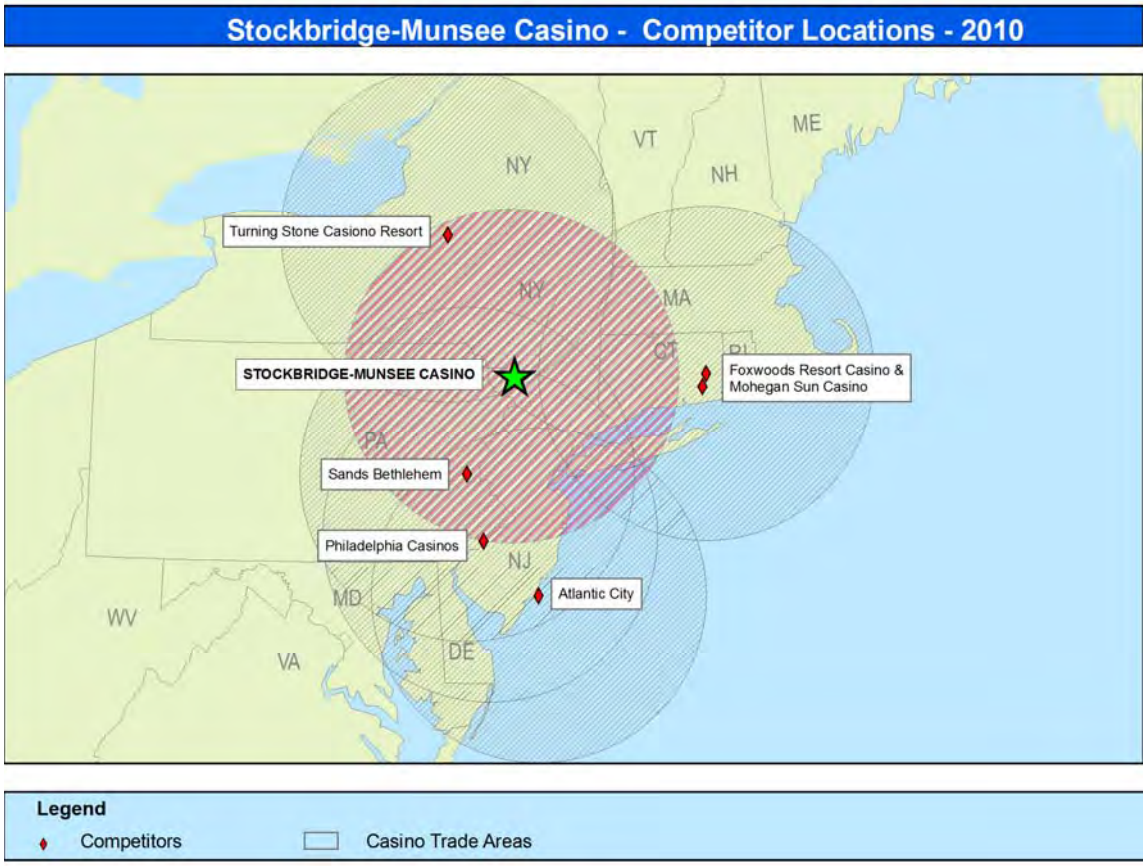
Since 2004, the number of gaming destinations has increased. Figure 3 illustrates the conditions in 2010, with the addition of two competing gaming destinations in Pennsylvania, i.e., Sands Bethlehem and Philadelphia area casinos. The Sands Bethlehem is slightly smaller than the Casino Project, and includes approximately 140,000 square feet of gaming space, offers approximately 3,000 slot machines and 100 gaming tables. Philadelphia has added three gaming operations to the market, collectively containing approximately 600,000 square feet and 6,800

slot machines. Already, the Pennsylvania facilities have had an impact on the established gaming destinations. Figure 3 not only shows the new facilities but also the overlapping 120-mile trade areas in particular in New Jersey western Pennsylvania.

In combination with the weak economy, the start of slots gambling in Pennsylvania in 2006 has contributed to a 25 percent drop in Atlantic City's gaming revenues, from a peak of $5.2 billion in 2006 to $3.9 billion in 2009. Atlantic City revenues are down an additional 8 percent for the first seven months of 2010, while Pennsylvania's casino revenues have jumped 21 percent during the same period, to $1.3 billion.[1]

Although competition has increased, the proposed Stockbridge-Munsee Casino has a strong trade area. The two-hour drive-time area encompasses the large metropolitan areas of New York City and Philadelphia, but also includes the affluent suburban areas of western Connecticut, Northern New Jersey, and Long Island. Figure 4 shows the trade area of the Casino Project and how it relates to the existing casino locations and their trade areas.

Figure 4: Two-Hour Drive-Time Trade Areas of Proposed Stockbridge-Munsee Casino and Regional Gaming Destinations – 2010



Source: AKRF, Inc., September 2010

[1] "Pennsylvania casinos win $17.5 million in first month of table games": www.pressofatlanticcity.com, accessed September 2010.

To compare and rank the trade areas for the six gaming destinations identified in Figure 4, visitation for each casino location was estimated and the expenditure potential was projected for each market, based on per capita gaming expenditures.

In a first step, AKRF delineated 25-mile and 50-mile trade areas for all gaming locations and identified 120-mile trade areas only for gaming destinations. Once trade area boundaries were delineated, counties that had 50 percent or more of their land area within the respective trade areas were selected, and their 2010 adult population (population age 18 and older) was identified. Area-specific propensity-to-gamble percentages were applied to adult population numbers. According to the "Casinos, Gaming and Wagering 2010" report by Richard k. Miller & Associates, propensity percentages, which identify the proportion of a population likely to participate in gaming activities, differ widely and range from 9.1 percent for residents of southern New Hampshire to 35.5 percent for residents of Hartford-New Haven metropolitan area in Connecticut. Trade areas that incorporate large parts of metropolitan areas typically enhance potential visitation because of the larger number of residents and their higher propensity to gamble. Table 1 provides an overview of propensity percentages for major markets in the Northeast and New England.

Table 1: Gaming Propensity Rates

Metropolitan Statistical Areas	2008	2009
Albany-Schenectady-Troy, NY	17.4%	22.6%
Allentown-Bethlehem, PA	21.4%	24.8%
Baltimore, MD	19.1%	18.0%
Boston, MA	20.7%	20.9%
Buffalo, NY	36.7%	29.4%
Hartford-New Haven, CT	35.5%	35.5%
Long Island, NY	29.7%	23.7%
New York, NY	25.1%	22.7%
Philadelphia, PA	25.3%	28.7%
Pittsburgh, PA	19.4%	21.3%
Rochester, NY	20.6%	18.2%
Southern New Hampshire, NH	16.9%	9.1%
Syracuse, NY	n/a	20.3%
Washington D.C.	17.6%	14.1%

Sources: Richard K. Miller & Associates, 2010

To account for competition generated within overlapping trade areas, it was assumed that counties that were included in multiple trade areas would send an equal portion of their gambling population to the gaming locations that constituted the center of the overlapping trade areas. For example, Orange County, NY is part of the 120-mile trade area of the Turning Stone Casino, the proposed Stockbridge-Munsee Casino, and the two Connecticut casinos. To avoid substantially overstating the county's potential for gaming activities, the county's gaming participants were divided into three equal portions, which were then assigned to each of the three trade areas.

Trade area population is only one factor in estimating potential visitation to each casino location; repeat visitation also has to be factored into the calculation. Since visitors from the various trade area rings frequent casinos at different rates, i.e., visitors from local trade areas tend visit more often than visitors from further away, different frequency rates were assigned to each segment based on trade are size and casinos location. Using visitation frequency estimates developed by AKRF, the total number of potential visits to each casino location was estimated from its surrounding trade area. (International and long distance visits are not included in the visitation projections.) Typical are 6 to 10 visits for patrons within a 25-mile radius, 3 to 6 visits for visitors from within a 50-mile radius and 2 to 3 visits for visitors from within a 120-mile radius. Generally, the frequency of visits will depend on the proximity of a visitor to a gaming location and the overall appeal of the attraction itself. For example, potential visitors living in the 25-mile area are likely to visit more often than those residing in the 50-mile trade area. The study assumes that in areas where the casino is the only significant entertainment option, frequency rates are at the higher end of the spectrum and can even exceed the typical values.

Given Atlantic City's large number of casinos and other amenities, such as the beach and its boardwalk, frequency rates for Atlantic City well exceed ranges observed for smaller inland casinos. Frequency rates for Atlantic City are therefore based on a 2008 visitor survey and reflect the location's number of gaming options and the city's status as vacation and convention destination. For example, Atlantic City offers more than 30,000 slot machines and approximately 16,000 hotel rooms and attracts visitors far more frequently than casino locations with fewer gambling opportunities.

According to a 2008 Atlantic City visitor survey[1], gamblers come on average almost 23 times to Atlantic City, with day trippers visiting on average about 20 times per year. Based on the origination of respondents to the survey, 25-mile and 50-mile trade areas send the highest number of visitors but even locations at the fringe of the 120-mile trade area, such as Brooklyn, NY, still contribute substantially to the Atlantic City's visitation. In fact, visitors coming by bus (a prevalent trend for New York City visitors) visit an average of about 20 times per year. To reflect these survey results, the study assigned a unique visitation frequency of 25 to the 25-mile trade, 23 to the 50-mile trade area, and 15 to the 120-mile trade area.

The Stockbridge-Munsee Casino is expected to be a major attraction within its 25- and 50-mile trade areas so that the frequency of visits of gambling adults is anticipated to be at the high end of the typical spectrum. Because of its convenient location for New York metropolitan area residents, frequency rates are also expected to be high for the 120-mile trade area.

Table 2 shows the adult population for each trade area, their propensity to gamble, the number of visitors expected to visit from each casino's specific trade area, and the total number of projected visits. Visitation numbers for the next larger radius do exclude smaller trade area population (e.g., the 120-mile trade areas does not included 25-mile and 50-mile trade populations). Table 2 illustrates that although the Stockbridge Munsee Casino has a small local trade area population, it has the strongest regional trade area, with more than 21 million people residing in the segment between a 50-mile and 120-mile radius.

[1] Atlantic City Visitor Profile 2008: Atlantic City Convention & Visitor Authority, 2008

Table 2: Adult Population and Projected Visits for Gaming Destination – 25, 50, and 120-Mile Trade Areas

25-Mile Trade Area					
	Adults	Propensity to Gamble	Unique Visitors	Frequency	Total Visits
Stockbridge-Munsee	55,586	12,618	12,618	10	126,180
Turning Stone	231,196	46,933	46,933	10	469,328
Sands Bethlehem	1,053,288	275,046	185,890	8	1,487,122
Connecticut Casinos	605,918	215,101	215,101	10	2,151,009
Philadelphia Casinos	3,440,658	968,443	904,687	10	9,046,875
Atlantic City	268,078	76,938	76,938	25	1,923,460
50-Mile Trade Area					
	Adults	Propensity to Gamble	Unique Visitors	Frequency	Total Visits
Stockbridge-Munsee	1,220,627	284,162	135,360	6	812,162
Turning Stone	620,950	129,126	121,079	8	968,635
Sands Bethlehem	3,771,145	1,009,937	379,946	4	1,519,784
Connecticut Casinos	2,303,908	768,569	768,569	8	6,148,554
Philadelphia Casinos	3,279,113	792,271	94,095	8	752,764
Atlantic City	1,426,884	387,620	166,749	23	3,835,225
120-Mile Trade Area					
	Adults	Propensity to Gamble	Unique Visitors	Frequency	Total Visits
Stockbridge-Munsee	21,609,655	5,341,006	1,530,703	4	6,122,813
Turning Stone	3,029,743	657,907	324,857	3	974,570
Sands Bethlehem	18,761,229	4,437,341	1,024,532	2	2,049,063
Connecticut Casinos	12,579,337	2,668,784	1,177,060	3	3,531,180
Philadelphia Casinos	16,359,470	3,735,273	539,153	4	2,156,611
Atlantic City	18,150,478	4,237,067	990,194	15	14,852,909

Sources: AKRF 2010, ESRI 2010, Richard K. Miller & Associates.

Table 3 summarizes all three trade areas and shows that Sands Bethlehem is able to tap into the largest population of likely gamblers. More than 5.7 million people in its trade area are likely to visit a casino for an entertainment purpose. With approximately 5.6 million people, the Stockbridge-Munsee Casino has access to the second-largest population participating in gaming activities. The trade area for Foxwoods and Mohegan Sun Casinos contains approximately 3.7 million potential gamblers and Turning Stone has access to about 800,000 potential casino visitors.

Table 3: Adult Population and Projected Visits for Gaming Destinations - Totals

	Adults	Propensity to Gamble	Unique Visitors	Total Visits
Stockbridge-Munsee	22,885,868	5,637,787	1,678,682	7,061,155
Turning Stone	3,881,889	833,966	492,869	2,412,533
Sands Bethlehem	23,585,662	5,722,324	1,590,368	5,055,970
Connecticut Casinos	15,489,163	3,652,454	2,160,730	13,145,270*
Philadelphia Casinos	23,079,241	5,495,988	1,537,936	11,956,250
Atlantic City	19,845,440	4,701,625	1,233,881	25,764,493*

Notes: Connecticut Casinos and Atlantic City receive a large share of visitors that that do not participate in gaming activities. This share, assumed to be 10% for the Connecticut Casinos and 20% for Atlantic City was added to the totals for these two locations.

Sources: AKRF 2010, ESRI 2010, Richard K. Miller & Associates.

In terms of overall visitation, Atlantic City ranks first. A large adult trade area population, combined with a substantial amount of gambling and recreational opportunities is likely to generate about 26 million visits annually, slightly lower than the number of visitors reported by the University of Nevada Las Vegas, which lists total visitation to Atlantic City Casinos in 2009 at 30,381,000[1]. Second highest visitation among the selected gaming destinations is found in the Connecticut market. Although Foxwoods and Mohegan Sun have access to a smaller adult population than the proposed Sullivan County casino, the methodology suggests that the larger number of gaming venues and hotel rooms, combined with the high appeal and attractiveness of the facilities are likely to generate more than 13 million visits each year. Recent reports have shown that the Connecticut casinos attract approximately 16 million visits annually.

Once developed, the proposed Stockbridge-Munsee Casino is expected to be a major gaming attraction in the northeast casino market. Although its gaming facilities will be of a similar size as the facilities of Sands Bethlehem, it is expected to attract more visitors mainly because of its superior 120-mile trade area, which includes the high population density areas of New York City, Long Island, northern New Jersey, and southwest Connecticut. Based on the model used for the analysis it is projected that Stockbridge-Munsee Casinos will receive approximately 7 million visits per year upon full operations of its facility.

C. ESTIMATED SPENDING POTENTIAL FOR SELECTED CASINO MARKETS IN THE EASTERN U.S.

The overall attractiveness of each casino market was evaluated by assessing the total expenditure potential for entertainment activities in each 120-mile gaming destination trade area. Projections are based on a per-adult spending estimate for gambling activities in the United States. Dividing the total amount of money spent on gambling[2] by the total adult population in the United States yields an average annual spending on gambling of $348 per adult. This dollar amount represents about 1 percent of the average per capita disposable income in the United States. Research

[1] UNLV Center for Gaming Research: Atlantic City Statistics, 2010.

[2] According to the American Gaming Association, total gross gaming revenues, the amount retained by casinos, racetracks, lotteries, and other gaming hosts, totaled $80.5 billion in 2009.

indicates that adults in other western countries have similar spending patterns for gambling activities.

Table 4: Spending Potential within 120-Mile Trade Area

	Adults in 120-Mile Trade Area	Average Adult Spending on Gambling in U.S.	Total Trade Area Gaming Expenditure Potential
Stockbridge-Munsee	22,885,868	$348	$7,964,282,064
Turning Stone	3,881,889	$348	$1,350,897,372
Sand Bethlehem	23,585,662	$348	$8,207,810,376
Connecticut	15,489,163	$348	$5,390,228,724
Philadelphia Casinos	23,079,241	$348	$8,031,575,868
Atlantic City	19,845,440	$348	$6,906,213,120

Sources: AKRF, Inc., September 2010.
Note: Includes 25, and 50-Mile trade area adults.

Table 4 illustrates the quality of Stockbridge-Munsee's trade area. Sands Bethlehem and Philadelphia Casinos have the highest gaming expenditure potential in their respective trade areas, $8.2 billion and $8.0 billion respectively. Using this methodology, the proposed Stockbridge-Munsee Casino has access to almost $8 billion in annual gaming expenditures, more than the trade areas of the Connecticut casinos ($5.4 billion), the Turning Stone Casino and Resort ($1.4 billion), and Atlantic City ($6.9 billion).

D. PROJECTED REVENUE FOR THE PROPOSED STOCKBRIDGE-MUNSEE CASINO

The potential total revenue for the proposed Stockbridge-Munsee Casino was calculated based on an average revenue-per-visit rate calculated for the three gaming destinations listed in Table 5 (i.e., Turning Stone, Connecticut Casinos, and Atlantic City). Revenue per visit rates for Philadelphia casinos and Sands Bethlehem were not available.

The average revenue-per-visit is not equivalent to the amount each patron is likely to win while participating in gambling activities, but rather the amount of revenue each adult will generate during each casino visit. The average revenue-per-visit was derived by dividing revenue estimates for the casino locations[1] by their respective recorded visitation or visitation estimates. Connecticut casinos and Atlantic City casinos are estimated to generate similar revenue-per-visit rates of approximately $130 per visit. Turning Stone is projected to generate a revenue-per-visit rate of $76 per visit. To project a revenue-per-visit rate for the proposed Stockbridge- Munsee Casino a simple average was created. This resulted in an average revenue-per-visit rate of $111 for the proposed Stockbridge-Munsee Casino. The average revenue-per-visit was then multiplied

[1] Revenue estimates:
Atlantic City Convention Center and Visitor Authority, 2010
"Patron Origin Analysis: Foxwoods Resort Casino and Mohegan Sun Casino, 2004": Center for Policy Analysis, University of Massachusetts, Dartmouth.
Turning Stone reported on turning-stone.com

with the visitation estimate for the proposed Stockbridge-Munsee Casino (7,061,155) resulting in estimated total revenue of approximately $1.34 Billion annually (see Table 5).

Table 5: Average Revenue per Visit and Total Projected Revenue

Table 5: Average Revenue per Visit and Total Projected Revenue			
	Visits	Average Revenue/ Visit	Total Revenue
Stockbridge-Munsee	7,061,155	$111	$1,338,182,379
Turning Stone	4,460,000	$76	$340,000,000
Connecticut	16,103,930	$128	$2,064,279,109
Atlantic City	30,381,000	$130	$3,943,171,000

Notes: 2010 revenue projection for Foxwoods and Mohegan Sun were used to escalate 2004 visitation.

Sources: Atlantic City Convention Center and Visitor Authority, 2010
"Patron Origin Analysis: Foxwoods Resort Casino and Mohegan Sun Casino, 2004": Center for Policy Analysis, University of Massachusetts, Dartmouth.
Turning Stone reported on turning-stone.com
AKRF, Inc., September 2010

E. SLOT MACHINES, GAMING TABLES, AND HOTEL ROOMS

Slot machines are an important part of the mix of gaming venues at all major gaming destinations. It is assumed that the proposed Stockbridge-Munsee Casino would have to offer a proportionate number of slot machines to be competitive with surrounding casino markets. An examination of data for all casinos and racinos in Connecticut, New York, New Jersey and Pennsylvania indicates that the average number of slot machines in these facilities (which averaged 130,400 square feet) was 2,550. Table 6 shows the upper and lower ranges, and the average number of gaming venues, including slot machines and gaming tables in casinos in the four states.

Table 6: Casino Characteristics				
	Square Feet	Slot Machines	Table Games	Hotel Rooms
Minimum	15,000	300	8	206
Maximum	500,000	8,600	350	2590
Average	130,363	2,548	110	1,167

Sources: casinocity.com

SLOT MACHINES

While there are a number of casinos that have only a few hundred slot machines—in particular smaller racino and tribal facilities in Upstate New York—the majority of gaming sites provide 2,000 slot machines or more for their customers. The two Connecticut casinos, Mohegan Sun

and Foxwoods, collectively provide over 16,000 slot machines, while the three largest casinos in Atlantic City, including Bally's, Borgota, and the Tropicana Casino and Resort, provide 3,595, 3,447, and 3,157 respectively. Considering the highly competitive market situation, the proposed Stockbridge-Munsee Casino would likely have to provide at least 2,500 to 3,500 slot machines. This range of slot machines will create a critical mass of slot machines necessary to attract a sufficient amount of visitors to the Stockbridge-Munsee Casino.

GAMING TABLES

In 2004, only four Northeast casinos larger than 100,000 square feet offered more than 100 gaming tables. Today the Sands Bethlehem and casinos in Philadelphia also offer a substantial number of table games. The Connecticut casinos offer a combined total of almost 700 table games; Philadelphia casinos about 250; Sands Bethlehem offers 100; and Atlantic City casinos combined operate more than 1,350 gaming tables.

Using these current numbers as a baseline, the Stockbridge-Munsee Casino's proposed 190 gaming tables would make it the fourth-largest gaming destination in the Northeast in terms of the numbers gaming tables. Only Foxwoods and Mohegan Sun, Atlantic City and Philadelphia casinos would operate more gaming tables than the proposed Stockbridge-Munsee Casino. The proposed casino would compete with these locations for patrons and would have to offer a large enough number and an attractive variety of gaming tables to claim its market share. Overall, given the highly competitive nature of the northeastern casino market, having 190 gaming tables as proposed would increase Stockbridge-Munsee's probability to attract large numbers of patrons needed to become a successful operation.

HOTEL ROOMS

Of the 41 Northeast casinos and racinos inventoried, 21 do not provide hotel rooms. For the remaining 20 casinos, the number of hotel rooms range from 200 to 2,600. Each individual casino in New Jersey and Connecticut provides at least 750 rooms. Combined, Mohegan Sun and Foxwoods have more than 4,000 rooms, while Atlantic City's casinos collectively provide more than 16,000 rooms. On average, casino hotels provide about 1,100 hotel rooms for their visitors. To be competitive the proposed Stockbridge-Munsee Casino should provide a critical mass of between 750 and 1,000 hotel rooms.

F. FINDINGS

Based on this analysis, AKRF estimates that the proposed Stockbridge-Munsee Casino's Sullivan County location will support a successful operation of its proposed size. Its two-hour trade area contains more patrons than Atlantic City's trade area and the trade area servicing the Mohegan Sun/Foxwoods casinos.

However, the casinos in Connecticut and Atlantic City are already well-established gaming destinations, able to offer a critical mass of entertainment options and attract a substantial amount of visitors. The proposed Stockbridge-Munsee Casino will have to compete with both of these locations for patrons, and with the newly-established gaming facilities in Pennsylvania. To be able to compete, the proposed Stockbridge-Munsee Casino will need a comparable amount of games and hotel rooms, state-of-the-art facilities, a comparable marketing strategy, and good management.

On a regional level, the proposed Stockbridge-Munsee Casino will compete largely with Atlantic City casinos, but also with the Connecticut casinos and increasingly with the casinos in

Philadelphia and the Sands Bethlehem, with their trade areas reaching far into northern New Jersey. The Atlantic City casinos have a major stake in the New York Metropolitan Area, which is, in addition to individual visitation, the origin of a substantial number of organized bus visitors (approximately 6 million annually).

The new Pennsylvania casinos have already affected visitation at the Connecticut casinos, where visitation from New Jersey has decreased from 4.1 percent of total visitation in 2004 to 1 percent in 2010. Visitors from Pennsylvania have all but disappeared since the opening of several convenience gambling facilities in that state.[i] At the same time visitation to Atlantic City has declined steadily, decreasing by another 10 percent over the past 12 months due to a struggling economy and increased competition from across the state's border.

Based on the analysis for the proposed casino, AKRF estimates that the casino will need to provide between 2,500 to 3,500 slot machines to successfully compete with the much larger and established casinos in Atlantic City and Connecticut but also the new facilities in Philadelphia. With a proposed 190 table games, the Stockbridge-Munsee facility will be the fourth-largest gaming destination in terms of the number of gaming tables. This will also add to it's appeal as a premier gambling location and contribute to the critical mass and variety of games needed to compete against Mohegan Sun and Foxwoods on one hand, and the Atlantic City and Philadelphia casinos on the other.

Compared to the other gaming destinations, the proposed Stockbridge-Munsee Casino would have excellent access to the most affluent populations in the country, and be the closest casino facility for millions of residents in northern New Jersey, New York City and its suburbs, and western Connecticut. With the potential for additional casinos to locate close to the proposed Stockbridge-Munsee Casino site, AKRF believes that the appeal of the area as a gaming, entertainment, and tourist destination will increase, thereby further strengthening the area's ability to successfully share the overall Northeastern gaming market with the Atlantic City, Philadelphia, and Connecticut casinos. ✷

[i] New England Casinos Gaming, Update 2010: Center for Policy Analysis, University of Massachusetts, Dartmouth 2010.

Appendix D

Local Government Agreements

Appendix D
Local Government Agreements

D-1 Sullivan County Agreement

D-2 Water Services Agreement

D-3 Wastewater Services Agreement

D-4 Wastewater Services Agreement Extension

Appendix D-1

Sullivan County Agreements

AGREEMENT (Final)

THIS AGREEMENT ("Agreement") is made and entered into as of this 31st day of January 2002, by and between the Stockbridge-Munsee Community ("Tribe"), a Band of Mohican Indians and a federally recognized Indian Tribe, whose address is PO Box 70, N8476 Moh He Con Nuck Road, Bowler, Wisconsin 54416, and the County of Sullivan ("County"), a municipal corporation of the State of New York, whose address is PO Box 5012, 100 North Street, Monticello, New York 12754, on behalf of and for the benefit of the County and all other affected local entities within the County. The County and other affected local entities are hereinafter collectively referred to as the "Locally Impacted Entities".

RECITALS

WHEREAS: The Tribe has obtained rights to lands in the Town of Thompson, Sullivan County, New York, as more fully described below in Section 2 (the "Project Site"); and

WHEREAS: The Tribe plans to have these Lands acquired by the United States to be held in trust for the Tribe to enable the Tribe to develop a casino, hotel and ancillary facilities, "the Project," as more fully described below in Section 2 on the Land; and

WHEREAS: The Tribe desires to pay for the municipal and related services that the Project will require, and the County and its various municipal subdivisions, including but not limited to the Town of Thompson, desire to provide the services needed by the Project, including but not limited to roads, water and sewer and other municipal services set forth in this Agreement; and

WHEREAS: The Tribe and County agree that the Project will impact the County, and the Tribe desires to mitigate said impacts of the Project; and

WHEREAS: The Tribe desires to have the support and cooperation of the County and other local governments in the development of the Project; and

WHEREAS: The County believes that the Project will bring economic development to the County, creating new jobs for residents and new sources of income for local governments; and

WHEREAS: The County desires to support the Tribe in the development of the Project for these reasons; and

WHEREAS: The Tribe has no basis for a land claim in Sullivan County and has never had reservation land in Sullivan County.

NOW, THEREFORE BE IT RESOLVED that the parties, for good and valuable consideration, receipt of which is hereby acknowledged, enter into this Agreement to effectuate the purposes set forth above and agree to be bound by the provisions set forth below.

1. The content of the "Whereas" clauses above are incorporated herein.

2. Project Description. The Tribe intends to develop a casino, hotel and ancillary facilities in multiple phases (the "Project"). The Project site consists of approximately 333 acres. The site is generally situated on County Road 161 west and north of Exit 107 on New York State Route 17. Phase I of the Project will consist of the gaming facility, parking facilities and supporting operational facilities. Phase I will also include infrastructure improvements, such as roadway improvements and utilities, to support both Phases I and II. Phase II will consist of a hotel, additional parking facilities, expansion of the gaming facility and other supporting operational facilities. In the event the Tribe develops a casino project elsewhere in the County then the terms of this Agreement will be applicable. In that event, the parties reserve the right to modify this Agreement at any time upon mutual consent in a writing executed by both parties, which consent may be withheld.

3. Mitigation Measures. It is agreed that the payments to be made as set forth herein below and are made in lieu of all taxes, including, but not limited to: County, Town, Library District, School District, Sewer and Water and Fire Districts. In conjunction with the measures set forth herein, the payments constitute the Tribe's mitigation efforts and are in full and complete satisfaction of all local government impacts whether or not identified in this Agreement. The County agrees to work with the Locally Impacted Entities to determine the nature and extent of impacts to such entities and shall compensate each accordingly from the Payments made pursuant to this Agreement. The County agrees to negotiate in good faith with the Locally Impacted Entities but the County shall be the sole and final determiner of the monetary value of the impact payments. The County agrees to pay no less to any Locally Impacted Entity than the amount that entity will lose in tax revenue, for taxes relating to the project site, based upon the 2002 assessment roll.

4. Local Impact Payments. The Parties to this Agreement agree to the following revenue sharing payment structure to address mitigation of impacts from the Project.

(a) The County may receive monies directly from the State pursuant to the terms of the Tribal-State Compact to be entered into between the Tribe and the State pursuant to the Indian Gaming Regulatory Act ("IGRA") ("Compact"), or other agreement with the State, or legislation, (said monies, heretofore and hereinafter referred to as "State Payments"), in an amount equal to 25% of the Tribe's payment to the State. The payments shall not begin to accrue until after the opening of the Tribe's New York casino, and shall be payable in accordance with a schedule of payments established in the Compact or other agreement with the State.

(b) In the event that the State Payments received by the County from the State, from the negotiated payment from the Tribe to the State, if any, is less than the annual sum of $20,000,000, then the Tribe agrees to pay the County the difference between the State Payments received from the State and $20,000,000. Provided, however, that in no event shall the Tribe be required to pay more than an annual sum of $15,000,000. The payments to the County will continue for as

long as the casino is operating or unless modified as contemplated herein. If the Agreement entered into between the Tribe and the State provides for payments less frequently than quarterly, then the Tribe will make quarterly payments to the County in the amount of $3,750,000 per quarter within fifteen (15) days following the end of each calendar quarter. In that event, the County will reimburse or credit the Tribe when and if the State makes appropriations to the County over the amount of $5,000,000 per year. (For example, if the State annually appropriates $5,000,000 or less, then the Tribe will pay the County $15,000,000 without reimbursement. If the State appropriates $6,000,000, then the Tribe's obligation to the County will be in the amount of $14,000,000). Payments made during the calendar quarter that the casino permanently ceases operation shall be prorated in the same manner contemplated for the payment during the first calendar quarter; provided, however, that such proration shall be based upon the payment made for the calendar quarter immediately prior to the calendar quarter during which the casino ceases operation.

The County agrees to assist and support the Tribe in negotiating a provision in the Compact or other agreement with the State allocating 25% of the Tribe's payment to the State back to the County.

(c) In the event that the State does not agree to the revenue sharing provision, either in the Compact or by other agreement or legislation, then the Tribe agrees to pay the County of Sullivan the annual sum of $15,000,000 US dollars, payable quarterly in the amount of $3,750,000 US dollars within fifteen (15) days following the end of each calendar quarter. Payments made during the calendar quarter that the casino permanently ceases operation shall be pro-rated in the same manner contemplated for the payment during the first calendar quarter within fifteen (15) days.

5. Roads Improvements. The Tribe shall pay for all necessary road improvements to State, County and local roads necessary for development and operation of the Project, as identified in the Environmental Assessment, as approved in final form by the Bureau of Indian Affairs. This obligation shall not include normal and customary maintenance.

6. Sewer and Water Infrastructure and Services. The Tribe will pay for all necessary extensions to sewer and water infrastructure necessary for development and operation of the Project. All operation and maintenance charges for sewer and water use by the Project shall be borne by the Tribe.

7. Police Protection. It is anticipated that provision of police protection to the Project will be addressed in the compact between the Tribe and the State authorizing gaming at the Site. In the event that costs of police protection are not addressed in the "Tribal-State Gaming Compact", the County and its political subdivisions shall not be obligated to provide police protection without a supplemental agreement.

8. Fire Protection. It is anticipated that provision of fire protection to the Project will be addressed in the Compact. In the event that costs of fire protection are not addressed in the Compact, the County and its political subdivisions shall not be obligated to provide fire protection without a supplemental agreement.

9. Emergency Services. It is anticipated that provision of emergency services to the Project will be addressed in the Compact. In the event that costs of emergency services are not addressed in the Compact, the County and its political subdivisions shall not be obligated to provide fire protection without a supplemental agreement.

10. Building and Fire Protection Code. The Tribe shall adopt codes applicable to the Project relating to building construction and fire protection ("Tribal Building Code") that are no less rigorous than the New York State Uniform Building and Fire Prevention Code as the same shall be amended from time to time. Enforcement of the Tribal Building Code shall be by a Tribal Code Enforcement Officer appointed by the Tribal Council. Additionally, independent consultants shall be engaged by the Tribe to periodically review construction activity on the site and its compliance with the Tribal Building Code. The independently engaged experts shall provide the County with reports certifying that construction at the site is in accordance with the Tribal Building Code no less often than quarterly.

11. Undertakings of the County. In consideration for the mitigation measures to be undertaken by the Tribe in this Agreement, and in further recognition of the many benefits the project will bring to the County, the County shall:

(a) provide such services as contemplated in this Agreement or by separate agreement. Except as otherwise provided for herein, the County will provide normal and customary general government services to the Project as are afforded to residents and other commercial entities situated in the County;

(b) compensate the Locally Impacted Entities according to their impacts as determined by the County; agreements entered into between the County and Locally Impacted Entities will provide that the latter support or not oppose the Project;

(c) support the Project, and to actively work with and assist the Tribe and its contractors and agents to obtain any and all approvals, legislation or enactments required for the Project from governmental entities and officials of the United States of America, the State of New York, their respective agencies and political subdivisions, including the County of Sullivan, the Town of Thompson and all other impacted entities. The County shall prepare and forward a letter of support to the United States Department of Interior, Bureau of Indian Affairs, the Governor, key members of the State Legislature, the New York Congressional delegation, and other key Congressional leaders when requested by the Tribe;

(d) assist the Tribe in responding to negative comments about the Project, reiterating the County's support and the basis therefor; and

(e) at the request of the Tribe, intervene in or participate as amicus curiae in any law suit challenging any Federal or State approvals necessary for gaming to occur on the site.

12. Alcohol and Cigarette Sales. Sale of cigarettes shall be limited to the sale of individual packs of cigarettes to patrons of the Project. Alcohol shall be sold only for on-premise consumption by patrons of the Project.

13. Gasoline. It is anticipated that the Tribe will enter into an agreement with the State of New York pursuant to which the Tribe will agree to collect and remit all Federal, New York State and local municipal excise and sales taxes from the sale of petroleum products and convenience store goods to non-Indians. Absent such an agreement, or a separate agreement with the County, no gasoline sales shall occur on lands held in trust for the Tribe by the United States of America. The sale of cigarettes, as contemplated by any of the terms of this Agreement, shall be for a price not below the minimum New York State mandated pricing. The New York State bottle redemption laws are consistent with the Tribe's philosophy of environmental conservation, and the Tribe shall adopt a tribal code including bottle redemption provisions no less rigorous than those in New York State law. In addition, the Tribe agrees to negotiate in good faith and enter into agreements with individual local gasoline retailers operating gas stations within Sullivan County (who desire to enter into such agreements) whereby customers of those local gasoline retailers may participate in the Tribe's points redemption marketing program when purchasing gasoline at those local gasoline stations. The agreements and program will include terms and conditions, including the implementation of adequate technology and internal controls to prevent fraud and mistakes.

14. Tort Liability. It is anticipated that insurance requirements and tort liability issues including a procedure for patrons to prosecute a tort claim will be addressed in the Compact. In the event that it is not addressed in the Compact, then the parties will negotiate a separate agreement prior to the opening of the casino, providing a remedy for tort liability of the Tribe. Any agreement must provide that the insurer be no less than an A rated company admitted to do business in the State of New York.

15. Hiring Preference - Construction Activities. The Tribe hereby establishes a preference policy for hiring of qualified contractors, subcontractors and construction employees. The preference policy shall provide for hiring of qualified, low-cost providers with a preference for qualified contractors, subcontractors, or construction employees as follows:

(a) Members of the Tribe;
(b) Members of other Tribes;
(c) Residents of Sullivan County;
(d) Residents of New York State.

The Tribe shall have sole discretion to determine the qualifications of any and all contractors, subcontractors and construction employees.

16. Bingo. The Tribe will not conduct bingo at the site or elsewhere in the County without a supplemental agreement with the County.

17. Employee Background Checks. It is anticipated that background investigations for employees of the Project will be addressed in the Compact. Further, such investigations are subject to state and federal law. To the extent not addressed in the Compact, background checks and compliance programs shall be subject to further agreement.

18. Promotion of Tourism. The Tribe shall make available to the Sullivan County Visitors' Association ("Visitors' Association"), at a mutually agreed upon location, adequate space (not exceeding 300 square feet) to establish static displays, interactive computer terminals, and racks for the dissemination of brochures for the promotion of Sullivan County as a tourism destination. The Tribe shall maintain control and approval over all signage, marketing displays and other information made available on the Project property. All such displays shall be designed to avoid the need for an individual to be present at the display area. In the event that the parties mutually agree to the presence of a Visitors' Association employee within the gaming facility, that employee shall submit to the appropriate background and licensing procedures required by the Tribe, in order to assume and maintain a presence at the facility. The Visitors' Association shall not advertise other gaming venues in the County from the Project Property.

19. Gambling Addiction Programs. The Tribe acknowledges the need for a gambling addiction program and will provide such a program to residents of the County. It is anticipated that a gambling addiction program will be mandated by the Compact. To the extent that a gambling addiction program is not mandated by the Compact, the Local Governments shall not be obligated to provide services relating to the prevention and treatment of gambling addictions without a supplemental agreement.

20. General Provisions.

(a) **Notices**. Any notices, consents, demands, requests, approvals, and other communications to be given under this Agreement by any party to the other(s) shall be deemed to have been duly given if given in writing and personally delivered, or sent by nationally recognized overnight courier, or sent by mail, registered or certified, postage prepaid with return receipt requested, at the following addresses:

if to the County:

County of Sullivan
Sullivan County Government Center
100 North Street, P.O. Box 5012
Monticello, New York 12701
Attn: Chairman - County Legislature

with a copy to:

County of Sullivan Department of Law
Sullivan County Government Center
100 North Street, P.O. Box 5012
Monticello, New York 12701

Attn: County Attorney

if to the Tribe:

The Stockbridge-Munsee Community
Attention Tribal President
P.O. Box 70
N8476 Moh He Con Nuck Road
Bowler, Wisconsin 54416

with a copy to:

The Stockbridge-Munsee Community
Attention Tribal Attorney
P.O. Box 70
N8476 Moh He Con Nuck Road
Bowler, Wisconsin 54416

Notices delivered personally or by courier, shall be deemed communicated as of actual receipt; mailed notices shall be deemed communicated as of 10:00 a.m. on the third business day after mailing. Any party may change its address for notice hereunder by giving notice of such change in the manner provided in this Article.

(b) **Assignment**. The County consents to the Tribe's assignment of this Agreement to the Tribe's New York Gaming Authority, which will own and operate all of the assets related to the Project, including the cash flow from revenues from which the Payments will be made. The Authority shall be bound by this Agreement and the Tribe agrees to provide a waiver of the Authority's sovereign immunity that is the same as the Tribe's waiver of immunity provided for herein.

(c) **Binding Effect**. This Agreement shall be binding upon the parties hereto, together with their respective successors, and permitted assigns.

(d) **Independent Covenants; Severability**. The existence of any claim or cause of action of any party to this Agreement ("First Party") against the other party ("Second Party"), whether predicated on this Agreement or otherwise, shall not constitute a defense to the enforcement by the Second Party of the covenants and agreements of the First Party contained in this Agreement. If any provision of this Agreement is held to be illegal, invalid, or unenforceable under present or future laws effective during the term hereof, such provision shall be fully severable and this Agreement shall be construed and enforced as if such illegal, invalid, or unenforceable provision never comprised a part of this Agreement; and the remaining provisions of this Agreement shall remain in full force and effect and shall not be affected by the illegal, invalid, or unenforceable provision or by its severance here from. Furthermore, in lieu of such illegal, invalid, or unenforceable provision, there shall be added automatically as part of this Agreement, a provision as similar in its terms to such illegal, invalid, or unenforceable provision as may be possible and be legal, valid, and enforceable.

(e) **Language; Captions; References**. Whenever the context requires, references in this Agreement to the singular number shall include the plural, the plural number shall include the singular, and words denoting gender shall include the masculine, feminine, and neuter. Section headings in this Agreement are for convenience of reference only and shall not be considered in construing or interpreting this Agreement. "Hereof," "hereto," "herein," and words of similar import used in this Agreement shall be deemed references to this Agreement as a whole, and not to any particular section, paragraph, or other provision of this Agreement unless the context specifically indicates to the contrary. Any reference to a particular "section" shall be construed as referring to the indicated section of this Agreement unless the context indicates to the contrary. Whenever the term "including" is used herein, it shall mean including without limitation.

(f) **Ambiguities**. The general rule of contract construction that any ambiguity in a contract will be construed against the party drafting such contract shall not apply to this Agreement.

(g) **No Third Party Beneficiaries**. This Agreement does not create, and shall not be construed as creating, any right enforceable by any person not a party to this Agreement. Any covenant or agreement contained in this Agreement shall be only for the benefit of the signatories hereto and their respective successors and permitted assigns.

(h) **Relationship of Parties**. Nothing in this Agreement shall create or be deemed to create the relationship of partners, joint venturers, employer-employee, or principal-agent among the parties, nor shall any party to this Agreement have any authority to assume or create any obligation or responsibility whatsoever, express or implied, on behalf of or in the name of any other party or to bind any other party in any manner whatsoever, nor shall any party make any representation, warranty, covenant, agreement, or commitment on behalf of any other party.

(i) **Limited Waiver of Sovereign Immunity and Dispute Resolution**.

(1) (a) By The County. The County hereby waives its immunity for the limited purpose of enforcement of this Agreement, from unconsented suit to permit arbitration of disputes as provided herein and to permit the state courts to compel such arbitration and to enforce the terms of any award or order resulting from such arbitration.

(b) By the Tribe – Non-Monetary Relief. The Tribe hereby waives its sovereign immunity with respect to non-monetary relief for the limited purpose of enforcement of this Agreement, from unconsented suit to permit arbitration of disputes as provided herein and to permit the state courts to compel such arbitration and to enforce the terms of any award or order resulting from such arbitration. The Tribe expressly foregoes and waives any claim that the exhaustion of any tribal court proceeding is or will be a necessary prerequisite to the initiation or maintenance of dispute resolution under this Agreement.

(c) By the Tribe – Monetary Relief. The Tribe hereby waives its sovereign immunity with respect to monetary relief for the limited purpose of enforcement of this Agreement and further limited to the revenue derived by the Tribe from operation of the Project, from unconsented suit to permit arbitration of disputes as provided herein. The Tribe further waives its sovereign immunity to permit the state courts to compel such arbitration, and to enforce the terms of any award or order resulting from such arbitration. The Tribe expressly foregoes and waives any claim that the exhaustion of any tribal court proceeding is or will be a necessary prerequisite to the initiation or maintenance of dispute resolution under this Agreement.

The parties agree that any suit commenced as provided herein shall be brought in the Supreme Court of New York for Sullivan County (and appeals therefrom shall be brought in the New York State Appellate Courts) or, if that Court has no jurisdiction, then in any court of competent jurisdiction including, but not limited to, the Tribe's Gaming Disputes Court or Tribal Court.

(2) It is acknowledged by the parties that a quick and efficient resolution of any dispute, claim or controversy arising under or relating to this Agreement, the breach, termination, or validity of this Agreement, or the dealings between the signatories of this Agreement or their successors, or with respect to any claim arising by virtue of any representations made by any party (collectively, "Dispute") is critical to the implementation of this Agreement. In order to effectuate such intent, the parties do hereby establish this dispute resolution procedure. All Disputes shall be subject to this Section 20(i), it being the intention of the parties that all such Disputes be subject thereto regardless of any specific reference or absence of such reference as provided herein. No time bar defenses shall be available based upon the passage of time during any negotiation called for by this Section.

(3) Either party shall give the other party written notice of any Disputes ("Dispute Notice") which Dispute Notice shall set forth the amount of loss, damage and cost of expense claimed, if any.

(4) Within ten (10) days of the Dispute Notice the parties shall meet to negotiate in good faith to resolve the Dispute. Separately and independently, either party may seek injunctive relief from the New York State Supreme Court, Sullivan County, to maintain the status quo during the following dispute resolution process, upon or after service of a Dispute Notice by one party upon the other.

(5) In the event the Dispute is unresolved within thirty (30) days of the Dispute Notice by good faith negotiations, the Dispute shall be arbitrated upon the filing by either party of a written demand, with notice to the other party, to

and under the rules of a provider of dispute resolution services ("Arbitration Service") acceptable to the parties (to the extent such rules are not inconsistent as provided herein) in White Plains, New York before a single arbitrator under the then current Commercial Arbitration Rules of the American Arbitration Association. Within ten (10) days after receipt of written notice of the Dispute being brought to the arbitrator, each party shall submit to the arbitrator a best and final offer with respect to each issue submitted to the arbitrator and an accompanying statement of position containing supporting facts and data. Upon such Dispute being submitted to the arbitrator for resolution, the arbitrator shall assume exclusive jurisdiction over the Dispute, and shall utilize such consultants or experts as he shall deem appropriate under the circumstances, to assist in the resolution of the dispute and will be required to make a final binding determination, not subject to appeal, within forty-five (45) days of the date of submission.

For each issue decided by the arbitrator, the arbitrator shall award the expenses of the proceeding, including reasonable attorneys' fees, to the prevailing party with respect to such issue. The arbitrator in arriving at his decision, shall consider the pertinent facts and circumstances as presented in evidence and be guided by the terms and provisions of this Agreement and applicable law, and shall apply the terms of this Agreement without adding to, modifying or changing the terms in any respect, and shall apply the laws of the State of New York to the extent such application is not inconsistent with this Agreement.

The arbitration shall be governed by Article 75 of the Civil Practice Law and Rules ("CPLR") of the State of New York, to the extent not inconsistent with this Agreement. Any arbitration award may be entered as a judgment in the courts of the State of New York. A printed transcript of any such arbitration proceeding shall be kept and each of the parties shall have the right to request a copy of such transcript, at its sole cost.

The parties agree that, in addition to monetary relief, the Arbitrator may make an award of equitable relief in the form of a temporary, preliminary or permanent injunction and the parties further agree that the Arbitrator is empowered to enforce any of the provisions of this Agreement.

The arbitrator is not empowered to award damages in excess of compensatory damages and each party hereby irrevocably waives any right to recover such damages with respect to any Dispute resolved by arbitration. The parties further agree that the Arbitrator and/or the Court shall have no authority nor jurisdiction to order execution against any assets or revenues of the Tribe except those set forth in Section 20(i)(1)(c) of this Agreement.

The arbitrator is not empowered to award damages against the Tribe except to the extent of revenue derived from operation of the Project.

(j) **Choice of Law**. The laws of the State of New York shall govern the validity or enforceability and the interpretation or construction of all provisions of this Agreement and all issues hereunder.

(k) **Term and Termination.** This Agreement shall be effective upon its signature by officials of the Tribe and the County duly authorized by resolutions of the Tribal Council and the Legislature of the County, which resolutions shall be attached hereto. Once effective, the initial term of this Agreement shall extend until the date that is seven years after the date upon which the Casino, comprising a portion of the Project, opens to the public ("Commencement Date"). At the end of such seven year period ("Initial Term") and at the end of each successive seven year period thereafter (each, a "Renewal Term") during which the Project offers commercial gaming to the public, this Agreement shall be automatically renewed. Notwithstanding anything to the contrary set forth herein, this Agreement shall terminate in the event that the Project permanently ceases to offer commercial gaming to the public, provided; however, that the obligation to make payment of any Payment pursuant to the final calendar quarter of Casino operation survives, along with the dispute resolution and waiver of sovereign immunity provisions of this Agreement shall survive the termination of this Agreement.

(l) **Modification.** No modification shall be requested or made during the Initial Term unless both parties consent in writing thereto, which consent may be withheld. If either party to this Agreement is of the view that one or more provisions hereof should be modified for any Renewal Term because of changed circumstances, such party shall give to the other party written notice of the modification it seeks ("Modification Notice"). A Modification Notice delivered under this section must be served not more than one (1) year nor less than six (6) months prior to the end of the Initial Term or a Renewal Term. As soon as practical, but in no event later than thirty (30) days following service of such a Modification Notice the parties shall meet and negotiate in good faith to address each requested change. If such negotiation does not yield agreement within sixty (60) days following service of such a Modification Notice, either party may initiate dispute resolution proceedings in the manner provided in Section 20(i) hereof. In such proceedings, the party seeking modification shall be required to demonstrate the change in circumstances and necessary modifications to this Agreement by clear and convincing evidence.

(m) **Most Favored Nation.** To the extent the economic value and Term of this Agreement are concerned, should the County and any other Indian Nation or Tribe amend a current County/Tribal Agreement or adopt a new County/Tribal Agreement with terms that are more favorable to such other Indian Nation or Tribe than are the terms of this Agreement, then upon request by the Tribe pursuant to Section 20(l) of this Agreement, the parties shall meet to negotiate the incorporation of substantially similar provisions into this Agreement

(n) **Entire Agreement**. This Agreement contains the entire agreement between the parties and supersedes any and all other agreements, either oral or written, between the parties hereto with respect to the subject matter.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement to be effective as of the date first above written.

County of Sullivan

By: Raymond N. Pomeroy II
Title: Chairman – Sullivan County Legislature

By: Daniel L. Briggs
Title: Sullivan County Manager

Approved as to Form:

By: Ira J. Cohen
Title: County Attorney

The Stockbridge-Munsee Community

By: Robert Chicks
Title: Tribal Council President

Approved as to Form:

By: Sharon Greene-Gretzinger
Title: Tribal Attorney

Appendix D-2

Water Supply Agreements

WATER SERVICE AGREEMENT made March 25, 2004 between

TOWN OF THOMPSON, a municipal corporation with its offices at 4052 Route 42, Monticello, NY 12701 (Town),

VILLAGE OF MONTICELLO, a municipal corporation with its offices at 2 Pleasant Street, Monticello, NY 12701 (Village)

and

STOCKBRIDGE-MUNSEE COMMUNITY, BAND OF MOHICAN INDIANS, a federally recognized Indian tribe with its offices at PO Box 70, N8746 Moh He Con Nuck Road, Bowler WI 54416 (Tribe).

WHEREAS, the Town, pursuant to Town Law 198, has the authority to enter into a contract with an outside user for the purpose of providing water service to said outside user, and

WHEREAS, the Village pursuant to Village Law 11-1120 and 11-1124(1) has the authority to enter into a contract with a municipal public improvement district for the purpose of supplying drinking water to such district; and

WHEREAS, the Tribe is desirous of obtaining a water supply for its casino project using the Village's water resources and agrees to pay all costs and charges associated with the construction of the Infrastructure; and

WHEREAS, the Town and the Village are desirous of providing water service to the Tribe from the water supply of the Village in consideration of the Tribe's agreement to build the Infrastructure and then convey ownership of same to the Town and the Village, upon the terms and conditions hereinafter set forth; and

WHEREAS, the Town will create and establish the North Star Water District which will purchase water from the Village and resell it to the Tribe; and

WHEREAS, the Town, Village and Tribe believes it to be in their best interests to enter into this agreement.

The parties agree as follows:

1000 **INTRODUCTION.**

1001 DEFINITIONS. For purposes of this Agreement, the following terms shall have the meanings set

forth in this section unless the context shall require a different meaning:

a. "Town" shall mean Town of Thompson.

b. "Village" shall mean the Village of Monticello.

c. "County" shall mean the County of Sullivan.

d. "Tribe" shall mean Stockbridge-Munsee Community, Band of Mohican Indians.

e. "Town-County Agreement" shall mean the agreement between the Town and the County dated May 16, 2002, dealing with payments in mitigation of impacts from the activities of the Tribe in the Town.

f. "County Agreement" shall mean the agreement between the Tribe and the County dated January 31, 2002.

g. "Memorandum Agreement" shall mean the agreement between the Town and the Tribe dealing with the creation of sewer and water districts executed on or about July 2, 2002.

h. "Department" shall mean the Town's or Village's Sewer and Water Department having jurisdiction.

i. "Superintendent" shall mean the Town's or Village's Superintendent of Water and Sewer having jurisdiction.

j. "Water District" shall mean the Town's North Star Water District.

k. "Water System" shall mean the water distribution system of the Town or Village as the case may be.

l. "Charge" shall mean a charge for service, debt, fine, interest, penalty or other cost imposed by the Water District for use of the system or arising therefrom.

m. "Project" shall mean the casino project and related facilities, as well as future development, to be constructed by the Tribe in the Town on several parcels of land located near Exit 107 of

State Highway 17 and County Route 161.

n. "Infrastructure" shall mean the mains, valves, pumps, hydrants, easements, well, pump house, reclorination stations, pump stations and necessary appurtenances running from the project bounds to and along County Road 161 (Bridgeville Road), County Road 173, East Broadway, Waverly Avenue, Fairgrounds Road, and through the Village's well field to a new well developed by the Tribe for the Village. The Infrastructure is described in **Figure 1**, Conceptual Water System Layout, and will have a connection to the existing Village water system to allow for emergency back-up.

o. "On-site Facilities" shall mean the water mains, pumps, tanks and other related equipment used for water supply distribution and fire protection located within the Project bounds.

p. "BIA" shall mean the Bureau of Indian Affairs of the Department of the Interior.

q. "DEC" shall mean the New York State Department of Environmental Conservation.

r. "Home Rule Legislation" shall mean special legislation adopted by the State of New York to permit the Town and the Water District to provide municipal services to the Tribe's Project.

s. "MHE" shall mean McGoey, Hauser & Edsall Consulting Engineers, P.C. or such other firm as shall be retained by the Town to act as its engineer.

t. "Village Engineer" shall mean the firm of consulting engineers retained by the Village to advise the Village with respect to engineering issues related to the project and the supply of water pursuant to this Agreement.

u. "NYGA" shall mean the New York Gaming Authority of the Tribe.

v. "SEQRA" shall mean state environmental quality review of the actions to be conducted pursuant to this Agreement as provided in Article 8 of the Environmental Conservation Law of the State of New York and applicable regulations.

1002 MEMORANDUM AGREEMENT.

a. Notwithstanding anything to the contrary contained in said Memorandum Agreement, the

Tribe agrees to pay the fees incurred by the Town for legal, engineering and other professional services in conjunction with the negotiations and drafting of this Agreement, such services shall be billed at the usual fees of the providers of such services. These fees shall be paid in accordance with the terms of the Memorandum Agreement or this Agreement whichever shall apply. The fees for services provided herein are in addition to the fees for services provided pursuant to the Memorandum Agreement and shall not exceed $4,500.00. It is understood and agreed that charges set forth in the Memorandum Agreement shall be adjusted to reflect current charges for services required therein.

b. The Tribe shall pay the Village for fees incurred by the Village for Village's legal, engineering and other professional services in conjunction with the negotiations and drafting of this Agreement, such services shall be billed at the usual fees of the providers of such services. The fees for services provided herein shall not exceed $6,500.00.

1003 AUTHORIZATION. The Town, the Town acting for and on behalf of Water District, the Village, and the Tribe hereby affirm that they have the legal authority to enter into this Agreement. This Agreement is contemplated by the provisions of paragraph 6 of the County Agreement. The parties understand that the Village shall not be required to comply with any portion of this Agreement unless an adequate supply of additional water is developed by the Tribe, at its sole cost and expense, to provide for the allocation of water to the Tribe as set forth in this Agreement.

1004 SEQRA REVIEW. The Town, as lead agency, shall undertake all appropriate and required environmental review of the installation of the Infrastructure, unless such environmental review is preempted by federal environmental review under the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*). The Town shall include the Village as an interested agency for such review. The Tribe shall comply with all necessary requirements for the conduct of such review and shall provide such evidence and materials necessary for the Town to conduct such review. Nothing contained in this Agreement related to the construction of the Infrastructure and providing Water service to the Project shall be deemed to be binding on either party pending the completion of such SEQRA review. The signing of this Agreement shall not be deemed to be an action but rather a preliminary step in the review process until such environmental review shall be satisfactorily completed and any adverse environmental impacts shall have been mitigated, as necessary. The reasonable mitigation of all adverse environmental impacts related to the Infrastructure serving the Project shall be undertaken by the Tribe, at its expense, to the satisfaction of the Town, the Village and any other agencies having

jurisdiction. If the determination resulting from such review is challenged by a third party in any proceeding in court, the Tribe shall undertake any necessary defense of such determination on behalf of the Tribe and the Town at the Tribe's sole cost and expense. With the Town's consent with respect to Town issues and/or with the Village's consent with respect to Village issues, the Tribe may undertake any necessary review or appeal in the name of the Town with respect to Town issues and in the name of the Village with respect to Village issues. If such court action shall result in a determination that requires additional consideration of the environmental factors affecting the Infrastructure, the Tribe shall undertake to respond, at its expense, to such issues that the Court may require the Town and/or the Village to address. During such period of litigation and prior to final approval, the Town shall be free to take such action as it deems appropriate with respect to the use of the Water District plant not inconsistent with the purpose of this Agreement provided the Tribe shall comply with the requirements of this Agreement which it must perform pending such final approval.

1005 ADDITIONAL APPROVALS. The Tribe shall bear all reasonable and necessary costs and expenses, including engineering and legal fees, incurred by the Town and the Village to obtain all other necessary approvals from any and all jurisdictions from which such approvals are necessary for the activities proposed under this Agreement including, but not limited to, the New York State Department of Environmental Conservation, the Delaware River Basin Commission and the New York State Department of Health. The Town and Village agree that the Tribe may coordinate efforts to obtain such approvals. Except as otherwise provided, if any such approvals are denied, or if any such approvals are thereafter withdrawn, the Village shall have no further obligation with respect to this Agreement and shall not be required to supply any water pursuant to this Agreement. The Tribe, at its sole cost and expense, may appeal or seek review of any such denial or withdrawal of such approvals within the time allowed for such appeal or review, provided, however, that during such appeal or review process, the Village shall not withdraw from this Agreement and shall remain in all respects obligated to perform this Agreement.

2000 **WATER SERVICE RELATED PROVISIONS.**

2001 USER STATUS. Subject to the provisions of this Agreement, any Legislation adopted by the State of New York related to the authority of the Town of Thompson to enter into an agreement with the Tribe, and the agreement of the Village and the Tribe to increase capacity of the Village's water system to supply the needs of the Tribe as set forth in this Agreement, the parties agree that the Tribe shall be an outside user. If the Tribe or the Town shall elect to have a Town Water District created to

include the territory through which the Infrastructure shall traverse, the Tribe shall pay such costs as provided in the Memorandum Agreement.

2002 WATER SYSTEM CAPACITY ALLOCATION BY VILLAGE.

a. The Village shall sell potable drinking water to the Water District at a rate equal to 1.1 times the charge imposed by the Village on in-Village water users. Such rate shall be for a term of Ten (10) years under this Agreement. The Agreement may be renewed for a successive 10-year term upon the mutual agreement of the parties.

b. The parties understand that the Village shall allocate and provide the Water District and the Tribe with an average daily flow amount, subject to normal flow fluctuations, of not more than 350,000 gallons per day (gpd) for Phase I development of the Tribe's project and not more than a maximum total of 440,000 gpd for Phase I and Phase II development. The Village and Tribe will discuss any future expansion of the Project and the availability of water supply for such use. No increase in the use of the water capacity shall occur without the Village's approval. The parties understand and agree that this capacity is allocated by the Village from the new water source developed by the Tribe solely for the use of the Tribe and may be reduced at the Tribe's discretion, based on the amount of the water supplied by such new source and/or the Tribe's supply needs. Subject to Section 2004 of this Agreement, the parties understand that the capacity allocated to the Tribe may be decreased if the Village shows that the water supply for Village users is inadequate or becomes insufficient.

2003 PAYMENT TO VILLAGE. The Village shall meter the amount of water provided to the Water District and shall bill the Water District for such amount on a monthly basis with payment due 30 days from such billing. If a bill remains unpaid for a period exceeding 60 days, then and in that event, the Village may take action to suspend water service to the Water District provided the Village shall give the Town 20 days prior written notice of the action to be taken, the date upon which such action shall be taken and the reason for taking such action. The Village shall have no right to collect any monies from the Town unless the Town shall have been paid by the Tribe.

2004 INSUFFICIENT CAPACITY. The Tribe understands that, in accordance with New York State Village Law Section 11-1120, the Village may not sell water to the Tribe if thereby the supply for the Village or its inhabitants will be insufficient. However, before the Village may limit or discontinue water service to the Water District and Tribe because of this insufficiency, the Village shall provide

the Tribe with a minimum of eighteen (18) months prior written notice. This notice shall set forth the amount of water that the system needs to remedy the insufficiency. The Village agrees that the Tribe shall have the option to increase the capacity of the Village Water System to remedy the insufficiency identified in the notice, as set forth in Section 2006. If the Tribe opts to increase capacity of the Village Water System so that the Village does not have an insufficient supply, the Village shall give the Tribe and the Water District sufficient time to remedy the insufficiency, so long as the Village water supply remains adequate. This period shall not exceed an additional three (3) years and six (6) months. If the option is not exercised, the Village may limit or discontinue the supply at the end of the eighteen-month period. If the Tribe does not increase the capacity of the Village water supply after giving the Village notice that it would do so, the Village may limit or discontinue water service to the Tribe at the end of the three-year six-month period.

2005 ADDITIONAL CAPACITY. If the Tribe over time demonstrates a need for additional average daily flows of water, the Tribe understands and agrees to undertake, with the Village, a study of this need for increased flows solely at the expense of the Tribe. If the Village determines that additional capacity is necessary, both the Village and Tribe shall assess what the Tribe's fair contribution would be for the development of new water sources. If the Tribe shall fail or refuse to participate in such an assessment, the Village and Town shall not be required to provide additional capacity in excess of the capacity allocation agreed upon by the parties and, in such an event, the Tribe shall limit its use of the capacity to the agreed upon amounts.

2006 ADDITIONAL WATER SOURCES. The parties intend that the Tribe will have the ability to identify additional water sources to increase the Village's water supply capacity or decrease the amount of water the Tribe will use from the Village's water system, so that the Project can maintain water service from the Village without affecting the supply for resident users of the Village. The Village and Town understand and agree that the Tribe will not be obligated to fund water studies to increase capacity so that water from the Village water system can be used to supply any other outside user.

2007 ON-SITE FACILITIES. The On-Site Facilities shall be owned, operated and maintained by the Tribe. The On-Site Facilities will be designed and constructed by the Tribe in accordance with Section 2010 and shall be constructed in accessible areas including, but not limited to, along the access roads serving the Project, as well as any connection facilities within the Project. All construction activities related to the installation of the On-Site Facilities shall be observed by MHE

and the Village Engineer to assure the Town and Village that all work has been completed in accordance with the applicable specifications. The Town's cost for MHE and the Village's cost for the Village Engineer to undertake their respective responsibilities shall be reimbursed to the Town and Village by the Tribe pursuant to the Memorandum Agreement, this Agreement or any other related agreement. "As built" drawings of the On-Site Facilities will be prepared by the engineers retained by the Tribe with copies provided to the Town and Village. Notwithstanding the aforesaid, in the event that the Tribe shall fail to maintain the On-Site Facilities after receiving proper prior notice from the Department that maintenance is needed, the Department may enter upon Project lands to repair or maintain the On-Site Facilities at the cost of the Tribe. If the Tribe disagrees with the findings of the Department, as to any alleged failure to maintain the On-Site Facilities, it shall have the right to challenge the Department's determination in accordance with this Agreement.

2008 INFRASTRUCTURE CONSTRUCTION AND ENGINEERING. The engineering, design and construction of the Infrastructure shall be undertaken by the Tribe, or an engineer mutually agreed upon by the parties, and be subject to the review, supervision and approval of construction by the Town and Village in accordance with all applicable regulations. The final design and construction of these improvements will be undertaken when all applicable permits and authorizations are issued for the Project. The Tribe agrees to be responsible for the entire cost of construction of the Infrastructure, as well as for the Town's and Village's cost of design, engineering, and required approvals of the Infrastructure and On-Site Facilities as well as any associated legal and permit fees. Notwithstanding the provisions set forth in this paragraph, if unknown or unanticipated conditions are discovered with respect to the design, placement, or construction of the Infrastructure that create a need to materially alter the Tribe's design and engineering plans, the Tribe shall have the right either to pay the Town's and Village's reasonable expenses attendant thereto or to abandon the planned connection to the Water District. Provided, however, that the Tribe shall still be responsible for all costs up to the Tribe's decision to abandon the planned connection to the Water District, as well as any reasonable Town and Village costs associated with the Tribe's decision. If MHE or the Village Engineer makes a finding that there is a need to materially alter the design and engineering plans of the Infrastructure, they must provide timely notice to the Tribe's engineers in order to resolve the matter in the most efficient and cost effective way.

2009 OWNERSHIP OF INFRASTRUCTURE. The Tribe shall transfer ownership of the Infrastructure that lies within the Town's municipal boundaries to the Town in such form as the Town shall direct. The Tribe shall transfer ownership of the Infrastructure that lies within the Village's municipal

boundaries to the Village in such form as the Village shall direct. After the Tribe transfers ownership to the Town and Village, each respective party shall be responsible for the operation and maintenance of that portion of the Infrastructure, which is situated within each municipality.

2010 CONSTRUCTION STANDARDS. All materials, including pipe fittings, backfill materials and construction techniques for the installation of any water facility to be constructed, including the Infrastructure, shall be completed in accordance with the latest version of the applicable water specifications. The Tribe agrees that the On-Site Facilities will be constructed in accordance with the more stringent of the Town and Village's water specifications.

2011 CONNECTION TO THE WATER SYSTEM. The parties agree that other users shall not be permitted to connect to the Tribe's On-site Facilities. The parties further agree that other users will not be permitted to connect to the Infrastructure without the written approval and consent of the Village. The parties agree that any premises that are contiguous, now or hereafter, to the Village, may request annexation to the Village. Upon approval of annexation to the Village, said premises may connect, without charge, to the Infrastructure and shall pay only for the water utilized.

2012 CAPITAL CHARGES BY TOWN. The parties agree that the imposition of charges for capital costs shall not apply to the initial cost of the construction and installation of the Infrastructure. If there are additions to the Infrastructure of the Water District that are a general charge on the Water District, the Tribe shall bear its fair share of such cost as jointly determined by the Tribe and Town.

2013 OPERATION AND MAINTENANCE CHARGES BY TOWN.

a. The Rate: The charge to the Tribe by the Water District for water service during the term of this Agreement shall be the equal to the charge made by the Village to the Water District for the purchase of water plus any operation and maintenance charges incurred by the Town or the Water District for the maintenance of the Infrastructure as well as any reasonable charges incurred by the Town in the administration of the purchase of the water. Such charges may include, for example, any reasonable costs incurred by the Town in settling the charges with the Village for the water consumed on the Tribe's project or by other users of the infrastructure. If there shall be more than one user of the Infrastructure, the costs incurred for operation and maintenance other than cost of water shall be shared ratably between the users in proportion to the gallonage used. The operation and maintenance charges will be the actual charges incurred by the Water District for labor and materials used for the maintenance

of the Water System.

b. The Bill: The Town shall bill the Tribe on a monthly basis, which sum shall be paid by the Tribe to the Town within fifteen (15) days after presentation thereof. The amount due shall bear interest at the statutory interest rate if the amount billed shall not be paid within such fifteen (15) days from the date of such bill.

c. Sub-metering: The Tribe shall be responsible for metering of individual On-Site Facilities users. Neither the Village nor the Town shall be responsible for billing individual On-Site Facilities users or collecting the amount due from such individual On-Site Facilities users. The Town or Village, as applicable, shall bill other users of the water line and the Tribe shall not be responsible for any water lines users who are outside the Project bounds unless such other water line users are owned or controlled by the Tribe.

d. Offset and defenses: If a proceeding is brought by the Tribe to challenge the bill for service, the sole questions to be determined in such proceeding shall be the accuracy of the bill, the accuracy of the meter and whether the charges are properly calculated. No claims, other than those relating to these issues, may be asserted by the Tribe or interposed by the Town or the Water District. Prior to making any such claim and commencing dispute resolution, the Tribe shall pay all charges which are past due and shall be required to allege in its pleading that such payments have been made.

2014 TOWN AND VILLAGE SERVICE. The Town and/or Village, as appropriate, shall service the Infrastructure owned by each such municipality so that same shall be maintained in good working order. The Town and/or Village shall provide the Tribe with prior notice before entering on tribal property to inspect the On-Site Facilities. It is understood that any capital expenditure made by the Town or Village in connection with the service of the Infrastructure shall be a capital charge borne by the Tribe and any other user of the Infrastructure ratably with the approximate share of usage of the Infrastructure.

2015 NYGA. The Tribe may authorize the NYGA to be the party obligated pursuant to this Agreement to make payment required to be made to the Town, or the Water District or the Village. If the Tribe does so, it shall send written notification, return receipt requested, to the Supervisor of the Town and the Mayor of the Village. If said notification does not occur, the Town or Village may elect to hold the Tribe liable for all payments owed until the date of actual notification to the Supervisor or Mayor.

2016 PROTECTION OF THE SYSTEM. The Town and Village may take appropriate action to protect the Village's Water System including temporary termination of use of the Infrastructure by the Tribe, if the Tribe shall fail to correct a notice of violation within sixty (60) days following notice of such violation or as directed to be taken by the State or other agency. To terminate use, the violation must be an immediate threat to the Infrastructure or Water District Plant. For other violations, a fine in accordance with the schedule set forth in the Town's or Village's Code, as same may be amended from time to time, may be imposed. Nothing set forth in this paragraph shall be deemed to limit the Town's, Village's or Water District's authority to protect the Water System. The Tribe shall comply with any order of an agency of the State of New York, Delaware River Basin Commission or any other agency or department having jurisdiction over the Water System.

2017 POWERS OF THE TOWN AND VILLAGE. In addition to any power set forth in this Agreement or in any applicable statute, rule or regulation, the Town and Village shall have the following powers:

a. To charge interest at the statutory rate on any charge that is not paid within the 60 days following the date a bill is rendered.

b. To charge a late payment fee on any bill past due, such late payment fee to be set in accordance with the Town or Village Code.

c. To impose a re-connection fee in the event that service is terminated; such amount to be determined by the Town or Village Board and not to exceed $1,000.00.

d. To terminate use if after 60 days written notice, all outstanding charges for service, interest, fines, penalties and late charges shall be unpaid. It being understood, that termination of service shall be accomplished by closing main valves and shall not destroy any portion of the Infrastructure. The Tribe shall not take any action to open a closed valve to restore service except with the written approval and consent of the Town and/or Village.

e. To impose fines pursuant to the Town or Village Code for tampering, damaging, destroying or otherwise adversely affecting the operation of the Infrastructure.

f. To issue a cease and desist order directing the Tribe to terminate any action that it has undertaken which the Town or Village determines, after due process, is in violation of the regulations adversely affecting the operation of the Infrastructure.

g. To access the Tribe's On-Site Facilities to conduct water testing, so long as adequate prior notice is provided to the designated tribal authorities before the entry onto tribal property.

2018 ABANDONMENT OF FACILITY. If the Tribe shall abandon the Project or shall fail to use the Infrastructure, ownership of the Infrastructure within the Town's municipal boundaries shall vest in the Town and ownership of the Infrastructure within the Village's municipal boundaries shall vest in the Village 30 days following the giving of notice of such abandonment by the Tribe to the Town and Village. For the purposes of this paragraph, abandonment shall be the intentional withdrawal from the Project or from the use of the Infrastructure by the Tribe for a period in excess of six (6) months. In addition, all of the Tribe's payment obligations under this Agreement, except the continuing obligation regarding payment of engineering costs incurred pursuant to Paragraphs 2007 and 2008, shall terminate if there is abandonment by the Tribe.

2019 INTERMUNICIPAL AGREEMENT. This Agreement shall be deemed to be an intermunicipal agreement between the Town and the Village.

3000 GENERAL CONTRACT PROVISIONS.

3001 INDEMNIFICATION. The parties shall be liable to and indemnify each other as follows:

a. Negligence. The Town and Tribe agree to hold harmless and indemnify each other from claims and/or damages arising out of this Agreement that result from their respective negligence, as well as legal fees, costs and expenses incurred in defending such claims. The Tribe further agrees to hold harmless and indemnify the Village from claims arising out of this Agreement and for any and all sums the Village may be called upon to pay as a result of such claims; except, the Tribe shall not be responsible to indemnify the Village for claims due to negligence or willful misconduct by the Village. The Tribe shall also reimburse the Village for any and all legal fees, costs and expenses incurred by the Village in defending such claims.

b. Insurance. The Tribe shall obtain liability and property damage insurance coverage for the Tribe's responsibilities and actions under the terms of this Agreement in at least the following amounts: $1,500,000.00 for the injury to or death of any one person, $3,000,000.00 for injuries to or death of more than one person arising out of the same accident, and $250,000.00 for injury to property. Any such policies may be carried under blanket coverage

policies. The Village and Town shall be named insureds under said policy of insurance and shall be presented with evidence of such insurance coverage.

c. Claims of contractors, sub-contractors, materialmen and laborers. The Tribe shall indemnify and hold the Town and Village free and harmless from any and all claims of whatsoever kind and nature arising from employment of contractors, sub- contractors, materialmen and laborers working on the construction of the Infrastructure. Before the acceptance of the Infrastructure, the Tribe shall deliver to the Town and Village waivers of all liens and acknowledgments of payment of the total amount due such person. The claim of any party refusing to sign such waiver shall be fully bonded by the Tribe for the amount of such claim.

d. Damages. In the event that the Tribe shall cause any damage to the On-Site Facilities that may cause damage to the Infrastructure or any part thereof and to the other facilities of the Village or Town, the Tribe shall undertake all steps reasonably necessary to rectify or otherwise repair the damage, if possible, and if not, to timely terminate the use of the On-Site Facilities. Nothing set forth herein shall limit the Town's authority to undertake the necessary steps to protect the Water System, the Village's authority to protect its water supply or the parties' ability to terminate improper use by Tribe as provided in this Agreement. This paragraph shall not be deemed to limit liability of any user of the Water System to the Town or Village.

3002 LIMITED WAIVER OF SOVEREIGN IMMUNITY.

a. By the Town. The Town hereby waives its immunity for the limited purpose of enforcement of this Agreement, from uncontested suit to permit arbitration of disputes as provided herein and to permit the state courts to compel such arbitration and to enforce the terms of any award or order resulting from such arbitration.

b. By the Village. The Village hereby waives its immunity for the limited purpose of enforcement of this Agreement, from uncontested suit to permit arbitration of disputes as provided herein and to permit the state courts to compel such arbitration and to enforce the terms of any award or order resulting from such arbitration.

c. By the Tribe -- Non-Monetary Relief. The Tribe hereby waives its sovereign immunity, with respect to injunctive non-monetary relief, for the limited purpose of enforcement of this

Agreement, from unconsented suit to permit arbitration of disputes as provided herein and to permit the state courts to compel such arbitration and to enforce the terms of any award or order resulting from such arbitration.

d. By the Tribe -- Monetary Relief. The Tribe hereby waives its sovereign immunity to permit arbitration of disputes as provided herein and with respect to monetary relief for the limited purpose of enforcement of this Agreement in relation to payments, fees and fines addressed herein. Such relief is limited to the revenue derived by the Tribe from operation of the Project. The Tribe further waives its sovereign immunity to permit the state courts to compel such arbitration, and to enforce the terms of any award or order resulting from such arbitration.

3003 DISPUTE RESOLUTION.

a. The parties agree that any suit commenced as provided herein shall be brought in the Supreme Court of New York for Sullivan County (and appeals therefrom shall be brought in the New York State Appellate Courts) or, if that Court has no jurisdiction, then in any court of competent jurisdiction including, but not limited to, the Tribe's Gaming Disputes Court or Tribal Court.

b. It is acknowledged by the parties that a quick and efficient resolution of any dispute, claim or controversy arising under or relating to this Agreement, the breach, termination, or validity of this Agreement, or the dealings between the parties, or with respect to any claim arising by virtue of any representations made by any party (collectively, "Dispute") is critical to the implementation of this Agreement. In order to effectuate such intent, the parties do hereby establish this dispute resolution procedure. All Disputes shall be subject to this provision. No time bar defenses shall be available based upon the passage of time during any negotiation called for by this provision.

c. Either party shall give the other party written notice of any Disputes ("Dispute Notice") which Dispute Notice shall set forth the specific nature of the Dispute and the amount of loss, damage and cost of expense claimed, if any.

d. Within ten (10) days of the Dispute Notice the parties shall meet to negotiate in good faith to resolve the Dispute. Separately and independently, either party may seek injunctive relief

from the New York State Supreme Court, Sullivan County, to maintain the status quo during the following dispute resolution process, upon or after service of a Dispute Notice by one party upon the other.

e. In the event the Dispute is unresolved within thirty (30) days of the Dispute Notice by good faith negotiations, the Dispute shall be arbitrated upon the filing by either party of a written demand, with notice to the other party, to and under the rules of a provider of dispute resolution services ("Arbitration Service") acceptable to the parties (to the extent such rules are not inconsistent as provided herein) in White Plains, New York before a single arbitrator under the then current Commercial Arbitration Rules of the American Arbitration Association. Within ten (10) days after receipt of written notice of the Dispute being brought to the arbitrator, each party shall submit to the arbitrator a best and final offer with respect to each issue submitted to the arbitrator and an accompanying statement of position containing supporting facts and data. Upon such Dispute being submitted to the arbitrator for resolution, the arbitrator shall assume exclusive jurisdiction over the Dispute, and shall utilize such consultants or experts as he shall deem appropriate under the circumstances, to assist in the resolution of the dispute and will be required to make a final binding determination, not subject to appeal, within forty-five (45) days of the date of submission.

f. For each issue decided by the arbitrator, the arbitrator shall award the expenses of the proceeding to the prevailing party with respect to such issue. The arbitrator in arriving at his decision, shall consider the pertinent facts and circumstances as presented in evidence and be guided by the terms and provisions of this Agreement and applicable law, and shall apply the terms of this Agreement without adding to, modifying or changing the terms in any respect, and shall apply the laws of the State of New York to the extent such application is not inconsistent with this Agreement.

g. The arbitration shall be governed by Article 75 of the Civil Practice Law and Rules of the State of New York, to the extent not inconsistent with this Agreement. Any arbitration award may be entered as a judgment in the courts of the State of New York. A printed transcript of any such arbitration proceeding shall be kept and each of the parties shall have the right to request a copy of such transcript, at its sole cost.

h. The parties agree that, in addition to monetary relief, the arbitrator may make an award of injunctive relief and the parties further agree that the arbitrator is empowered to enforce any

of the provisions of this Agreement.

i. The arbitrator is not empowered to award compensatory damages in excess of the monetary relief agreed to herein. Each party hereby irrevocably waives any right to recover punitive damages with respect to any Dispute resolved by arbitration. The parties further agree that the arbitrator and/or the Court shall have no authority nor jurisdiction to order execution against any assets or revenues of the Tribe except those set forth in Paragraph 3002 (c) of this Agreement. The arbitrator is not empowered to award damages against the Tribe except to the extent of revenue derived from operation of the Project.

3004 ADDITIONAL AGREEMENTS. The parties understand that this Agreement covers many issues generally and that there may be ambiguities and questions that may require additional more detailed agreements. It is agreed that construction agreements and agreements for engineering services in connection with construction will be required. The parties agree that they shall negotiate in good faith to achieve the execution of such agreements.

3005 DISPUTE BETWEEN TOWN AND VILLAGE. If in the course of administration of this agreement, the Town, the Water District and Village and the Village shall each have jurisdiction of a dispute, the entity most immediately affected shall be deemed to have final authority to determine the resolution of such issue. The Town, the Water District and the Village shall attempt to cooperatively work to resolve all issues related to the administration of this agreement. Only in the event of an imminent threat to the public health and safety of any user of the Water System shall the Town, the Water District and the Village have authority to unilaterally enter orders binding on all others to close down the water system in each such party's jurisdiction. In all other events, if the parties cannot agree on the entity that shall have final authority to resolve a dispute, the parties may submit the matter to summary arbitration before a panel consisting of three persons, one selected by the Village and one selected by the Town and one selected by the members so chosen. The panel shall proceed to hear the matter summarily and expeditiously enter a final and binding order determining the entity with such final authority.

3006 OBLIGATIONS INDEPENDENT. The parties agree that neither party shall have the right to offset any other claim that one party may have against the other with respect to a claim arising under or in connection with this Agreement. The rights of each party are independent.

3007 JUDICIAL REVIEW AND SURVIVAL OF CONTRACT. In the event that any term of this

Agreement shall be construed to be illegal or unenforceable at law or in equity, the same shall be deemed to be void and of no force or effect to the extent necessary to bring such term within the provisions of any applicable law or laws, and such term as so modified and the balance of the terms of this Agreement shall be fully enforceable.

3008 NOTICE. In a case where there is imminent danger to the continued good operation of Water System requiring immediate preventative action by the Town or the Water District, notice may be given to the Tribe by the Town after the Town shall have acted, but the Town shall make every effort to advise the Tribe of the action taken within 24 hours. In addition, in a case where there is imminent danger to the Village's water supply system requiring immediate preventative action by the Village, notice may be given to the Tribe by the Village after the action, but the Village shall make every effort to advise the Tribe of the action taken within 24 hours. Such notice of an imminent danger may be given orally, by fax, by telephone or in writing. In any provision requiring notice to be sent by one party to the other, such notice may be made by personal delivery, mail or overnight carrier. Notice to the Tribe shall be provided to the Casino General Manager at the address of the Project and the Tribal President and the Tribal Attorney at the address set forth in this Agreement or such other address as the parties shall provide in writing to the other parties. Notice to the Town shall be provided to the Town Supervisor at the address set forth in the Agreement or such other address as the parties shall provide in writing to the other parties. Notice to the Village shall be provided to the Village Mayor at the address set forth in the Agreement or such other address as the parties shall provide in writing to the other parties. Notice given personally or by courier shall be deemed given on actual receipt at the address of such delivery and mailed notices shall be deemed given as of 10AM of the third business day after mailing.

3009 PARTIES BOUND. This Agreement shall bind the parties hereto their successors and assigns.

3010 INTERPRETATION. Whenever the context shall require, the singular shall include the plural, and the plural shall include the singular, and words of any gender shall be deemed to include words of any gender.

3011 ENTIRE AGREEMENT. The terms of this Agreement constitute the entire agreement between the parties and shall supercede all prior understandings and agreements between the parties with regard to the water rates. This Agreement may not be modified, changed or supplemented, nor may any obligation hereunder be waived, except by written instrument signed by the party to be charged.

The parties have executed this Agreement.

TOWN OF THOMPSON

BY: _____

DATE: 3-17-04

STOCKBRIDGE-MUNSEE COMMUNITY

BY: _____

DATE: 3-19-04

VILLAGE OF MONTICELLO

BY: Richard M. Josh, VILLAGE MANAGER

DATE: 3/25/04

Water Infrastructure Schedule

1. Water Supply Well
   - 24 x 18 inch Gravel Packed Well
   - Submersible Well Pump
   - Pump Capacity of 400 gpm at 165 ft TDH (Preliminary Design Estimate)
2. Pump Control Building
   - Approximately 16 ft x 25 ft
   - Flow Meter
   - Disinfection System Including Sodium Hypochlorite Tank and Dosing Pump
   - Corrosion Control System Including Caustic Holding Tank and Dosing Pump
   - Iron and Manganese Control System Including Polyphosphate Tank and Dosing Pump
3. Backup Power Generator
   - 20 kW Generator to Power Well Pump and Chemical Feed Systems
4. Water Main
   - Approximately 28,000 lf of 8" Class 52 Ductile Iron Water Main
   - Hydrants Located Every 1,000 ft Along Alignment
   - Gates Located Every 1,000 ft Along Alignment
5. Storage Tank
   - On-Site Water Storage Tank to be Provided and Owned by the Stockbridge-Munsee Community
6. Emergency Interconnection to Village Water System

RIZZO ASSOCIATES
A TETRA TECH COMPANY

Stockbridge-Munsee Casino
Thompson, New York
September 26, 2003

Conceptual Water System Layout

Figure 1

Appendix D-3

Wastewater Services Agreements

SEWER SERVICE AGREEMENT

TOWN OF THOMPSON AND KIAMESHA LAKE
SEWER DISTRICT

WITH

STOCKBRIDGE-MUNSEE COMMUNITY,
BAND OF MOHICAN INDIANS

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AGREEMENT made February 5, 2003 between

TOWN OF THOMPSON, a municipal corporation with its offices at 4052 Route 42, Monticello, New York 12701 (Town) and the **KIAMESHA LAKE SEWER DISTRICT**, a special improvement district, having its office at 4052 Route 42, Monticello, New York 12701

and

STOCKBRIDGE-MUNSEE COMMUNITY, BAND OF MOHICAN INDIANS, a federally recognized Indian Tribe, PO Box 70, N8746 Moh He Con Nuck Road, Bowler WI 54416 (Tribe).

WHEREAS, the Town and the Tribe previously entered into a Memorandum Agreement dated on or about July 2, 2002 (the "Memorandum Agreement") pursuant to which the Town undertook a feasibility study of water and sewer alternatives to service the Tribe's proposed casino Project; and

WHEREAS, as a result of the work performed under the Memorandum Agreement the Map Plan and Study for Extension No. 4 to the Kiamesha Lake Sewer District (the "Sewer Study") was produced; and

WHEREAS, the Kiamesha Lake Sewer District has excess capacity to provide to the Tribe to service the Tribe's Project and the Town adopted Resolution No.___ committing to the Tribe up to 345,000 gallons per day in excess capacity to service the Project; and

WHEREAS, the Town, pursuant to Town Law §198, and subject to the adoption of special Home Rule legislation by the State of New York, has or will have the authority to enter into a contract with an outside user for the purpose of providing sewer service to an outside user, and

WHEREAS, the Tribe is desirous of connecting its facilities to the Kiamesha Lake Sewer

District and is willing and has agreed to pay all costs and charges associated with the construction of the Infrastructure in accordance with the terms of this Agreement and the Memorandum Agreement; and

WHEREAS, the Town, for itself and acting for and on behalf of the Kiamesha Lake Sewer District, is desirous of providing to the Tribe sewer service from the Kiamesha Lake Sewer District in consideration of the Tribe's agreement to build and convey title to the Infrastructure to the Town, upon the terms and conditions hereinafter set forth; and

WHEREAS, the Town believes it to be in the best interests of the Town and the Kiamesha Lake Sewer District to enter into this Agreement.

The parties agree as follows:

1000 INTRODUCTION

1001 DEFINITIONS. For purposes of this agreement, the following terms shall have the meanings set forth in this section unless the context shall require a different meaning:

a. "Town" shall mean Town of Thompson.

b. "Village" shall mean the Village of Monticello.

c. "County" shall mean the County of Sullivan

d. "Tribe" shall mean Stockbridge-Munsee Community, Band of Mohican Indians.

e. "Town-County Agreement" shall mean the agreement between the Town and the County dated May 16, 2002, detailing payments in mitigation of impacts from the activities of the Tribe in the Town.

f. "County Agreement" shall mean the agreement between the Tribe and the County dated January 31, 2002.

g. "Memorandum Agreement" shall mean the agreement between the Town and the Tribe dealing with the creation of sewer and water districts executed on or about July 2, 2002.

h. "Department" shall mean the Town's Sewer and Water Department.

i. "Superintendent" shall mean the Town's Superintendent of Water and Sewer.

j. "Sewer District" shall mean the Kiamesha Lake Sewer District.

k. "Sewer District System" shall mean the sewer plant and the collection system.

l. "Sewer District Plant" shall mean the Sewer District sewer plant used for the final processing of sewage.

m. "Charge" shall mean a charge for service, debt, fine, interest, penalty or other cost imposed by the Sewer District for use of the system or arising therefrom.

n. "Project" shall mean the casino project and related facilities, as well as future development, to be constructed by the Tribe in the Town on several parcels of land located near Exit 107 of State Highway 17 and County Route 161.

o. "Infrastructure" shall mean the force main, gravity sewer line, and pump station, easements and necessary appurtenances running from the project bounds to and along Town Road 161 (Heiden Road) to and along NYS Route 42 to the Town interceptor sewer and the On-Site Facilities.

p. "On-Site Facilities" shall mean the on-site pump station, force main, and/or

gravity sewer line from the on-site pump station to the property line, all being located within the project bounds.

q. "Project Sewer Line" shall mean the on-site sewer main and laterals servicing the various buildings and facilities on the site and running from the pump station of the On-Site Facilities to the various buildings and facilities within the project bounds.

r. "Average Daily Flow" shall mean the flow of sewage calculated using the average of thirty (30) consecutive days of flow, measured by an accurately calibrated flow meter and where a period of longer than one month, then and in such instance, the average daily flow shall be calculated by taking an average daily flow for each monthly period, adding the averages for all such months and dividing by the number of months involved. Month for the purposes of this subparagraph shall be any 30 consecutive days

s. "BIA" shall mean the Bureau of Indian Affairs of the Department of the Interior.

t. "DEC" shall mean the New York State Department of Environmental Conservation.

u. "Home Rule Legislation" shall mean special legislation adopted by the State of New York to permit the Town and the Sewer District to provide municipal services to the Tribe's Project.

v. "Inside User" shall mean a Sewer District user whose property is located inside the legal bounds of the Sewer District.

w. "MHE" shall mean McGoey, Hauser & Edsall Consulting Engineers, P.C. or such other firm as shall be retained by the Town.

x. "NYGA" shall mean the New York Gaming Authority of the Tribe.

y. "Outside User" shall mean a Sewer District user under contract with the Sewer District whose property is located outside the legal bounds of the Sewer District.

z. "SEQRA" shall mean state environmental quality review of the actions to be conducted pursuant to this agreement as provided in Article 8 of the Environmental Conservation Law of the State of New York and applicable regulations.

aa. "Sewer Study" shall mean the Map, Plan and Report dated October 1, 2002, for Extension No. 4 to the Kiamesha Lake Sewer District.

1002 MEMORANDUM AGREEMENT. Notwithstanding anything to the contrary contained in said Memorandum Agreement, the Tribe agrees to pay the fees incurred by the Town for legal, engineering and other professional services in conjunction with the negotiations and drafting of this Agreement, such services shall be billed at the usual fees of the providers of such services and that the fees shall be paid in accordance with the terms of the Memorandum Agreement or this Agreement whichever shall apply. The fees for services provided herein are in addition to the fees for services provided pursuant to the Memorandum Agreement and shall not exceed $10,000.00. It is understood and agreed that charges set forth in the Memorandum Agreement shall be adjusted to reflect current charges for services required therein.

1003 AUTHORIZATION. The Town, the Town acting for and on behalf of Sewer District and the Tribe hereby affirm that they have the legal authority to enter into this Agreement. This Agreement is contemplated by the provisions of the paragraph 6 of the County Agreement.

1004 SEQRA REVIEW. The Town shall undertake all appropriate and required

environmental review of the installation of the Infrastructure. The Tribe shall comply with all necessary requirements for the conduct of such review and shall provide such evidence and materials necessary for the Town to conduct such review. Nothing contained in this Agreement related to the construction of the Infrastructure and providing sewer service to the Project shall be deemed to be binding on either party pending the completion of such SEQRA review. The signing of this Agreement shall not be deemed to be an action but rather a preliminary step in the review process until such environmental review shall be satisfactorily completed and any adverse environmental impacts shall have been mitigated, as necessary. The reasonable mitigation of all adverse environmental impacts related to the Infrastructure serving the Project shall be undertaken by the Tribe, at its expense, to the satisfaction of the Town and any other agencies having jurisdiction. If the determination resulting from such review is challenged by a third party in any proceeding in court, the Tribe shall undertake any necessary defense of such determination on behalf of the Tribe and the Town at the Tribe's sole cost and expense. With the Town's consent, the Tribe may undertake any necessary review or appeal in the name of the Town. If such court action shall result in a determination that requires additional consideration of the environmental factors affecting the Infrastructure, the Tribe shall undertake to respond, at its expense, to such issues that the Court may require the Town to address. During such period of litigation and prior to final approval, the Town shall be free to take such action as it deems appropriate with respect to the use of the Sewer District plant not inconsistent with the purpose of this Agreement provided the Tribe shall comply with provisions of this Agreement which it must perform pending such final approval.

2000 SEWER SERVICE RELATED PROVISIONS

2001 SEWER PLANT CAPACITY ALLOCATION. Subject to any DEC review, if required, and if approved after a SEQRA review, the parties intend that the Sewer District shall allocate to the Project an average daily flow amount, subject to normal flow fluctuations, of not less than 270,000 gallons per day for Phase I development and not more than

345,000 gallons per day for Phase II development of the total rated processing capacity of the Sewer District Plant to be used in connection with the Project and as discussed in the Sewer Study. The parties agree that Phase II shall be completed within 7 years from the date of connection of the Phase I facility. If Phase II shall not be so constructed within such time period, the allocation made pursuant to this paragraph shall expire and be of no further force and effect; provided, however, the parties may negotiate an extension of such allocation on such terms as the parties may agree in writing. The parties further understand that Inside Users have certain rights to use capacity that is not available to Outside Users and Inside Users may under certain circumstance preempt Outside Users from capacity allocation, unless otherwise provided by the Home Rule Legislation. In such event, the Town shall use the capacity allocation payments to apply to the increase in capacity of the Sewer District plant. Upon the adoption of Home Rule Legislation, this Agreement shall be amended, as necessary, to be consistent with the terms of such Home Rule Legislation.

2002 CAPACITY ALLOCATION CHARGES. The Tribe shall pay to the Town, for and on behalf of the Sewer District, an initial annual capacity allocation charge in the sum of $150,000.00 for an allocation of 345,000 gallons. After the connection of Phase I of the Project to the Sewer District System, the Tribe shall pay an annual Phase II capacity allocation charge of $30,300.00 for 75,000 gallons. These capacity allocation charges shall be due in accordance with this Agreement and shall not be refundable to the Tribe. If such allocation is not exercised within 7 years from the effective date of the Agreement, the allocation shall expire unless extended by mutual agreement by the parties in writing. The capacity allocation charges shall be used for the purpose of adding capacity equal to that reserved to the Sewer District plant and such payments shall be held in a separate fund in an investment authorized for municipalities pursuant to law, and shall be used for future expansion of the Sewer District plant.

a. The initial annual capacity allocation charge shall be paid by Tribe to the Sewer District in accordance with the following schedule. Upon the execution of this

Agreement by all parties, the Tribe shall pay toward the capacity allocation charge, the sum of $25,000.00; upon the adoption of the Home Rule Legislation, the sum of $50,000.00 shall be paid; upon the completion of the SEQRA proceedings, the sum of $50,000.00 shall be paid; and upon the earlier of the anniversary date of the adoption of the Home Rule Legislation or obtaining of all approvals, the sum of $25,000.00 shall be paid. Thereafter, the initial annual capacity allocation charge shall be paid in quarterly installments of $37,500.00 commencing with the anniversary date of the adoption of the Home Rule Legislation until such time as the Tribe's Project is connected to the Sewer District System or the Tribe terminates the Project. In the year when the Project is connected to the Sewer District System, the Town shall credit the Tribe on a pro-rata basis for the portion of the annual capacity allocation charge that covers the remainder of the year following the date of connection. Although payable in installment, the entire annual capacity allocation charge is due on the anniversary date.

b. Upon connection of Phase I of the Project to the Sewer District System, the capacity allocation charge shall be reduced $30,300.00 as provided herein. This sum shall be paid annually on the anniversary date, which is the adoption of the Home Rule Legislation, except that in the year of connection to the Sewer District System, after credit made in subparagraph a of this paragraph, a pro rata charge shall be made for the remainder of the year for the Phase II portion of such capacity allocation charge. The annual Phase II capacity allocation charges are payable in full on the anniversary date and shall end on connection of Phase II of the project with a prorate rebate or credit for the portion of the year remaining after such connection.

c. If after the implementation of Phase II of the Project, the Tribe shall produce average daily flow amounts of more than 345,000 gallons per day of sewage for a period of six consecutive months, the Tribe understands and agrees that it shall

undertake with the Town a study to determine the manner in which such usage may be reduced to the allocated amount. If the parties determine to a reasonable degree of certainty that the increased usage is permanent in nature, then the Tribe and the Town shall determine if additional sewage plant capacity is necessary and if so determined, what the Tribe's fair contribution would be for construction of the additional capacity to the Sewer District Plant. If the Tribe shall fail, neglect or refuse to participate in such study, review and determination, the Town shall not be required to provide additional capacity in excess of the capacity allocation agreed upon by the parties and in such event, the Tribe shall limit its use of capacity in excess of the agreed upon amount of capacity.

2003 CONNECTION CHARGES. The parties agree that there shall be a minimum connection fee in the amount of $50,000.00 payable on or before the date when the Sewer District System receives sewage flows other than test flows from the Project.

2004 ADDITIONAL CAPACITY. The parties agree that if the Town shall be required to increase the capacity of the Sewer District Plant, the monies paid pursuant to paragraphs 2001 and 2002 by the Tribe to the Town for and on behalf of the Sewer District plus any accrued income, if any, shall be applied to the cost of such increase in capacity and thereafter the Tribe shall be responsible for to pay the cost of construction of up to 345,000 gallons of Sewer District Plant rated capacity. It is understood and agreed that the application of monies paid may be applied to increase in sewer plant capacity pro-rata with other users or at one time, provided that the Town shall advise the Tribe of the number of gallons of their additional capacity obligation shall have been satisfied. If additional funds are necessary, the Tribe shall pay such funds to the Sewer District for purposes of construction as herein provided in a timely manner.

2005 USER STATUS. Subject to the provisions of this Agreement and the Home Rule Legislation, the parties agree that the Tribe shall be an outside user. The parties agree that they currently intend to have the Sewer District extended or a new district formed to

include the territory through which the Infrastructure shall traverse, and that the Tribe shall pay for such extension as provided in the Memorandum Agreement.

2006 APPROVALS, EASEMENTS. The parties understand that certain transactions, which encumber tribal lands, require approval of the Bureau of Indian Affairs. The Tribe will undertake at its cost to obtain approval of a permanent utility easement over such lands for the purpose of permitting the Town or the Sewer District to own and operate the On-Site Facilities. Pending such approval, Tribe hereby grants permission to the Town and Sewer District to enter onto the Tribe's Project lands for the limited purpose of operating and maintaining the On-Site Facilities in accordance with this Agreement.

2007 PROJECT SEWER LINE. The Project Sewer Line shall be owned, operated and maintained by the Tribe. The Project Sewer Line and the sanitary sewage collection system will be designed and constructed by the Tribe and shall be constructed in accessible areas including, but not limited to, along the access roads serving the Project, as well as any connection facilities within the Project. All construction activities related to the installation of the Project Sewer Line shall be observed by MHE, as engineers for the Town, to assure the Town that all work has been completed in accordance with the Town sewer specifications and the plans and specifications for the Project Sewer Line. The Town's cost for MHE to undertake its responsibilities shall be reimbursed to the Town by the Tribe pursuant to the Memorandum Agreement, this Agreement or any other related agreement. "As built" drawings of all project sewer line will be prepared by the engineers retained by the Tribe with copies provided to the Town. Notwithstanding the aforesaid, in the event that the Tribe shall fail to maintain the Project Sewer Line after receiving proper prior notice from the Department that maintenance is needed, the Department may enter upon Project lands to repair or maintain the Project Sewer Line at the cost of the Tribe. If the Tribe disagrees with the findings of the Department, as to any alleged failure to maintain the Project Sewer Line, it shall have the right to challenge the Department's determination in accordance with this Agreement.

2008 INFRASTRUCTURE CONSTRUCTION AND ENGINEERING. The engineering and design of the Infrastructure including the On-Site Facilities shall be undertaken by MHE as generally shown in the Sewer Study and construction by the Tribe shall be subject to the review, supervision and approval by the Town in accordance with all applicable regulations. The final design and construction of these improvements will be undertaken when all applicable permits and authorizations are issued for the Project. The Tribe agrees to be responsible for the entire cost of construction of the Infrastructure, as well as for the Town's cost of design, engineering, and required approvals of the Infrastructure and the Project Sewer Line as well as any associated legal and permit fees. Subject to dispute resolution procedures of 3003, the Tribe, at its cost and expense, may seek review by an engineering firm, experienced in sewer construction design, of any plans prepared by MHE with respect to over-design of the Infrastructure. Notwithstanding the provisions set forth in this paragraph, if unknown or unanticipated conditions are discovered with respect to the design, placement, or construction of the Infrastructure that create a need to materially alter the design and engineering plans submitted by MHE, the Tribe shall have the right either to pay the Town's reasonable expenses attendant thereto or to abandon the planned connection to the Sewer District. Provided, however, that the Tribe shall still be responsible for all costs up to the Tribe's decision to abandon the planned connection to the Sewer District, as well as any reasonable Town costs associated with the Tribe's decision. If MHE makes a finding that there is a need to materially alter the design and engineering plans of the Infrastructure, they must provide timely notice to the Tribe's engineers in order to resolve the matter in the most efficient and cost effective way.

2009 OWNERSHIP OF INFRASTRUCTURE AND ON-SITE FACILITIES. The Tribe shall transfer ownership of the Infrastructure to the Town in such form as the Town shall direct. Ownership of the On-Site Facilities shall not be transferred to the Town unless the Tribe has obtained a utility easement as provided in paragraph 2006. After ownership is transferred to the Town, operation and maintenance charges shall be paid by the Tribe as part of the payments made under this Agreement.

2010 CONSTRUCTION STANDARDS. All materials, including pipe fittings, backfill materials and construction techniques for the Infrastructure, On-Site Facilities and the

Project Sewer Line shall be completed in accordance with the latest version of the Town's sewer specifications. The Infrastructure shall be sized to handle sanitary sewage needs for possible expansion of the Sewer District or creation of a new sewer district along the route from the Project site to the Sewer District's interceptor sewer as discussed in the Sewer Study. The parties agree that other users shall not be permitted to connect to the On-Site Facilities.

2011 CAPITAL CHARGES.

a. Imposition of Capital Charges. The imposition of charges for capital costs shall not apply to the cost of the construction and installation of the Infrastructure. If there are additions to the Sewer District plant or to the Sewer District system that are a general capital charge on the Sewer District, the Tribe shall bear its share of such cost. Capital charges shall also be imposed for ongoing capital costs payable on a point basis or other method of calculation mutually agreed upon by the parties in writing for current capital costs for the Sewer District Plant.

b. Recovery of capital cost. The Town agrees that a one-time fee shall be levied against each additional commercial user, including residential real estate developers (properties consisting of two or more residential structures), municipal and industrial users that connect to the Infrastructure. This fee shall be reimbursed to the Tribe as a limited recovery of capital costs for the construction of the Infrastructure. The reimbursement provided for herein shall terminate when the total capital cost of the Infrastructure, other than the On-Site Facilities, shall have been recovered in cash or credit by the Tribe. The fee shall be based on the number of points assessed to each additional user by the Town and actual cost of construction and shall be determined by agreement between the Town and the Tribe. The parties agree that the Tribe shall be responsible for its pro-rata share of the cost of the Infrastructure, other than the On-Site Facilities, based on flow or other method of calculation as the Town and Tribe may agree in writing.

Such reimbursement to the Tribe may be accomplished by any other funding means, such as through a new sewer district or other authorized method. If for any reason a court shall rule that this charge is not recoverable, such charge shall not be imposed as herein provided. The payments received by the Sewer District pursuant to this subparagraph shall be a credit against any charge to the Tribe by the Sewer District in the following order:

i. Capacity allocation charge- Paragraph 2002

ii. Connection Charge - Paragraph 2003

iii. Capital Charge-Paragraph 2011

iv. Operation and Maintenance-Paragraph 2012

v. If there shall be any excess of payments in one year over the charges due from the Tribe, the excess shall be carried over to the next year and applied in the same order as provided in this paragraph.

c. Costs included as capital charges. The parties understand that the debt service cost included as capital charges does not include the cost of any additional debt incurred for expansion of the Sewer District or a new sewer district during the term of this Agreement, except for any usual and customary debt incurred to maintain, or repair the Infrastructure and district sewer plant (excluding the collection system other than the Infrastructure) and debt used to maintain or repair or acquire equipment, other than for expansion of the Sewer District, plus the allocation of debt to the Sewer District used for the purchase of vehicles and other equipment used generally for the benefit of the entire Sewer District.

2012 OPERATION AND MAINTENANCE.

a. The Rate: The annual charge to the Tribe by the Sewer District for sewer service during the term of this Agreement shall be the budgeted cost of operation per point based on the point structure used by the Town and Sewer District for in-district users. Specifically, the cost shall be computed by multiplying each point times the per point cost (or other method of calculation mutually agreed upon in writing) established annually by the Town Board by appropriate local law or other legislative act. It is further understood and agreed that the Sewer District shall impose a minimum charge for use of the system which minimum charge shall be the greater of 25% of the average annual charge for the immediately preceding three years or $150,000.00. If there be less than three year's operations, then for each year for which there shall have been no operation, the sum of $150,000 shall be deemed to be the minimum charge for such year to obtain the average for the three years.

b. The Bill: The Town shall bill the Tribe on an annual basis or such lesser period as the parties agree and the Tribe shall pay to the Town within thirty (30) days after presentation thereof. The amount due shall bear interest at the statutory interest rate if the amount billed is not paid within such thirty (30) days.

c. Sub-metering: The Tribe shall be responsible for metering of individual Project Sewer Line users. The Town shall not be responsible for billing individual Project Sewer Line users or collecting the amount due from such individual Project Sewer Line users.

d. Offset and defenses: If a proceeding is brought by the Tribe to challenge the bill for service the sole questions to be determined in such proceeding shall be the accuracy of the bill, the accuracy of the meter and whether the charges are properly calculated. No claims, other than those relating to these issues, may be asserted by the Tribe or interposed by the Town or the Sewer District. Prior to making any such claim and commencing dispute resolution, the Tribe shall pay all

charges which are past due and shall be required to allege in its pleading that such payments have been made.

2013 TOWN SERVICE. The Town shall service or provide service to the Infrastructure and the On-Site Facilities so that same shall be maintained in good working order. The Town shall provide the Tribe with prior notice before entering on tribal property to operate and maintain the On-Site Facilities. It is understood that any capital expenditure made by the Town in connection with the service of the Infrastructure shall be a capital charge bourne by the Tribe and any other user of the Infrastructure ratably with the approximate share of usage of the Infrastructure as provided in paragraph 2011.

2014 NYGA. The Tribe may assign the obligations under this Agreement to the NYGA. If the Tribe does so, it shall send written notice of such assignment to the Supervisor of the Town. If said notice is not provided, the Town may elect to hold the Tribe liable for all payments owed until the date of actual notification to the Supervisor.

2015 PROTECTION OF THE SYSTEM. The Town may take appropriate action under the provisions of Chapter 96 of the Town of Thompson Code to protect the Sewer District System including temporary termination of use of the Infrastructure by the Tribe if the Tribe shall fail to take action to correct a notice of violation within sixty (60) days following notice of such violation. To terminate use the violation must be a immediate threat to the continued good operation of the Infrastructure or Sewer District Plant including the biological process. For other violations, a fine in accordance with the schedule set forth in the Town's code as same may be amended from time to time may be imposed. Nothing set forth in this paragraph shall be deemed to limit the Town's or Sewer District's authority to protect the Sewer District's System. The provisions of Chapter 96, as amended, of the Town of Thompson Code shall be applicable to the Project except that sections 96-3, 96-5, 96-6, 96-7, 96–8, 96-9, 96-10, 96-11, 96-12, 96-13, 96-14, 96-15, 96-45.1B, 96-46 A, C and 96-49 of such Code shall not apply.

2016 POWERS OF THE TOWN. In addition to any power set forth in this Agreement or in any statute, rule or regulation, the Town shall have the following powers:

a. To charge interest at the statutory rate on any charge that is not paid within the 30 days following the date a bill is rendered.

b. To charge a late payment fee on any bill past due, such late payment fee to be set in accordance with the Town's code.

c. To impose a re-connection fee in the event that service is terminated, such amount to be determined by the Town Board not to exceed $1,000.00 plus reasonable expenses incurred by the Town.

d. To terminate use if after 60 days written notice, all outstanding charges for service, interest, fines, penalties and late charges shall be unpaid. It being understood, that termination of service shall be accomplished by closing main valves or inserting a sewer line plug and shall not destroy any portion of the Infrastructure. The Tribe shall not take any action to open a closed valve or remove a sewer line plug to restore service except with the Town's written approval and consent.

e. To impose fines pursuant to Town Code 96-34 for tampering, damaging, destroying or otherwise adversely affecting the operation of the On-Site Facilities, the Infrastructure, or the Sewer District's Plant.

f. To issue a cease and desist order directing the Tribe to terminate any action that it has undertaken which the Town determines, after due process, is in violation of the regulations affecting the operation of the Sewer District plant.

2017 ABANDONMENT OF FACILITY. If the Tribe shall abandon the Project or shall fail to

use the Infrastructure, ownership of the Infrastructure shall vest in the Town 30 days following the giving of notice of such abandonment by the Tribe to the Town. For the purposes of this paragraph, abandonment shall be the intentional withdrawal from the Project or use of the Infrastructure by the Tribe. In addition, all of the Tribe's payment obligations under this Agreement, except the continuing obligation regarding payment of engineering costs incurred pursuant to Paragraph 2007 and charges and expenses incurred by the Tribe under this Agreement prior to abandonment, shall terminate if there is an abandonment by the Tribe.

3000 GENERAL CONTRACT PROVISIONS

3001 INDEMNIFICATION: The parties shall be liable to and indemnify each other as follows:

a. Negligence. Each party shall indemnify the other from damages that result from their respective negligence.

b. Claims of contractors, sub-contractors, materialmen and laborers. The Tribe shall indemnify and hold the Town free and harmless from any and all claims of whatsoever kind and nature arising from employment of contractors, sub-contractors, materialmen and laborers working on the construction of the Infrastructure. Before the acceptance of the Infrastructure, the Tribe shall deliver to the Town waivers of all liens and acknowledgments of payment of the total amount due such person. The claim of any party refusing to sign such waiver shall be fully bonded by the Tribe for the amount of such claim.

c. Damages: In the event that the Tribe shall cause any damage to the Project Sewer Line which may cause damage to the Infrastructure or any part thereof and to the other facilities of the Sewer District, including the biological process, the Tribe shall undertake all steps reasonably necessary to rectify or otherwise repair the damage, if possible, and if not, to timely terminate the use of the Project Sewer Line and the On-Site Facilities. Nothing set forth herein shall limit the Town's

authority to undertake the necessary steps to protect the Sewer District System or terminate improper use by Tribe as provided in this Agreement. This paragraph shall not be deemed to limit liability of any user of the Sewer District System to the Town.

3002 LIMITED WAIVER OF SOVEREIGN IMMUNITY.

a. By the Town. The Town hereby waives its immunity for the limited purpose of enforcement of this Agreement, from uncontested suit to permit arbitration of disputes as provided herein and to permit the state courts to compel such arbitration and to enforce the terms of any award or order resulting from such arbitration.

b. By the Tribe – Non-Monetary Relief. The Tribe hereby waives its sovereign immunity, with respect to injunctive non-monetary relief for the limited purpose of enforcement of this Agreement, from unconsented suit to permit arbitration of disputes as provided herein and to permit the state courts to compel such arbitration and to enforce the terms of any award or order resulting from such arbitration.

c. By the Tribe – Monetary Relief. The Tribe hereby waives its sovereign immunity to permit arbitration of disputes as provided herein and with respect to monetary relief for the limited purpose of enforcement of this Agreement in relation to payments, fees and fines addressed herein. Such relief is limited to the revenue derived by the Tribe from operation of the Project. The Tribe further waives its sovereign immunity to permit the state courts to compel such arbitration, and to enforce the terms of any award or order resulting from such arbitration.

3003 DISPUTE RESOLUTION.

a. The parties agree that any suit commenced as provided herein shall be brought in

the Supreme Court of New York for Sullivan County (and appeals therefrom shall be brought in the New York State Appellate Courts) or, if that Court has no jurisdiction, then in any court of competent jurisdiction including, but not limited to, the Tribe's Gaming Disputes Court or Tribal Court.

b. It is acknowledged by the parties that a quick and efficient resolution of any dispute, claim or controversy arising under or relating to this Agreement, the breach, termination, or validity of this Agreement, or the dealings between the parties, or with respect to any claim arising by virtue of any representations made by any party (collectively, "Dispute") is critical to the implementation of this Agreement. In order to effectuate such intent, the parties do hereby establish this dispute resolution procedure. All Disputes shall be subject to this provision. No time bar defenses shall be available based upon the passage of time during any negotiation called for by this provision.

c. Either party shall give the other party written notice of any Disputes ("Dispute Notice") which Dispute Notice shall set forth the amount of loss, damage and cost of expense claimed, if any.

d. Within ten (10) days of the Dispute Notice the parties shall meet to negotiate in good faith to resolve the Dispute. Separately and independently, either party may seek injunctive relief from the New York State Supreme Court, Sullivan County, to maintain the status quo during the following dispute resolution process, upon or after service of a Dispute Notice by one party upon the other.

e. In the event the Dispute is unresolved within thirty (30) days of the Dispute Notice by good faith negotiations, the Dispute shall be arbitrated upon the filing by either party of a written demand, with notice to the other party, to and under the rules of a provider of dispute resolution services ("Arbitration Service") acceptable to the parties (to the extent such rules are not inconsistent as provided herein) in White Plains, New York before a single arbitrator under the then

current Commercial Arbitration Rules of the American Arbitration Association. Within ten (10) days after receipt of written notice of the Dispute being brought to the arbitrator, each party shall submit to the arbitrator a best and final offer with respect to each issue submitted to the arbitrator and an accompanying statement of position containing supporting facts and data. Upon such Dispute being submitted to the arbitrator for resolution, the arbitrator shall assume exclusive jurisdiction over the Dispute, and shall utilize such consultants or experts as he shall deem appropriate under the circumstances, to assist in the resolution of the dispute and will be required to make a final binding determination, not subject to appeal, within forty-five (45) days of the date of submission.

f. For each issue decided by the arbitrator, the arbitrator shall award the expenses of the proceeding to the prevailing party with respect to such issue. The arbitrator in arriving at his decision, shall consider the pertinent facts and circumstances as presented in evidence and be guided by the terms and provisions of this Agreement and applicable law, and shall apply the terms of this Agreement without adding to, modifying or changing the terms in any respect, and shall apply the laws of the State of New York to the extent such application is not inconsistent with this Agreement.

g. The arbitration shall be governed by Article 75 of the Civil Practice Law and Rules of the State of New York, to the extent not inconsistent with this Agreement. Any arbitration award may be entered as a judgment in the courts of the State of New York. A printed transcript of any such arbitration proceeding shall be kept and each of the parties shall have the right to request a copy of such transcript, at its sole cost.

h. The parties agree that, in addition to monetary relief, the arbitrator may make an award of injunctive relief and the parties further agree that the arbitrator is empowered to enforce any of the provisions of this Agreement.

i. The arbitrator is not empowered to award compensatory damages in excess of the monetary relief agreed to herein. Each party hereby irrevocably waives any right to recover punitive damages with respect to any Dispute resolved by arbitration. The parties further agree that the arbitrator and/or the Court shall have no authority nor jurisdiction to order execution against any assets or revenues of the Tribe except those set forth in Paragraph 3002 (c) of this Agreement. The arbitrator is not empowered to award damages against the Tribe except to the extent of revenue derived from operation of the Project.

3004 ADDITIONAL AGREEMENTS. The parties understand that this Agreement covers many issues generally and that there may be ambiguities and questions that may require additional more detailed agreements. It is agreed that construction agreements and agreements for engineering services in connection with construction will be required. The parties agree that they shall negotiate in good faith to achieve the execution of such agreements.

3005 OBLIGATIONS INDEPENDENT. The parties agree that neither party shall have the right to offset any other claim that one party may have against the other with respect to a claims arising under or in connection with this agreement. The rights of each party are independent.

3006 JUDICIAL REVIEW AND SURVIVAL OF CONTRACT. In the event that any term of this Agreement shall be construed to be illegal or unenforceable at law or in equity, the same shall be deemed to be void and of no force or effect to the extent necessary to bring such term within the provisions of any applicable law or laws, and such term as so modified and the balance of the terms of this Agreement shall be fully enforceable.

3007 NOTICE. In a case where there is imminent danger to the continued good operation of Sewer District System requiring immediate action by the Town or the Sewer District, notice may be given to the Tribe by the Town after the Town shall have acted but the Town shall make every effort to advise the Tribe of the action taken within 24 hours.

Such notice of an imminent danger may be given orally, by fax, by telephone or in writing. In any provision requiring notice to be sent by one party to the other, such notice may be made by personal delivery, mail or overnight carrier. Notice to the Tribe shall be provided to the Tribal President and the Tribal Attorney at the address set forth in this Agreement or such other address as the parties shall provide in writing to the other party. Notice to the Town shall be provided to the Town Supervisor at the address set forth in the Agreement or such other address as the parties shall provide in writing to the other party. Notice given personally or by courier shall be deemed given on actual receipt at the address of such delivery and mailed notices shall be deemed given as of 10AM of the third business day after mailing.

3008 PARTIES BOUND. This Agreement shall bind the parties hereto their successors and assigns.

3009 INTERPRETATION. Whenever the context shall require, the singular shall include the plural, and the plural shall include the singular, and words of any gender shall be deemed to include words of any gender.

3010 ENTIRE AGREEMENT. The terms of this Agreement constitute the entire agreement between the parties and shall supercede all prior understandings and agreements between the parties with regard to the sewer rates. This agreement may not be modified, changed or supplemented, nor may any obligation hereunder be waived, except by written instrument signed by the party to be charged.

The parties have executed this Agreement.

TOWN OF THOMPSON

By: _____

Anthony P. Cellini, Supervisor

STOCKBRIDGE-MUNSEE COMMUNITY

BY: _____

TOWN OF THOMPSON for and on behalf of
KIAMESHA LAKE SEWER DISTRICT

BY _____
Anthony P. Cellini, Supervisor

Appendix D-4

Wastewater Services Agreement Extension

Stockbridge-Munsee Community

BAND OF MOHICAN INDIANS

LEGAL OFFICE

August 25, 2010

Marilee J. Calhoun
Town Clerk/Registrar
Town of Thompson
4052 Route 42
Monticello, NY 12701-3221

RE: Extension of Sewer Services Agreement with Stockbridge-Munsee Community

Dear Ms. Calhoun:

Enclosed please find 2 fully executed originals of the First Amendment to the Sewer Services Agreement between the Town of Thompson, Kiamesha Lake Sewer District and Stockbridge-Munsee Community. The Stockbridge-Munsee Tribal Council had approved the document in July 2010 when it was transmitted to the Town for approval.

We appreciate the Town's cooperation with the Tribe during this amendment process.

Sincerely,

Bridget Swanke
Staff Attorney

Cc: Jacob Billig (electronic copy)
Michael Mednick (electronic copy)

N8476 MOH HE CON NUCK ROAD • PO BOX 70 • BOWLER, WI 54416 • (715) 793-4392 • FAX: (715) 793-4856

FIRST AMENDMENT TO
SEWER SERVICE AGREEMENT

THIS AMENDMENT is attached to and becomes part of the Sewer Service Agreement dated February 5, 2003 by and between the Town of Thompson ("Town") and its Kiamesha Lake Sewer District and the Stockbridge-Munsee Community ("Tribe").

WHEREAS, the parties entered into the Sewer Services Agreement wherein the Town agreed to provide sewer service to the Tribe through the allocation of excess capacity in the Kiamesha Lake Sewer District; and

WHEREAS, under Section 2002 of the Sewer Services Agreement, the parties agreed that if the Tribe did not use the allocated capacity within seven (7) years from the effective date of the Agreement, the allocation would expire unless extended by mutual agreement of the parties in writing; and

WHEREAS, the Sewer Services Agreement did not become effective until Home Rule Legislation was adopted on February 6, 2004;

NOW THEREFORE, the parties agree as follows:

1. That Section 2002 be amended to provide that the capacity allocation granted to the Tribe in the Kiamesha Lake Sewer District shall not expire until December 2014, unless extended by mutual agreement of the parties in writing.

2. That all other terms and conditions shall remain in place.

INTENDING TO BE LEGALLY BOUND, the parties hereto execute this Amendment.

TOWN OF THOMPSON

BY: _____

DATE: August 03, 2010

STOCKBRIDGE-MUNSEE COMMUNITY

BY: _____

DATE: August 25, 2010

TOWN OF THOMPSON for and on behalf of
KIAMESHA LAKE SEWER DISTRICT

BY: _____, Supt.

DATE: August 10, 2010

Appendix E

Farmland Conversion Impact Rating Form

TETRA TECH

MEMORANDUM

To: Amy Green

Fr: Ken Deshais

Re: **Farmland Conversion Impact Rating**
Stockbriged-Munsee Casino
Sullivan County, NY

Dt: August 19, 2010

This Technical Memo discusses the results of a Farmland Conversion Impact Rating analysis which was performed for the Stockbrigde-Munsee Casino project located in Sullivan County, New York. The analysis was performed in accordance with the rules and regulations (7 CFR 658) developed for the Farmland Protection Policy Act (the Act). The Act is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. The assessment includes two numerical scoring elements, one provided by the Natural Resource Conservation Service (NRCS) and one provided by the Federal Agency which is undertaking the action. The NRCS element, "Relative Value of Farmland to be converted", has a maximum value of 100. The Federal Agency which is undertaking the action element has a maximum value of 160. The score developed by the Federal Agency which is undertaking the action is based on an analysis of criteria that has been developed by the Secretary of Agriculture and other cooperating federal agencies. If a site's total score is less than 160, further consideration for protection need not be given. Sites receiving a score of 160 or greater shall be given increasingly higher levels of consideration for protection.

The analysis of the criteria for the Federal Agency which is undertaking the action resulted in a score of 55. Given the fact that the NRCS's Relative Value of Farmland to be converted has a maximum value of 100, the total score of the impact rating will not equal or exceed the threshold value of 160.

This analysis did not include an assessment of any potential farmland impacts associated with highway improvements that may be required for implementation of the project. However, it is anticipated that any of the proposed highway improvements will not result in any significant direct or indirect conversion of farmland. Figure 1 depicts the areas of prime farmland, farmland of statewide importance, and farmland of unique importance on the site. Figure 2 depicts the proposed impacts to farmland soils associated with the project. Figure 3 depicts the land use in the vicinity of the site.

One Grant Street
Framingham, MA 01701
Tel 508.903.2000 Fax 508.903.2001

The following information sources were used in the analysis:

1. Natural Resource Conservation Service. 2010. *Soil Survey of Sullivan County, New York*. In cooperation with Cornell University Agricultural Experiment Station.

2. The Site Plan for the proposed project preferred alternative phase I and phase II.
3. Business Point Data – Google Earth

4. ESRI 2008 Street Maps

5. NRCS survey database Version 8 (2/5/10) prime farmland soils.

The following assumptions for direct and indirect conversion are included in the analysis:

1. Direct conversion is represented by the grading limits of the proposed buildings, storm water management infrastructure, paved areas, and potential wetland mitigation areas.

The following criteria and presumptions are included in the analysis relative to the twelve factors:

Factor 1: 73 percent non-urban land within 1 mile of the property.

Factor 2: 62 percent of bordering land is non-urban.

Factor 3: Timber harvesting has not occurred during 5 of the past 10 years no other farming has occurred on site.

Factor 4: There is no deferred taxation associated with the property. The New York "right to farm law" does not require the property to be farmed.

Factor 5: The site is approximately 6,000 feet from an urban built-up area.

Factor 6: Power and road infrastructure are adjacent to the site, police is approximately 2.6 miles and fire services are approximately 1.3 mile from the site, water is approximately 3 miles from the site, sewer is approximately 4 miles from the site, and schools are approximately 2.4 miles from the site.

Factor 7: Farmland impact equals 21 acres excluding approximately 12 acres of previously degraded farmland as a result of historic mining activities. Average farm size for Sullivan County equals 156 acres.

Factor 8: No indirect conversion will occur because the Tribe would retain access to the remaining farmland soils.

Factor 9: Presumes all required services are available.

Factor 10: No on farm investments occur at the site.

Factor 11: No significant reduction in demand for support systems.

Factor 12: Project is tolerable of existing agricultural use of surrounding farmland.

P:\3478\127-3478-10001\DOCS\REPORTS\SOIL ASSESSMENT\FARMLAND IMPACT MEMO (0).DOC

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request
Name Of Project Stocbridge-Munsee Casino	Federal Agency Involved Bureau of Indian Affairs
Proposed Land Use Casino	County And State Sullivan County, NY
PART II *(To be completed by NRCS)*	Date Request Received By NRCS

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Yes ☐ No ☐	Acres Irrigated	Average Farm Size
Major Crop*(s)*	Farmable Land In Govt. Jurisdiction Acres: %	Amount Of Farmland As Defined in FPPA Acres: %	
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	21.0			
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	21.0	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	0	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use	15	11			
2. Perimeter In Nonurban Use	10	6			
3. Percent Of Site Being Farmed	20	0			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area	15	8			
6. Distance To Urban Support Services	15	10			
7. Size Of Present Farm Unit Compared To Average	10	10			
8. Creation Of Nonfarmable Farmland	10	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	0			
11. Effects Of Conversion On Farm Support Services	10	0			
12. Compatibility With Existing Agricultural Use	10	5			
TOTAL SITE ASSESSMENT POINTS	160	55	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	55	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	55	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

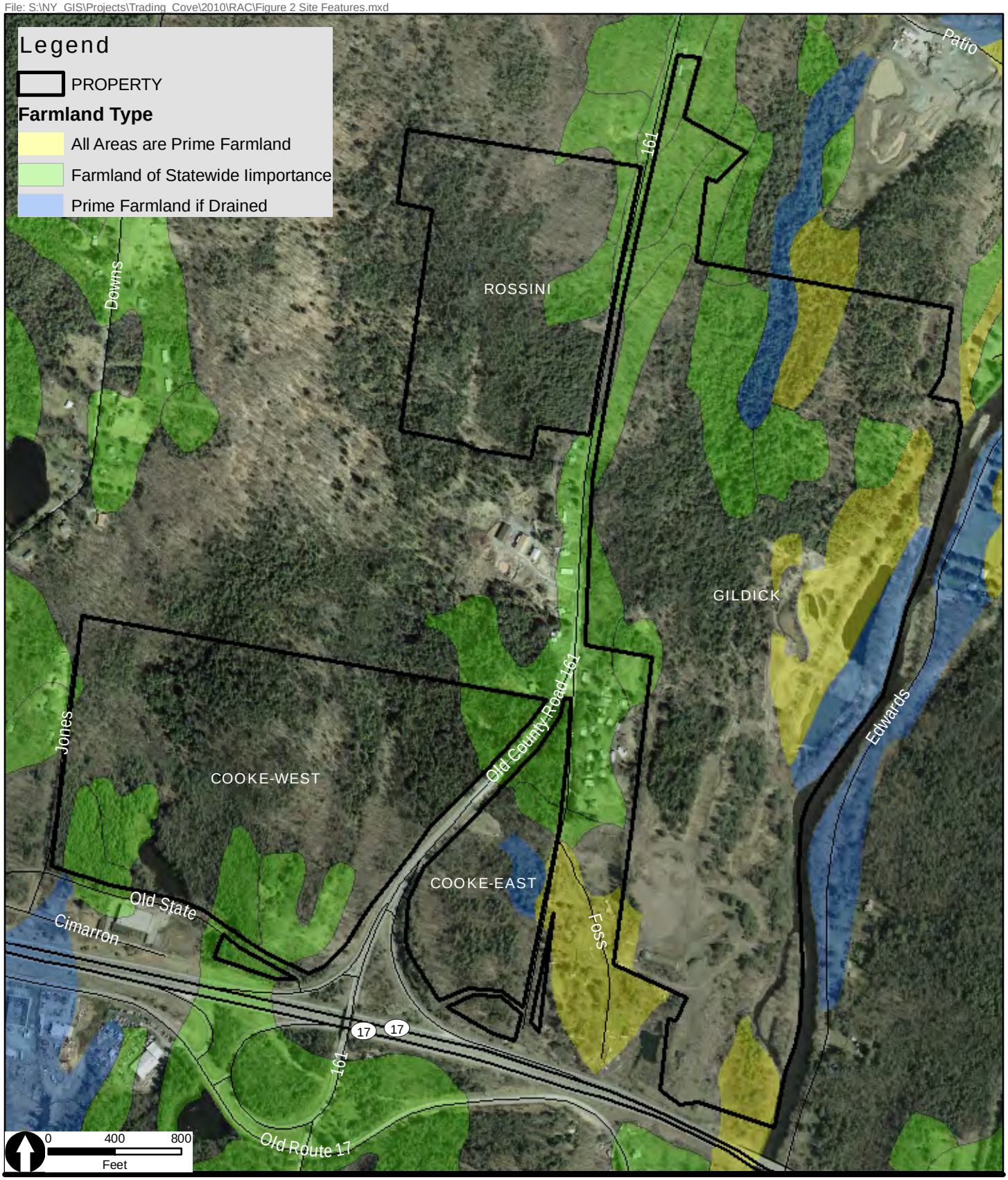
(See Instructions on reverse side)

This form was electronically produced by National Production Services Staff

Clear Form

Form AD-1006 (10-83)

File: S:\NY_GIS\Projects\Trading_Cove\2010\RAC\Figure 2 Site Features.mxd



Source:
Airphoto-New York State
GIS 2004 Airphoto

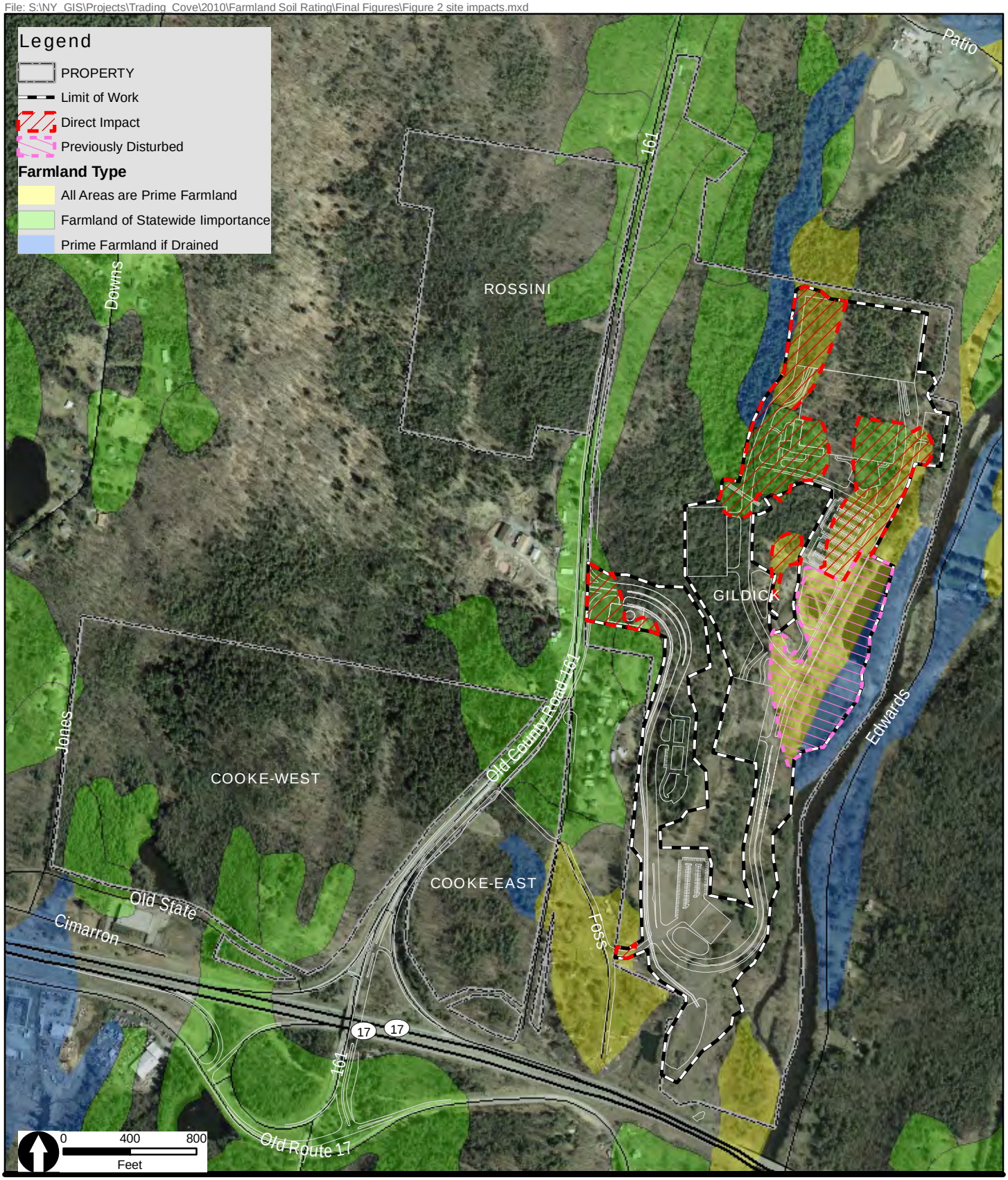
Note:
Parcel Information from
Town of Thompson
Assessors Map Sec. 24

Stockbridge-Munsee Casino
Thompson, New York

Farmland Soils

Figure 1

File: S:\NY_GIS\Projects\Trading_Cove\2010\Farmland Soil Rating\Final Figures\Figure 2 site impacts.mxd



Source:
Airphoto-New York State
GIS 2004 Airphoto

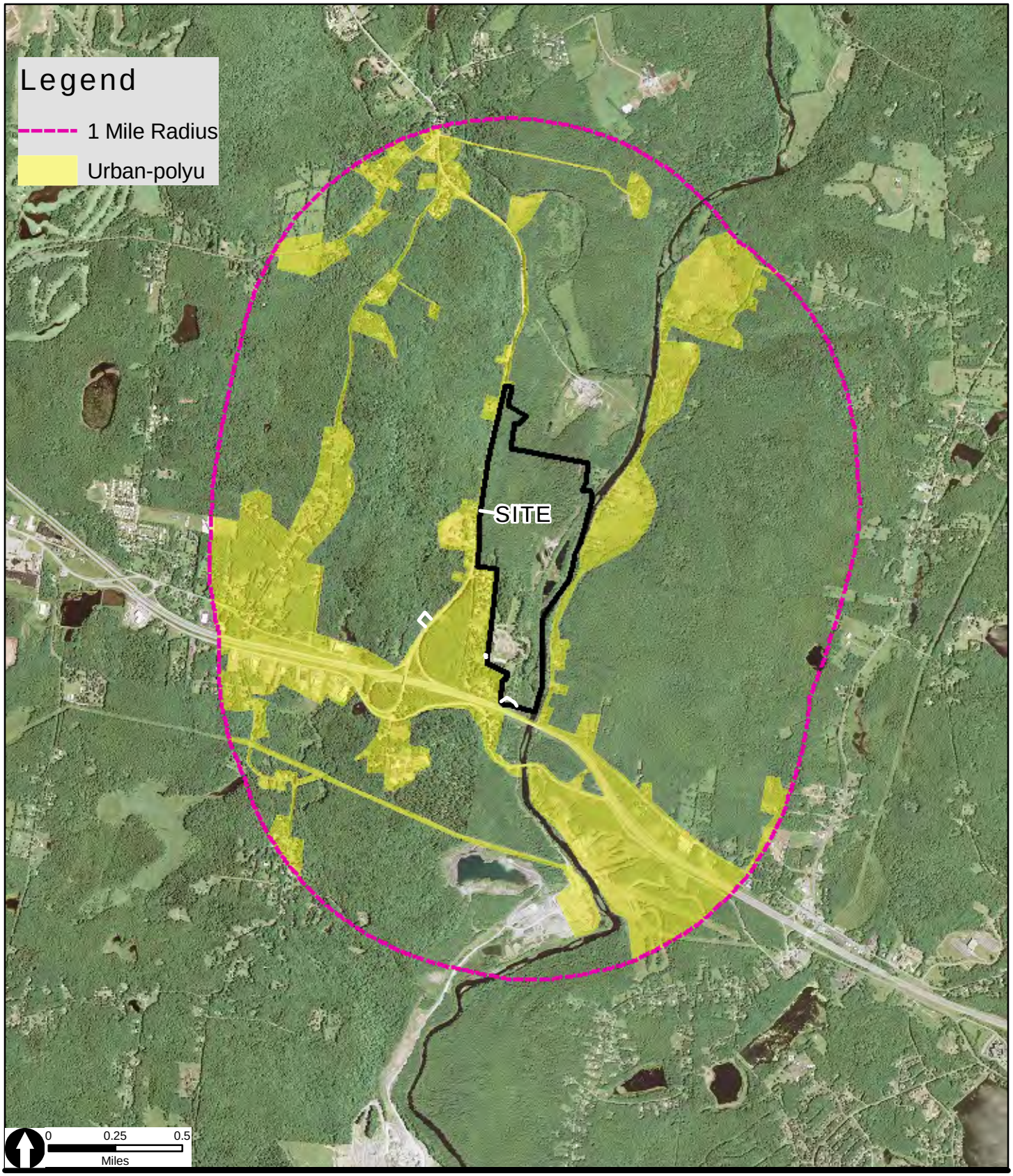
Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Farmland Soil Impacts

Figure 2

File: S:\NY_GIS\Projects\Trading_Cove\2010\Farmland Soil Rating\Final Figures\Figure 3 ULanduse in Vicinity Urban-Non-Urban.mxd



Source:
Airphoto-New York State
GIS 2004 Airphoto

Note:
Parcel Information from
Town of Thompson
Assessors Map Sec. 24

Stockbridge-Munsee Casino
Thompson, New York

Landuse in Vicinity
Urban/Non-Urban

Figure 3

Appendix F

Correspondence

Appendix F
Correspondence

F-1	NYSDEC Mined Land Inspection Report and Reclamation Approval
F-2	U.S. Fish and Wildlife Service Federally Listed Species Information for Trust Lands (2001)
F-3	NY Natural Heritage Program State Listed Species Information for Trust Lands
F-4	NYSDEC Division of Fish, Wildlife and Marine Resources Fish Species
F-5	NYSDEC Site Remediation No Further Action Letter
F-6	NY Office of Parks, Recreation and Historic Preservation Determination of No Effect for Trust Lands (2005)
F-7	Stockbridge-Munsee Cultural Preservation Office Letter
F-8	NY State Electric and Gas Corporation Commitment Letter
F-9	U.S. Fish and Wildlife Service Federally Listed Species Information for Utility Corridors
F-10	NY Natural Heritage Program State Listed Species Information for Utility Corridors
F-11	NY Office of Parks, Recreation and Historic Preservation Letter for Utility Corridors
F-12	Verizon Commitment Letter
F-13	U.S. Fish and Wildlife Service Federally Listed Species Information for Trust Lands (2005)
F-14	U.S. Fish and Wildlife Service Federally Listed Species Information for Project Area (2012)
F-15	NY Office of Parks, Recreation and Historic Preservation Determination of No Effect for Trust Lands (2012)

REGION 3

85-1543 (9/86)—28b

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

MINED LAND INSPECTION REPORT

YES	NO	N/A	
☑	☐	☐	1. Mining permit posted prominently.
☑	☐	☐	2. Mining permit is current.
☑	☐	☐	3. Area mined is within permitted area.
☑	☐	☐	4. Required property line setbacks are maintained.
☑	☐	☐	5. Mining method complies with approved plan.
☑	☐	☐	6. All refuse is properly removed from site.
☐	☐	☑	7. Overburden and/or spoil is properly stored or disposed.
☐	☐	☑	8. Adequate quantities of topsoil have been properly stockpiled for reclamation use.
☑	☐	☐	9. All haulageways are properly located and maintained.
☐	☐	☑	10. Dust control measures are adequate at time of inspection.
☐	☐	☑	11. Noise control measures are adequate at time of inspection.
☑	☐	☐	12. Drainage and water control features are maintained and effectively control erosion.
☑	☐	☐	13. Screening is provided where required.
☑	☐	☐	14. Screening is adequate and maintained.
☑	☐	☐	15. The roadway at the entrance to the mine is free of materials from truck tires or spilled from trucks.
☑	☐	☐	16. Mining operation is in compliance with special permit conditions.
☑	☐	☐	17. Operator or on-site supervisor is familiar with approved mined land use plans and is operating consistant with these plans.
☐	☑	☐	18. Mine site was in operation on day of inspection.

PLEASE NOTE:
A "no" in any box other than 18 indicates that there were, on the day of this inspection, certain deficiencies in the operation of your mine which constitute violation of your permit. Corrective measures must be undertaken immediately on any deficiencies noted. Contact the Department if you have any questions about this inspection.

FACILITY COPY

FACILITY NAME: Alders Auto Wrecking + Parts

MINED LAND NUMBER: 3053-30-0324

LOCATION: Brocseville

PERMIT NUMBER:

PERSON(S) INTERVIEWED AND TITLES

None

SITE SKETCH/COMMENTS (additional sheets attached ☐ Yes ☐ No)

Site reclamation is completed and Approved

- Bond to be Released

DATE: 6/2/03

TIME: 200

WEATHER: Rainy

INSPECTOR'S SIGNATURE AND TITLE: Robert Marand mkt Specialist

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 LUKER ROAD
CORTLAND, NY 13045

February 12, 2001

Mr. Edward T. Hutchinson
Project Environmental Scientist
Rizzo Associates
One Grant Street
Framingham, MA 01701-9005

Dear Mr. Hutchinson:

This responds to your letter of January 5, 2001, requesting information on the presence of Federally listed or proposed endangered or threatened species in the vicinity of the proposed project area in the Town of Thompson, Sullivan County, New York.

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. In addition, no habitat in the project impact area is currently designated or proposed "critical habitat" in accordance with provisions of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act is required with the U.S. Fish and Wildlife Service (Service). Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered.

The above comments pertaining to endangered species under our jurisdiction are provided pursuant to the Endangered Species Act. This response does not preclude additional Service comments under the Fish and Wildlife Coordination Act or other legislation.

The swollen wedge mussel (*Alasmidonta varicosa*) is found in the Neversink River in the vicinity of the proposed project. This species is considered a species of concern (formerly known as Category 2 Candidate species) by the Service and its status is being monitored throughout much of its range. Species of concern do not receive substantive or procedural protection under the Endangered Species Act; however, the Service does encourage Federal agencies and other appropriate parties to consider these species in the project planning process.

The Service recommends, therefore, that if the wetted area of the Neversink River or feeder streams will be effected, they be surveyed by a qualified person to determine the presence of the swollen wedge mussel. The Service further recommends that the project's environmental documents include an evaluation of the potential direct, indirect, and cumulative effects of the proposed activities on this species, and include appropriate measures, as necessary, to protect this species and its habitats.

F-2(1)

The swollen wedge mussel is also a species of concern to New York State. Should the project proceed, detailed project plans, and any evaluations, including surveys, their timing, and results, should be coordinated with both this office and with the following:

Dr. Kathryn Schneider
New York State Department of
Environmental Conservation
New York Natural Heritage Program
700 Troy-Schenectady Road
Latham, NY 12110-2400
(518) 783-3932

Mr. Peter Nye
New York State Department of
Environmental Conservation
Endangered Species Unit
Wildlife Resources Center
Delmar, NY 12045-9767
(518) 439-7635

For additional information on fish and wildlife resources or State-listed species, we suggest you contact:

New York State Department
of Environmental Conservation
Region 3
21 South Putt Corners Road
New Paltz, NY 12561-1676
(845) 256-3000

New York State Department
of Environmental Conservation
Wildlife Resources Center - Information Services
New York Natural Heritage Program
700 Troy-Schenectady Road
Latham, NY 12110-2400
(518) 783-3932

National Wetlands Inventory (NWI) maps may or may not be available for the project area. However, while the NWI maps are reasonably accurate, they should not be used in lieu of field surveys for determining the presence of wetlands or delineating wetland boundaries for Federal regulatory purposes. Copies of specific NWI maps can be obtained from:

Cornell Institute for Resource Information Systems
302 Rice Hall
Cornell University
Ithaca, NY 14853
(607) 255-4864

Work in certain waters and wetlands of the United States may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act, the Service may concur, with or without stipulations, or recommend denial of the permit depending upon the potential adverse impacts on fish and wildlife resources associated with project implementation. The need for a Corps permit may be determined by contacting Mr. Joseph Seebode, Chief, Regulatory Branch, U.S. Army Corps of Engineers, 26 Federal Plaza, New York, NY 10278 (telephone: [212] 264-3996).

F-2(2)

If you require additional information please contact Michael Stoll at (607) 753-9334.

Sincerely,

Mark W. Clough

Acting For

David A. Stilwell
Field Supervisor

cc: NYSDEC, New Paltz, NY (Environmental Permits)
NYSDEC, Latham, NY (Attn: Dr. K. Schneider)
NYSDEC, Delmar, NY (Attn: P. Nye)
COE, New York, NY

A-2 (3)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

August 5, 2010

Amy M. Green
Amy Green Environmental Consulting
26 Captain Brown's Lane
Acton, MA 01720

Dear Ms. Green:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment of the proposed Stockbridge-Munsee Casino Facility, site as indicated on the map you provided, located along Old County Highway (Rte. 161), Town of Thompson, Sullivan County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

The enclosed report may be included in documents that will be available to the public. However, any enclosed maps displaying locations of rare species are considered sensitive information, and are intended only for the internal use of the recipient; they should not be included in any document that will be made available to the public, without permission from the New York Natural Heritage Program.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g. regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

Tara Salerno

Tara Salerno, Information Services
New York Natural Heritage Program

841

Enc.
cc: Reg. 3
Peter Nye, Endangered Species Unit, Albany
Lisa Holst, Bureau of Fisheries

40 years of stewardship 1970-2010

F-3(1)

Natural Heritage Report on Rare Species and Ecological Communities

NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,
Albany, NY 12233-4757
(518) 402-8935

~The information in this report includes only records entered into the NY Natural Heritage databases as of the date of the report. This report is not a definitive statement on the presence or absence of all rare species or significant natural communities at or in the vicinity of this site.
~Refer to the User's Guide for explanations of codes, ranks and fields.
~Location maps for certain species and communities may not be provided 1) if the species is vulnerable to disturbance, 2) if the location and/or extent is not precisely known, 3) if the location and/or extent is too large to display, and/or 4) if the animal is listed as Endangered or Threatened by New York State.

Natural Heritage Report on Rare Species and Ecological Communities

BIRDS

Haliaeetus leucocephalus

				Office Use
Bald Eagle	NY Legal Status: Threatened	NYS Rank:	S2S3B,S2N - Imperiled	5298
Nonbreeding	Federal Listing:	Global Rank:	G5 - Secure	ESU
	Last Report: **	EO Rank: **		

County: Orange, Sullivan
Town: Deerpark, Fallsburg, Forestburgh, Neversink, Port Jervis - City, Thompson
Location: At, or in the vicinity of, the project site.
General Quality and Habitat: **For information on the population at this location and management considerations, please contact the NYS DEC Regional Wildlife Manager for the Region where the project is located.

FRESHWATER MUSSELS

Alasmidonta varicosa

				Office Use
Brook Floater	NY Legal Status: Threatened	NYS Rank:	S1 - Critically imperiled	6255
	Federal Listing:	Global Rank:	G3 - Vulnerable	ESU
	Last Report: **	EO Rank: **		

County: Orange, Sullivan
Town: Deerpark, Fallsburg, Forestburgh, Port Jervis - City, Thompson
Location: At, or in the vicinity of, the project site.
General Quality and Habitat: **For information on the population at this location and management considerations, please contact the NYS DEC Regional Wildlife Manager for the Region where the project is located.

2 Records Processed

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at http://www.natureserve.org/explorer, from NYSDEC at http://www.dec.ny.gov/animals/7494.html (for animals), and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

More detailed information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org. For descriptions of all community types, go to http://www.dec.ny.gov/animals/29384.html and click on Draft Ecological Communities of New York State.

F-3 (2)

New York State Department of Environmental Conservation
Division of Fish, Wildlife and Marine Resources, Region 3
21 South Putt Corners Road, New Paltz, New York 12561-1696
Phone: (845) 256-3003 • FAX: (845) 255-4659
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

Mr. Bernie Raftery
Rizzo Associates
1 Grant St.
Framingham, MA 01701

September 10, 2001

Dear Mr. Raftery:

As requested, the following are a list of fish species which have been documented in historic Department surveys from the Neversink River (D1) in the vicinity of Bridgeville, NY:

Brown trout *Salmo trutta*
Brook trout *Salvelinus fontinalis*
Smallmouth bass *Micropterus dolomieu*
Redbreast sunfish *Lepomis auritus*
Pumpkinseed *L. gibbosus*
Rock bass *Ambloplites rupestris*
Black crappie *Pomoxis nigromaculatus*
Johnny darter *Etheostoma nigrum*
Tesselated darter *Etheostoma olmstedi*
Shield darter *Percina peltata*
Margined madtom *Noturus insignis*
Brown bullhead *Ameirus nebulosis*
Chain pickerel *Esox niger*
Grass pickerel *Esox americana vermiculatus*
Blacknose dace *Rhinichthys atratulus*
Longnose dace *R. cataractae*
Golden shiner *Notemogonus crysoleucas*
Common shiner *Luxilus cornutus*
Spottail shiner *Notropis hudsonius*
Cutlips minnow *Exoglossum maxillingua*
Fallfish *Semotilus corporalis*
Creek chub *S. atromaculatus*
Creek chubsucker *Erimyzon oblongus*
White sucker *Catostomus commersoni*
American eel *Anguilla rostrata*

Please don't hesitate to contact me if you have any more questions.

Sincerely yours,

Bob Angyal

Robert K. Angyal,
Senior Aquatic Biologist

F-4

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 3
21 South Putt Corners Road, New Paltz, New York 12561-1696
Phone: (845) 256-3112 • **FAX:** (845) 255-2987
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

November 20, 2002

David Brassaro, P.E.
Rizzo Associates
150 Trumbull Street - 4th Floor
Hartford CT 06103

RE: Aldor Wrecking Site, Thompson, NY
Site Remediation Report, Plot 24 Block 1, Lots 26.1, 26.2, and 29.5

Dear Mr. Brassaro:

Upon review of the above report dated November 12, 2002, the Department is requiring no further action at this site at this time, as related to petroleum contamination. If during the construction and excavation activities on site determine other problems, they will be addressed then.

If I can be of further assistance, please do not hesitate to contact me.

Very truly yours,

John K. O'Mara, P.E.
Environmental Engineer II
Region 3

JKO:th
cc: D. Wehrfritz
O'Mara/File

F-5

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189
518-237-8643

Bernadette Castro
Commissioner

January 28, 2003

Bridget Swanke
Stockbridge-Munsee Community
Legal Office
N8476 Moh He Con Nuck Road
P.O. Box 70
Bowler, Wisconsin 54416

Dear Ms. Swanke:

Re: BIA
Stockbridge-Munsee Casino Project
(Bridgewater)
Thompson, Sullivan County
02PR04242

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). The SHPO has reviewed the *revised* Archaeological Field Investigation Report for the Stockbridge-Munsee Casino Project in accordance with Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations.

Based upon this review, it is our understanding that all project construction will be taking place solely on the parcel identified as the Gildick Parcel. Therefore, it is the SHPO's opinion that this project will have No Effect upon cultural resources in or eligible for inclusion in the National Register of Historic Places.

Cultural resources have been identified on other parcels included in the study. In the future, additional consultation with our office would be warranted if development is proposed for these other parcels.

When responding please be sure to refer to the SHPO project review (PR) number noted above. If you have any questions, please feel free to call me at (518) 237-8643 ext. 3255.

Sincerely,

Robert D Kuhn

Assistant Director
Field Services Bureau

RDK:bsa

cc: D. Cox

An Equal Opportunity/Affirmative Action Agency
printed on recycled paper

F-6

Stockbridge-Munsee Cultural Preservation Office

Sherry Fingens-Preservation Officer
N8476 MohHeConNuck Road
Bowler, WI 54416

December 2, 2002

Bridget Swanke
Staff Attorney
P.O. Box 70
Bowler, WI 54416

Dear Bridget:

This letter is in response to the request you made of the Cultural Preservation Office for comment on Phase 1A sensitivity assessment and Phase 1B Archaeological Field Investigation for the Stockbridge-Munsee Casino Project, in the town of Thompson, Sullivan County, New York.

It appears that PAL has done a very complete job of searching all avenues, to make sure the casino project is not disturbing any historic or cultural items. I have no concerns at this time with the casino project proceeding.

If during the casino project any inadvertent discoveries are found please contact this office.

Sincerely

Sherry White

Sherry White
Cultural Preservation Officer

F-7

(715) 793-3970 *Email: sloudbear@yahoo.com*

NYSEG

August 9, 2010

Mr. Edward B. Boiteau
Rizzo Associates
One Grant Street
Framingham, MA 01701-9005

Re: Proposed Stockbridge-Munsee Casino
Town of Thompson, Monticello, NY

Dear Mr. Boiteau:

NYSEG is the electric utility that provides service to the Town of Thompson and the surrounding area, and therefore, will be the provider of electric service to the Stockbridge Munsee Casino.

NYSEG presently operates an overhead three-phase electric distribution system along the roads where the casino is proposed. However, both this distribution system and its source, the Rock Hill substation, will require a major upgrade in order to accommodate a load of this magnitude. Upon receiving the appropriate form of commitment from the customer, NYSEG will commence with engineering and construction as required. However, Engineering has estimated the in-service date to be 24 months in length from the time payment is made for the system upgrades to the completion of all construction activity. Therefore if they intend to open the first phase of the casino in 2013, they need to pay NYSEG to begin the electrical reinforcement project in 2011. Any financial requirements from the customer will be accordance with our tariffs on file with the New York State Public Service Commission.

If you have any questions, please give me a call @ 845-292-2434, Ext. 406.

Sincerely,

Guy A Owen

Guy Owen
Key Account Manager

GAO:dm
CC: Mike Rumancik- NYSEG Engineering- Kirkwood
File

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 LUKER ROAD
CORTLAND, NY 13045

July 19, 2001

Ms. Amy M. Green
Senior Project Manager
Rizzo Associates
One Grant Street
Framingham, MA 01701-9005

Dear Ms. Green:

This responds to your letter of June 12, 2001, requesting information on the presence of Federally listed or proposed endangered or threatened species in the vicinity of the proposed installation of new water and sewer lines in the City of Monticello and the Town of Thompson, Sullivan County, New York.

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. In addition, no habitat in the project impact area is currently designated or proposed "critical habitat" in accordance with provisions of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act is required with the U.S. Fish and Wildlife Service (Service). Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered. A compilation of Federally listed and proposed endangered and threatened species in New York is enclosed for your information.

The above comments pertaining to endangered species under our jurisdiction are provided pursuant to the Endangered Species Act. This response does not preclude additional Service comments under other legislation.

For additional information on fish and wildlife resources or State-listed species, we suggest you contact the appropriate New York State Department of Environmental Conservation regional office(s) as shown on the enclosed map, and:

New York State Department of Environmental Conservation
New York Natural Heritage Program Information Services
625 Broadway
Albany, NY 12233
(518) 402-8935

F-9 (1)

National Wetlands Inventory (NWI) maps may or may not be available for the project area. However, while the NWI maps are reasonably accurate, they should not be used in lieu of field surveys for determining the presence of wetlands or delineating wetland boundaries for Federal regulatory purposes. Copies of specific NWI maps can be obtained from:

Cornell Institute for Resource Information Systems
302 Rice Hall
Cornell University
Ithaca, NY 14853
(607) 255-4864

Work in certain waters and wetlands of the United States may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act, the Service may concur, with or without stipulations, or recommend denial of the permit depending upon the potential adverse impacts on fish and wildlife resources associated with project implementation. The need for a Corps permit may be determined by contacting the appropriate Corps office(s) as shown on the enclosed map.

If you require additional information please contact Michael Stoll at (607) 753-9334.

Sincerely,

David A. Stilwell

David A. Stilwell
Field Supervisor

Enclosures

cc: NYSDEC, New Paltz, NY (Environmental Permits)
NYSDEC, Albany, NY (Natural Heritage Program)
COE, New York, NY

F-9 (2)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

August 5, 2010

Amy M. Green
Amy Green Environmental Consulting
26 Captain Brown's Lane
Acton, MA 01720

Dear Ms. Green:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment of the Water and Sewer Utility Corridors, area as indicated on the map you provided, Figure 3-16, located in the Towns of Thompson and Monticello, Sullivan County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

The enclosed report may be included in documents that will be available to the public. However, any enclosed maps displaying locations of rare species are considered sensitive information, and are intended only for the internal use of the recipient; they should not be included in any document that will be made available to the public, without permission from the New York Natural Heritage Program.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g. regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

Tara Salerno jp

Tara Salerno, Information Services
New York Natural Heritage Program # 842

Enc.
cc: Region 3
Peter Nye, Endangered Species Unit, Albany

40 years of stewardship 1970-2010

F-10(1)

Natural Heritage Report on Rare Species and Ecological Communities

NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,
Albany, NY 12233-4757
(518) 402-8935

~The information in this report includes only records entered into the NY Natural Heritage databases as of the date of the report. This report is not a definitive statement on the presence or absence of all rare species or significant natural communities at or in the vicinity of this site.
~Refer to the User's Guide for explanations of codes, ranks and fields.
~Location maps for certain species and communities may not be provided 1) if the species is vulnerable to disturbance, 2) if the location and/or extent is not precisely known, 3) if the location and/or extent is too large to display, and/or 4) if the animal is listed as Endangered or Threatened by New York State.

Natural Heritage Report on Rare Species and Ecological Communities

BIRDS

Haliaeetus leucocephalus

					Office Use
Bald Eagle	**NY Legal Status:**	Threatened	**NYS Rank:**	S2S3B,S2N - Imperiled	5298
Nonbreeding	**Federal Listing:**		**Global Rank:**	G5 - Secure	ESU
	Last Report:	**	**EO Rank:**	**	
	County:	Orange, Sullivan			
	Town:	Deerpark, Fallsburg, Forestburgh, Neversink, Port Jervis - City, Thompson			
	Location:	At, or in the vicinity of, the project site.			
	General Quality and Habitat:	**For information on the population at this location and management considerations, please contact the NYS DEC Regional Wildlife Manager for the Region where the project is located.			

1 Records Processed

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at http://www.natureserve.org/explorer, from NYSDEC at http://www.dec.ny.gov/animals/7494.html (for animals), and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

More detailed information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org. For descriptions of all community types, go to http://www.dec.ny.gov/animals/29384.html and click on Draft Ecological Communities of New York State.

F-10(2)

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189
518-237-8643

NEW YORK STATE
Bernadette Castro
Commissioner

June 28, 2001

Amy M. Green
Senior Project Manager
Rizzo Associates
One Grant Street
Framingham, Massachusetts 01701-9005

Dear Ms. Green:

Re: DOH
Water and Sewer Lines
Thompson/Monticello, Sullivan County
01PR2970

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP) concerning your project's potential impact/effect upon historic and/or prehistoric cultural resources. Our staff has reviewed the documentation that you provided on your project. Preliminary comments and/or requests for additional information are noted on separate enclosures accompanying this letter. A determination of impact/effect will be provided only after ALL documentation requirements noted on any enclosures have been met. Any questions concerning our preliminary comments and/or requests for additional information should be directed to the appropriate staff person identified on each enclosure.

In cases where a state agency is involved in this undertaking, it is appropriate for that agency to determine whether consultation should take place with OPRHP under Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law. In addition, if there is any federal agency involvement, Advisory Council on Historic Preservation's regulations, "Protection of Historic and Cultural Properties" 36 CFR 800 requires that agency to initiate consultation with the State Historic Preservation Officer (SHPO).

When responding, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director

RLP:bsd
Enclosure(s)

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F-11 (1)

REQUEST FOR ADDITIONAL INFORMATION
BUILDINGS/STRUCTURES/DISTRICTS

PROJECT NUMBER 1 PR 2970

In order for us to complete our evaluation of the historic significance of all buildings/structures/districts within or adjacent to your project area we will need the following additional information:

- ☐ Full project description showing area of potential effect.
- ☐ Clear, original photographs of buildings/structures 50 years or older ☐ within or ☐ immediately adjacent to the project area, *keyed to a site map.*
- ☒ Clear, original photographs of the surroundings looking out from the project site in all directions, *keyed to a site map.*
  This refers only to the locations of buildings to be constructed (pump house, etc.)
- ☐ Date of construction.
- ☐ Brief history of property.
- ☐ Clear, original photographs of the following:
- ☐ Other:

Please provide only the additional information checked above. If you have any questions concerning this request for additional information, please call Kathleen LaFrank at (518) 237-8643 ext. 3261.

PLEASE BE SURE TO REFER TO THE PROJECT NUMBER NOTED ABOVE WHEN RESPONDING TO THIS REQUEST

F-11 (2)

ARCHEOLOGY COMMENTS
01PR2970

Based upon a review of the project the State Historic Preservation Office (SHPO) has no concerns regarding potential project effects on archeological resources and does not consider an archeological survey to be warranted.

If you have any questions concerning archeology, please call Mike Schifferli at (518) 237-8643 ext. 3281.

M. Schifferli

06/21/01

F-11 (3)

verizon

Edward B. Boiteau, PE
Rizzo and Associates
One Grant St.
Framingham, Ma. 01701-9005

10/30/02

Dear Mr. Boiteau,

Thank you for your inquiry regarding service at your planned site in the Village of Thompson.

Per our discussion, please be assured that Verizon will meet your requirements for our Tarriffed services at the State Highway 17 street location on a timely basis. Please provide the necessary site and building plans as early as possible so that we can design and build our facilities in advance.

Should you have further questions, please feel free to call me at 845 454 6880.

Yours Truly,
Kevin Keon
Planning Engineer
20 S. Hamilton St.
Poughkeepsie, N.Y.
12601

F-13

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, NY 13045

October 18, 2005

Mr. Brendan Quigley
Environmental Scientist II
Rizzo Associates
One Grant Street
Framingham, MA 01701-9005

Dear Mr. Quigley:

This is in regards to your November 22, 2004, letter requesting information on the presence of Federally-listed endangered or threatened species in the vicinity of the proposed 333-acre Stockbridge-Munsee Casino in the Towns of Thompson and Monticello, Sullivan County, New York. We understand that the proposed project includes a gaming facility, hotel, parking garage, warehouses, and a service station. As you are aware the U.S. Fish and Wildlife Service (Service) previously provided comments on the proposed project in our February 12, 2001, and July 19, 2001, letters to your office. In those letters, we stated that "except for occasional transient individuals, no Federally listed or proposed endangered or threatened species under our jurisdiction are known to occur in the project impact area." Since writing those letters, we have received additional information regarding the proposed project design and the potential for the presence of Federally-listed species and offer the following comments for your consideration.

As you are aware Mr. Michael Stoll of this office contacted you to discuss the potential for the Federally-listed Indiana bat (*Myotis sodalis*) to occur within the proposed project area. We understand that as a result of that conversation and a conversation with Mr. Robert Madej of R.D. Zande Associates, a habitat evaluation was conducted of the site (R.D. Zande Associates, Inc. 2005). Based on our current understanding of Indiana bats, we do not anticipate Indiana bats are likely to use the proposed project area, therefore, no further consultation or coordination pursuant to the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) with respect to the Indiana bat is required.

However, it appears that two other Federally-listed species have the potential to be impacted, directly or indirectly, by the proposed project – the Federally- and State-listed endangered dwarf wedge mussel (*Alasmidonta heterodon*) and the Federally- and State-listed threatened bald eagle (*Haliaeetus leucocephalus*).

The dwarf wedge mussel is known to occur within the Neversink River downstream from the proposed project area in Orange County. While it appears unlikely that dwarf wedge mussels occur within the vicinity of the proposed project, we are interested in protecting the entire Neversink River watershed. We are primarily concerned about the potential for adverse impacts to the dwarf wedge mussel and its habitat from direct or indirect impacts to the Neversink River associated with this project and other development activities. Therefore, we recommend an evaluation of future development likely to result from the proposed project, as well as an

F-13(1)

evaluation of impacts to the water quality of the Neversink River directly associated with the proposed project. The following links may assist you as they provide additional information about the dwarf wedge mussel http://www.fws.gov/northeast/nyfo/es/dwm.pdf.

A wintering site for bald eagles is known within the vicinity of the proposed project along the Neversink River. The same winter roost sites are generally used for many years by eagles. They are often associated with large trees in a very unique setting, providing buffering from prevailing winds in an undisturbed area, usually near open water habitats for foraging, but also often several miles from feeding areas. Eagles will also feed on carrion or small mammal prey found in terrestrial areas. We are concerned about potential impacts from construction activities as well as post-construction human activities that may disturb bald eagles. In addition, we have concerns about potential impacts to the Neversink River that may affect the potential prey base of the eagles.

The project's environmental documents should identify project activities that might result in adverse impacts to the dwarf wedge mussel, bald eagle, or their habitat. This information should be provided to this office and they will be used to evaluate potential impacts to the dwarf wedge mussel, bald eagle, or their habitat, and to determine the need for further coordination or consultation pursuant to the ESA.

Except for the bald eagle, the potential for the dwarf wedge mussel, and occasional transient individuals, no other Federally-listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. In addition, no habitat in the project impact area is currently designated or proposed "critical habitat" in accordance with provisions of the ESA. Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered. The most recent compilation of Federally-listed and proposed endangered and threatened species in New York* is available for your information. If the proposed project is not completed one year from the date of this determination, we recommend that you contact us to ensure that listed species presence/absence information for the proposed project is current.

The above comments pertaining to endangered species under our jurisdiction are provided as technical assistance pursuant to the ESA. This response does not preclude additional Service comments under other legislation.

As stated in our February 12, 2001, letter, the swollen wedge mussel (*Alasmidonta varicosa*) is found in the Neversink River in the vicinity of the proposed project. The swollen wedge mussel is considered a species of concern by both the Service and is listed as threatened by the State of New York. Our concerns for impacts from the proposed project to this species remain.

As stated above, the dwarf wedge mussel (brook floater) is listed as endangered and bald eagle is listed as threatened by the State of New York. Additional project plans and evaluations should be coordinated with both this office and with the New York State Department of Environmental Conservation (NYSDEC). The NYSDEC contact for the Endangered Species Program is Mr. Peter Nye, Endangered Species Unit, 625 Broadway, Albany, NY 12233 (telephone: [518] 402-8859).

For additional information on fish and wildlife resources or State-listed species, we suggest you contact the appropriate NYSDEC regional office(s)* and the New York Natural Heritage Program Information Services.*

F.13(2)

Work in certain waters of the United States, including wetlands and streams, may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act, the Service may concur, with or without recommending additional permit conditions, or recommend denial of the permit depending upon potential adverse impacts on fish and wildlife resources associated with project construction or implementation. The need for a Corps permit may be determined by contacting the appropriate Corps office(s).* In addition, should any part of the proposed project be authorized, funded, or carried out, in whole or in part, by a Federal agency, such as the Corps, further consultation between the Service and that Federal agency pursuant to the ESA may be necessary.

Thank you for your time. If you require additional information please contact Robyn Niver at (607) 753-9334. Future correspondence with us on this project should reference project file 50377.

Sincerely,

David A. Stilwell
Field Supervisor

References:

R.D. Zande and Associates, Inc. March 2005. Survey for the presence of suitable roosting and foraging habitat for Federally endangered Indiana bats at the proposed Stockbridge-Munsee Casino site Thompson, New York. R.D. Zande and Associate, Inc., Columbus, Ohio.

*Additional information referred to above may be found on our website at: http://nyfo.fws.gov/es/section7.htm

cc: NYSDEC, New Paltz, NY (Attn: S. Joule)
NYSDEC, Albany, NY (Endangered Species; Attn: P. Nye)
NYSDEC, Albany, NY (Natural Heritage)
COE, New York, NY

F.13(3)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Field Office
3817 Luker Road
Cortland, NY 13045
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo

Project Number: 120130

To: Amy Green Date: Jan 4, 2012

Regarding: Stockbridge-Munsee Casino

Town/County: Town of Thompson / Sullivan County

The U.S. Fish and Wildlife Service (Service) New York Field Office has received your request for information regarding occurrences of Federally-listed or proposed threatened and endangered species within the vicinity of the above-referenced project/property. In an effort to streamline project reviews, we have shifted our species list request responses to our website at http://www.fws.gov/northeast/nyfo/es/section7.htm. Please go to our website and print the appropriate portions of our county list of endangered, threatened, proposed, and candidate species, and the official list request response for your files. Step-by-step instructions are also found on our website.

As a reminder, Section 9 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) prohibits unauthorized taking* of listed species and applies to Federal and non-Federal activities. Additionally, Section 7(a)(2) of the ESA requires Federal agencies, in consultation with the Service, to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. An assessment of the potential direct, indirect, and cumulative impacts is required for all Federal actions that may affect listed species. For projects not authorized, funded, or carried out by a Federal agency, consultation with the Service pursuant to Section 7(a)(2) of the ESA is not required. However, no person is authorized to "take"* any listed species without appropriate authorizations from the Service. Therefore, we provide technical assistance to individuals and agencies to assist with project planning to avoid the potential for "take," or when appropriate, to provide assistance with their application for an incidental take permit pursuant to Section 10(a)(1)(B) of the ESA.

Project construction or implementation should not commence until all requirements of the ESA have been fulfilled. If you have any questions or require further assistance regarding threatened or endangered species, please contact the Endangered Species Program at (607) 753-9334. Please refer to the above project number in any future correspondence.

Endangered Species Biologist: Robyn A. Niver Robyn A Niver

*Under the Act and regulations, it is illegal for any person subject to the jurisdiction of the United States to ***take*** (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered fish or wildlife species and most threatened fish and wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. "Harm" includes any act which actually kills or injures fish or wildlife, and case law has clarified that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

F.14

OFFICE OF PARKS · RECREATION · HISTORIC PRESERVATION
NEW YORK STATE

Andrew M. Cuomo
Governor

Rose Harvey
Commissioner

New York State Office of Parks, Recreation and Historic Preservation

Historic Preservation Field Services Bureau • Peebles Island, PO Box 189, Waterford, New York 12188-0189
518-237-8643
www.nysparks.com

January 18, 2012

Bridget Swanke
Stockbridge-Munsee Community
N8476 Moh He Con Nuck Rd.
P.O. Box 70
Bowler, Wisconsin 54416
(via email only)

Re: BIA
Stockbridge-Munsee Casino Project
Town of Thompson, Sullivan County
11PR08012 (Previously 02PR4242 & 06PR3190)

Dear Ms. Swanke:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the January 28, 2005 Draft Environmental Impact Statement and the November 2002 Phase I Cultural Resources Investigation Report (PAL), in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, the SHPO understands that all project construction will be occurring on the Gildick Parcel. Therefore, the SHPO recommends that this project will have **No Effect** upon cultural resources in or eligible for inclusion in the National Register of Historic Places with the understanding that construction will not occur below 1100 ft asl. If construction is proposed for areas below 1100 ft asl archaeological testing conducted in consultation with a geomorphologist will be necessary.

The SHPO appreciates the opportunity to comment on this information. Further consultation with the SHPO is recommended if there are any changes to the project. Please telephone me at ext. 3280 with any questions you may have.

Sincerely,

Nancy Herter

Nancy Herter
Scientist, Archaeology

cc. Sherry White, Stockbridge-Munsee THPO *(via email only)*
Deborah Cox, PAL *(via email only)*
Kathleen Martens, Esq. OPRHP (via email only)
Robert Williams, NYS Director of Indian Gaming *(via email only)*

F.15

Appendix G

Neversink River Bank Stability Assessment

TETRA TECH

Neversink River Bank Stability Review

Prepared by:

TETRA TECH

July 10, 2003

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1.0 Introduction

The stability of the banks of the Neversink River have been evaluated to determine if bank erosion may potentially occur and impact the existing environment of the proposed Stockbridge-Munsee Casino site. Figure 1 shows the river bank assessment areas. The assessment included a site visit to determine the length and characteristics of the bank along the project site on June 17, 2003. In addition, a review was conducted of the river velocity, as well as stream and floodplain characteristics along the Neversink River contained within the *Flood Insurance Study for Thompson, NY (Sullivan Co.)*, dated February 15, 1991 and prepared by the Federal Emergency Management Agency (FEMA). Rizzo Associates staff has monitored the banks during field investigations since the early spring of 2001, and no bank erosion has been observed during that time.

2.0 Field Investigation

An evaluation of the river bank was conducted to assess the existing stability and condition of the banks of the Neversink River. Aerial photographs and survey mapping were used as base mapping for the field investigation. The river bank field assessment included observations of:

- vegetation community
- changes in vegetation
- stain lines and drift marks
- top of points bars (depositional features)
- changes in slope
- changes in bank material
- bank undercuts

The bank was divided into Areas 1 through 8. The characteristics of these areas are described below. It should be noted that none of the areas show evidence of erosion. Representative photographs of the identified areas are provided in Appendix A.

Area 1. This area is characterized as river bank with steep topography adjacent to upland forest. Woody vegetation common to this area includes hemlock (*Tsuga canadensis*), red oak (*Quercus rubra*), and American beech (*Fagus grandifolia*). The sparse herbaceous layer includes upland

sedges (*Carex sp.*) and rye grass (*Elymus sp*.). Upland mosses are also present within the understory.

The river bank at this location consists of exposed shale bedrock that extends into the Neversink River. No evidence of bank erosion was noted.

Area 2. This area is characterized as a fringe emergent wetland system with flat floodplain topography. The thick dominant herbaceous vegetation includes blue-joint reed grass (*Calamagrostis canadensis*), tussock sedge (*Carex stricta*), goldenrod (*Solidago sp*.), deer tongue (*Diachanthelium clandestinum*), reed canary grass (*Phalaris arundinacea*), galium (*Galium sp*.), blue flag iris (*Iris veriscolor*) and green bulrush (*Scripus atrovirens*).Woody vegetation is generally sparse and includes red maple (*Acer rubrum*), ironwood (*Carpinus caroliniana*), black willow (*Salix nigra*), pussy willow (*Salix discolor*), and alder (*Alnus rugosa*).

The river bank at this location is completely vegetated with emergent species. Water marks, silt lines, and drift lines from high water were noted. No evidence of bank erosion was observed.

Area 3. This combination forested and emergent system forms a levee that abuts the Neversink River. Woody vegetation common to this area includes sycamore (*Platanus occidentalus*), black cherry (*Prunus serotina*), Norway maple (*Acer plaatnoides*), and red maple. Herbaceous vegetation includes green bulrush, tussock sedge, goldenrod, reed canary grass, galium and green bulrush.

No evidence of bank erosion was observed.

Area 4. This wetland is characterized as an emergent system with flat floodplain topography. Herbaceous vegetation includes tussock sedge, goldenrod, deer tongue, blue-joint reed grass and green bulrush. Drainage from the mining operation enters the river at this point.

No evidence of bank erosion was observed.

Area 5. Similar to Area 1, this area is characterized as river bank with steep topography adjacent to upland forest. Woody vegetation common to this area includes hemlock, red oak, and American beech. The sparse herbaceous layer includes upland sedges and grasses. Upland mosses are present within the understory.

The river bank at this location consists of exposed shale bedrock abutting the Neversink River. No evidence of bank erosion was noted.

1911

1991

1500 0 375 750 1500

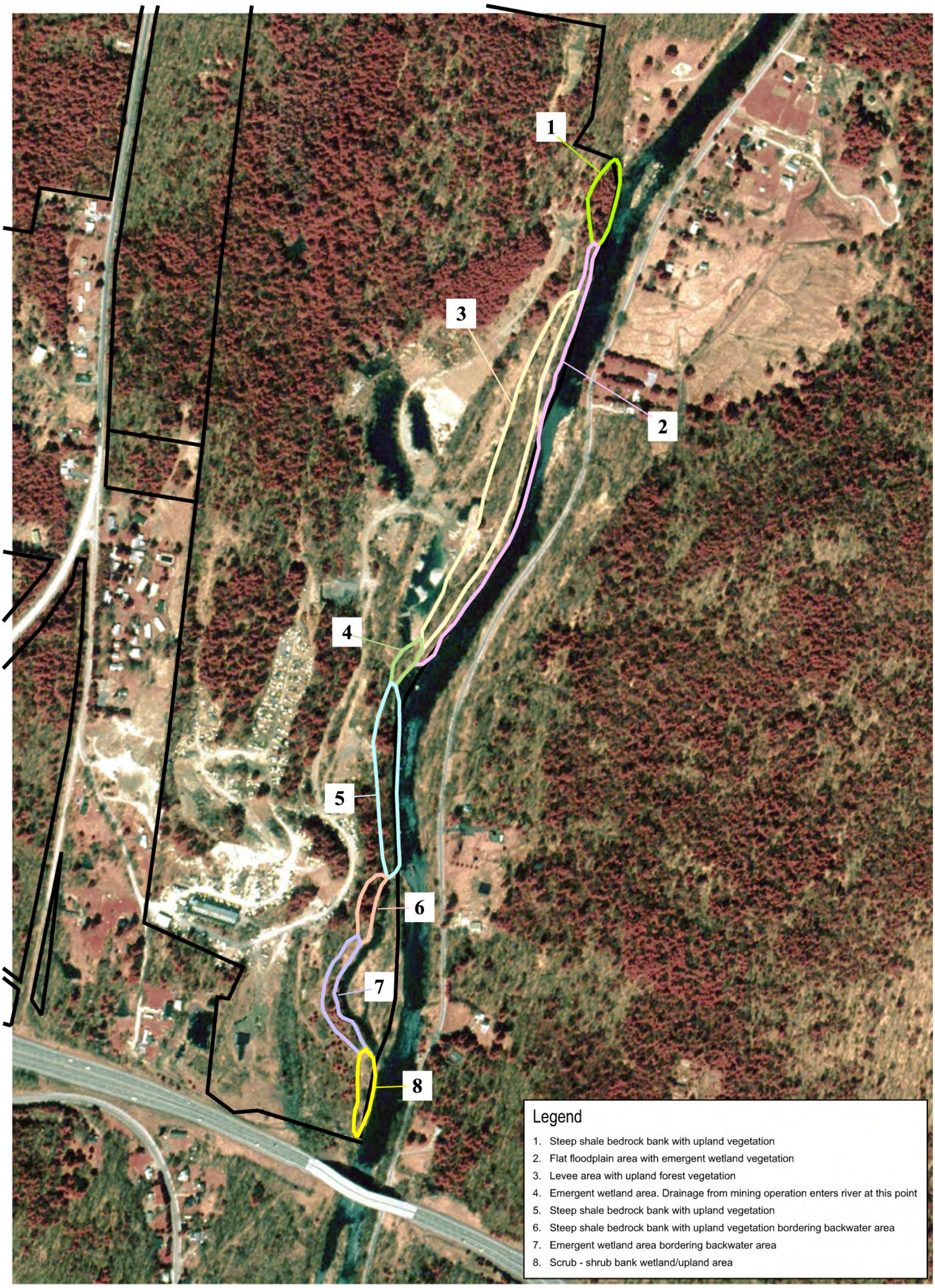
Approximate Scale

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Comparison of 1911
and 2001 River Location

Figure 2



600 0 150 300 600

Approximate Scale in Feet

TETRA TECH

Stockbridge-Munsee Casino
Thompson, New York

River Bank
Assessment Areas

Figure 1

600 0 150 300 600

Approximate Scale in Feet

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

River Cross Section

Figure 3

Area 6. This area has same general characteristics as Areas 1 and 5 but borders a backwater area of the Neversink River. The bank of the backwater area has steep topography adjacent to upland forest. Woody vegetation common to this area includes hemlock, red oak, and American beech. The sparse herbaceous layer includes upland sedges and grasses.

The flow into this area is slow and the river bank at this location consists of exposed shale bedrock. No evidence of bank erosion was noted.

Area 7. This area is characterized as an emergent wetland system bordering a backwater area of the Neversink River. The thick dominant herbaceous vegetation includes blue-joint reed grass, tussock sedge, goldenrod, deer tongue, and green bulrush.

The flow is slow at this location and the bank is completely vegetated with emergent species. No evidence of bank erosion was observed.

Area 8. This area is characterized as a fringe scrub-shrub wetland/upland system. Woody vegetation is generally sparse and includes silky dogwood (*Cornus amomum*), black willow, pussy willow and alder. The herbaceous vegetation includes blue-joint reed grass, tussock sedge, goldenrod, deer tongue, and green bulrush. The river bank at this location is completely vegetated with shrub and emergent species.

Water marks, silt lines, and drift lines were noted. No evidence of bank erosion was observed. The State Route 17 bridge abutments are downstream of this area.

3.0 River Characteristics

In order to determine whether erosion might occur along the river banks in the future, review of velocity, stream and floodplain data was researched within the FEMA Flood Insurance Study (see below). Based on review of the river characteristics contained within the FEMA Flood Insurance Study and the field investigations, it is apparent that erosion will not occur to the banks along the river fronting the project site during normal seasonal river flows, nor during periodic flood conditions.

Velocity. There are four (4) river cross-sections evaluated by FEMA as part of their river flood study, which front the property limits (Figure 3). Cross-section N-N is located just north of Route 17 (near the bridge, where the river floodway begins to narrow); cross-section O-O is just south of Area 3; cross-section P-P fronts the proposed main casino building; and cross-section Q-Q is north of the main casino building and the property. River bank Areas 1 though 8 are located between cross-sections N-N and Q-Q. Area 3 is located between cross-sections O-O and

P-P, while Area 7 is located between cross-sections N-N and O-O. The following discussions on velocity and floodplain are based on FEMA cross-sections O-O and P-P data, since these two cross-sections are similar in floodway widths and section areas, and are representative of the typical river section fronting the project.

The FEMA Flood Insurance Study has determined that the 100-year mean velocity within the floodway of the river at cross-section locations O-O and P-P ranges from 3.9 feet per second (fps) to 4.4 fps. The mean velocity is calculated by averaging the velocities measured at 0.2 feet of depth and 0.8 feet of depth at the centerline of the river channel. Neither of these mean velocities is considered to be erosive. Furthermore, the river velocity at the shoreline will be significantly less due to the increased "wetted perimeter" of the river bottom and bank as it relates to the flow area. Also, the section of the river adjacent to Area 3 bows out away from the site, causing a further reduction in the velocity along the near shoreline. Therefore, the river bank in the vicinity of Area 3 will experience velocities which are well below erosive levels, even during sever storm events up to and including 100-year flood flows as estimated by FEMA.

The above conclusions regarding the river velocities is further confirmed by the actual stream bed characteristics present along the river reach adjacent to the site. Based on the Flood Profiles contained within the FEMA Flood Insurance Study, the stream bed slope of the river varies from very flat to moderately steep from upstream cross-section Q-Q to downstream cross-section N-N. Between cross-sections Q-Q to P-P, the stream bed slope is very flat (0.036%); between cross-sections P-P to N-N, the stream bed is moderately sloped (0.15%); and from cross- N-N to the Route 17 Bridge, the stream bed begins to steepen in slope (>0.3%). The stream bed between cross-sections P-P and N-N widens in this area and has very flat to moderate slopes, which is indicative of the low non-erosive mean velocities discussed above. The velocities are slow enough that the river is depositing materials along this reach of the river as it travels downstream towards Route 17. This is evident in the field by the islands that have formed within the river fronting the property. These river characteristics support the conclusions above that erosive velocities will not occur along the river bank (Areas 1 through 8) fronting the property, even during severe flood events.

Flood Innundation/Overtopping. The floodplain elevations along the river were investigated to determine the frequency at which the river will overtop the existing bank in Area 3, possibly causing erosion along the top and interior portion of the berm. Based on a review of the Flood Profiles at river cross-sections O-O and P-P contained within the FEMA Flood Insurance Study, the 10-year floodplain elevations are 1076 feet and 1078 feet, respectively. The highest 2- and 5-year floodplain elevations were

approximated to be 1059 feet and 1073 feet at cross-sections O-O and P-P, respectively (see Appendix B for supporting documentation). The elevations along the top of the river bank in this area range from 1065 feet and 1073.4 feet. Therefore, the river bank fronting the property in Area 3 will only overtop during storm events greater that the 2-year storm, or statistically, not less that once every two years. However, the grades along the river bank also indicate that the floodplain area interior to the berm (proposed wetland replication area) will be correspondingly inundated by back flooding from further downstream. Consequently, as the river stage reaches the top of berm elevation, the interior area will already be flooded to the same elevation. As a result, there will be no significant flow along the interior slope of the berm from river flooding. Therefore, there is no evidence, either from field observations or an assessment of river velocities and flood stage, that river flows will cause erosion of the existing berm and bank along this reach of the river.

4.0 Findings

Based on the information provided above, we find that the banks of the Neversink River are stable and are not expected to be subject to erosion. By comparison of the U.S.G.S. maps of the area for 1911 and 2001 (Figure 2), the banks of the Neversink River in this area have been stable for close to 100 years. The only change in the Neversink River in this reach appears to be the creation of the small island just north of the State Route 17 bridge. Because the River's western bank in this area is stable, and because it is protected by this island and the backwater condition, it is most likely that the only change that may occur is the reshaping of this island. Because the site development is set well back from the banks, the proposed casino project should have no effect on the continued stability of the banks.

P:\7000\7419\Wetlands\Neversink River Bank Assessment_RE-form.doc

Appendix A

Photographs

Area 1: Typical View

Area 2: Typical View

TETRA TECH

Area 2: Typical View

Area 3: Typical View

TETRA TECH

Area 4: Typical View

Area 5: Typical View

Area 6: Typical View

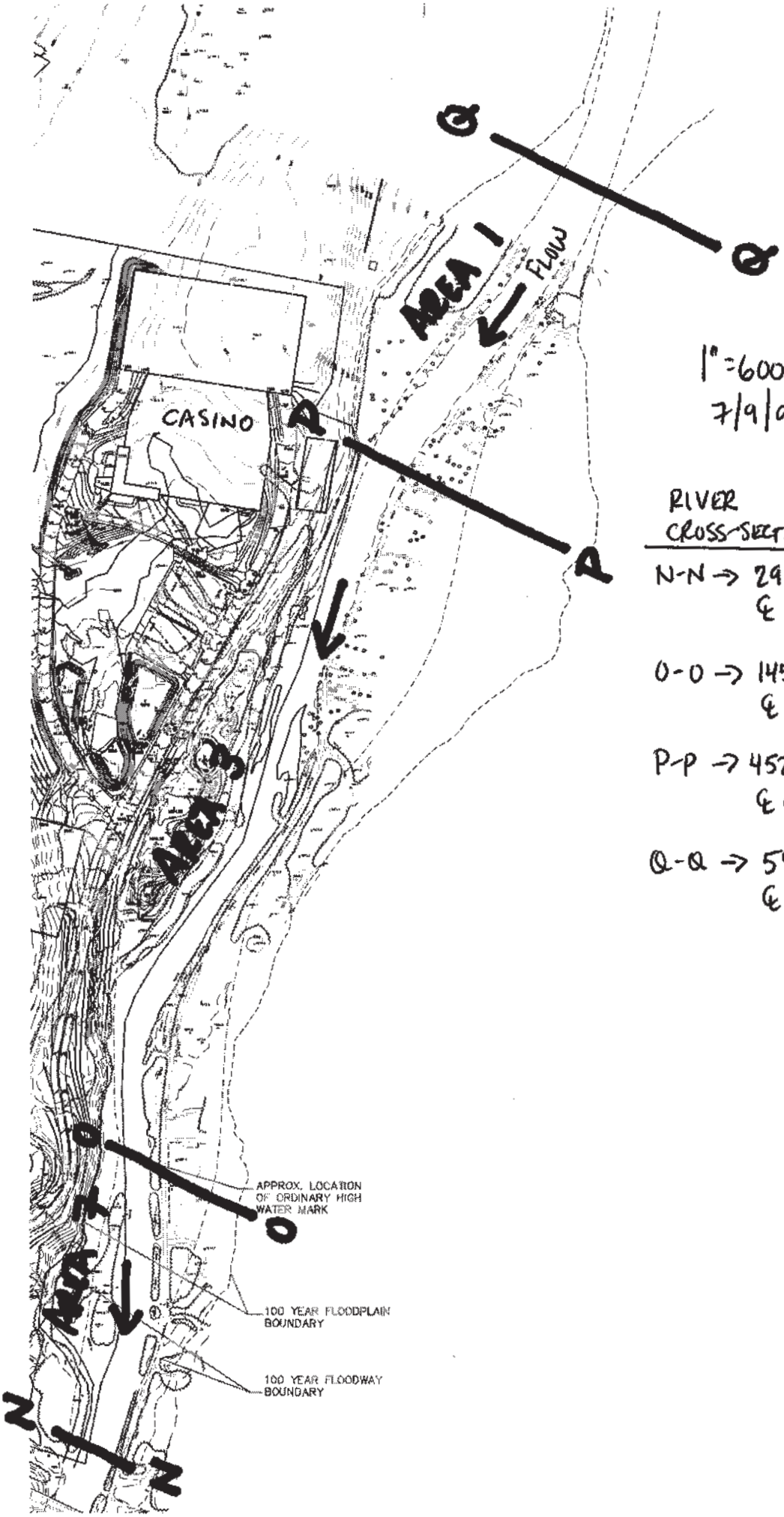
Area 7: Typical View

Area 8: Typical View

TETRA TECH

Appendix B

Supporting Documentation



1" = 600'
7/9/03

RIVER CROSS-SECTION

N-N → 292' FROM ℄ of Route 17

O-O → 1458' FROM ℄ of Route 17

P-P → 4528' FROM ℄ of Route 17

Q-Q → 5943' FROM ℄ of Route 17

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NGVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Neversink River (continued)								
L	24,590[1]	446	6,129	5.2	1,075.9	1,075.9	1,076.4	0.5
H	26,940[1]	156	3,461	9.1	1,080.4	1,080.4	1,081.2	0.8
N	27,940[1]	213	4,676	6.8	1,082.6	1,082.6	1,082.9	0.3
O	28,890[1]	398	8,200	3.9	1,083.4	1,083.4	1,084.3	0.9
P	31,930[1]	535	7,167	4.4	1,085.0	1,085.0	1,085.8	0.8
Q	33,350[1]	288	5,123	6.2	1,085.9	1,085.9	1,086.7	0.8
R	34,370[1]	186	3,387	9.3	1,086.5	1,086.5	1,087.3	0.8
S	37,130[1]	304[4]	5,451	5.8	1,091.3	1,091.3	1,092.3	1.0
T	41,340[1]	1,262[4]	15,983	2.0	1,095.2	1,095.2	1,096.1	0.9
Sackett Lake Outlet								
A	4,290[2]	51	194	1.4	1,298.4	1,298.4	1,299.4	1.0
B	3,240[2]	12	41	6.8	1,299.4	1,299.4	1,300.2	0.8
C	1,875[2]	20	52	5.4	1,320.5	1,320.5	1,321.2	0.7
D	1,560[2]	394	2,470	0.1	1,330.4	1,330.4	1,331.3	0.9
E	435[2]	66	175	1.6	1,330.4	1,330.4	1,331.3	0.9
Tributary to Neversink River								
A	920[3]	16	53	10.4	1,093.2	1,093.2	1,093.3	0.1
B	2,150[3]	16	53	10.4	1,165.7	1,165.7	1,165.7	0.0
C	2,805[3]	16	53	10.4	1,269.4	1,269.4	1,269.8	0.4
D	3,480[3]	32	106	4.0	1,290.1	1,290.1	1,290.7	0.6

[1] Feet from corporate limits
[2] Feet downstream of Sackett Lake
[3] Feet above confluence with the Neversink River
[4] This width extends beyond corporate limits

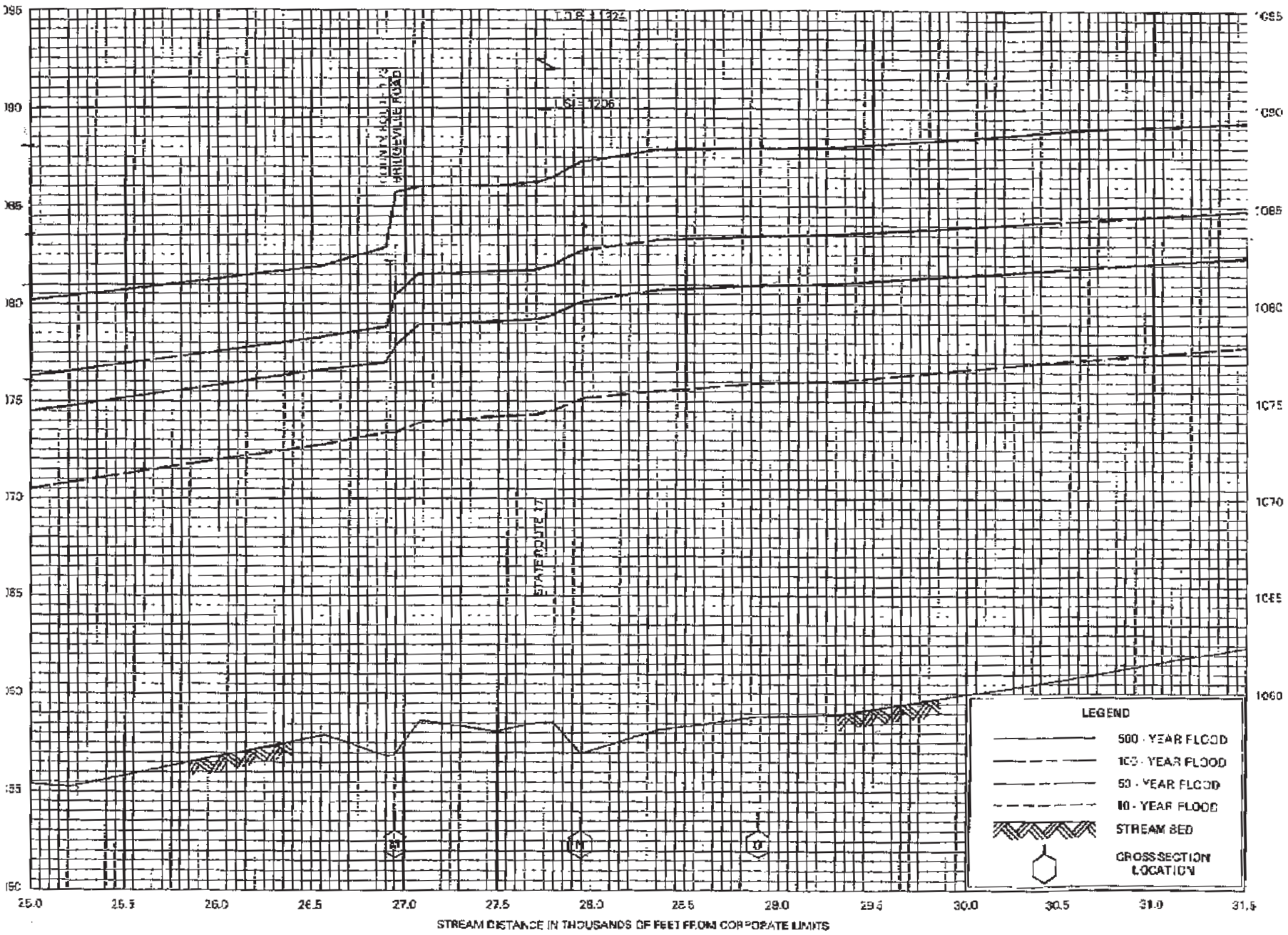
TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF THOMPSON, NY
(SULLIVAN CO.)

FLOODWAY DATA

NEVERSINK RIVER - SACKETT LAKE OUTLET - TRIBUTARY TO NEVERSINK RIVER



FLOOD PROFILES

NEVERSINK RIVER

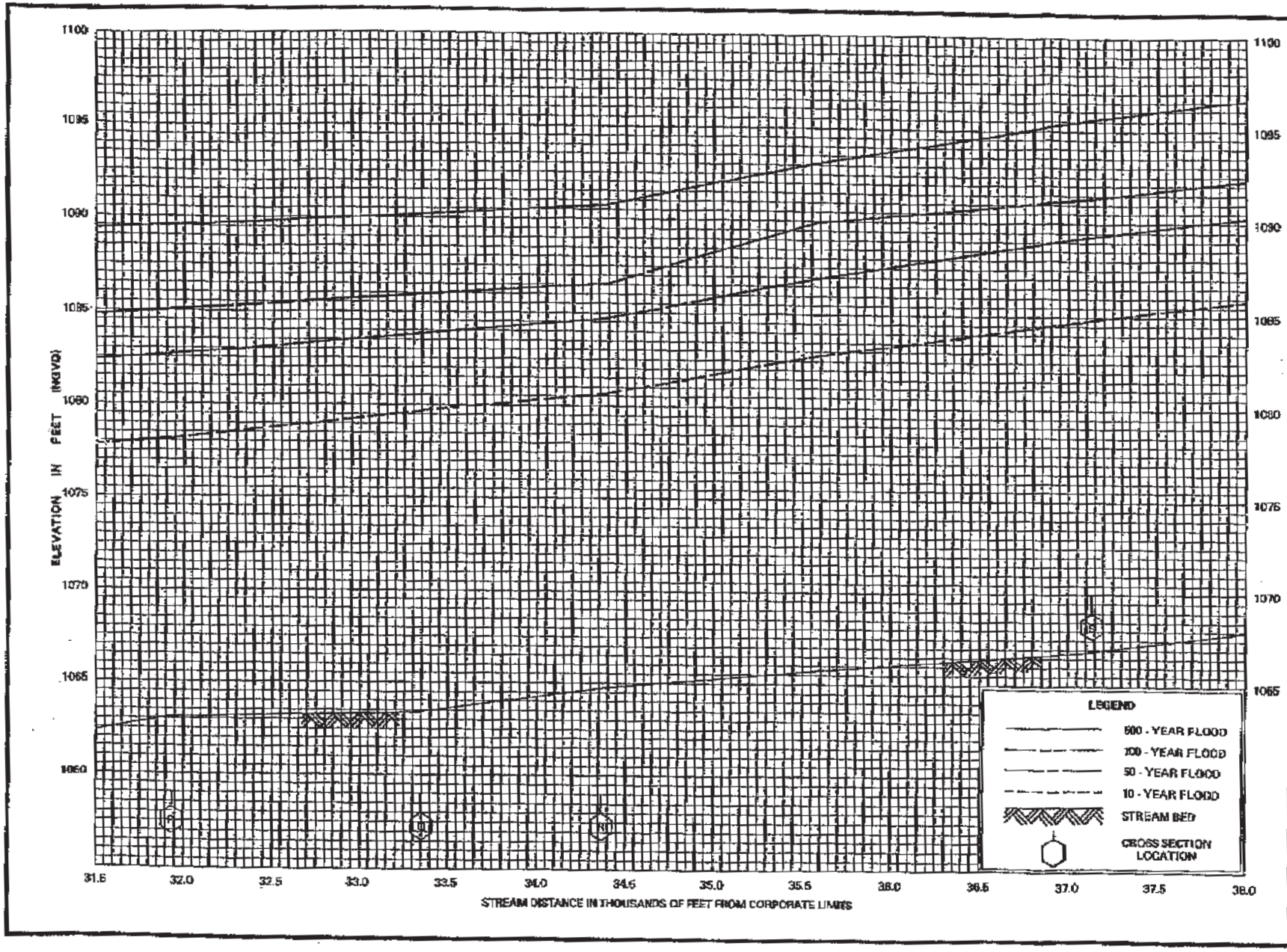
FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF THOMPSON, NY

(SULLIVAN CO.)

15P

.7 = .5
.55 = X



FLOOD PROFILES

NEVERSINK RIVER

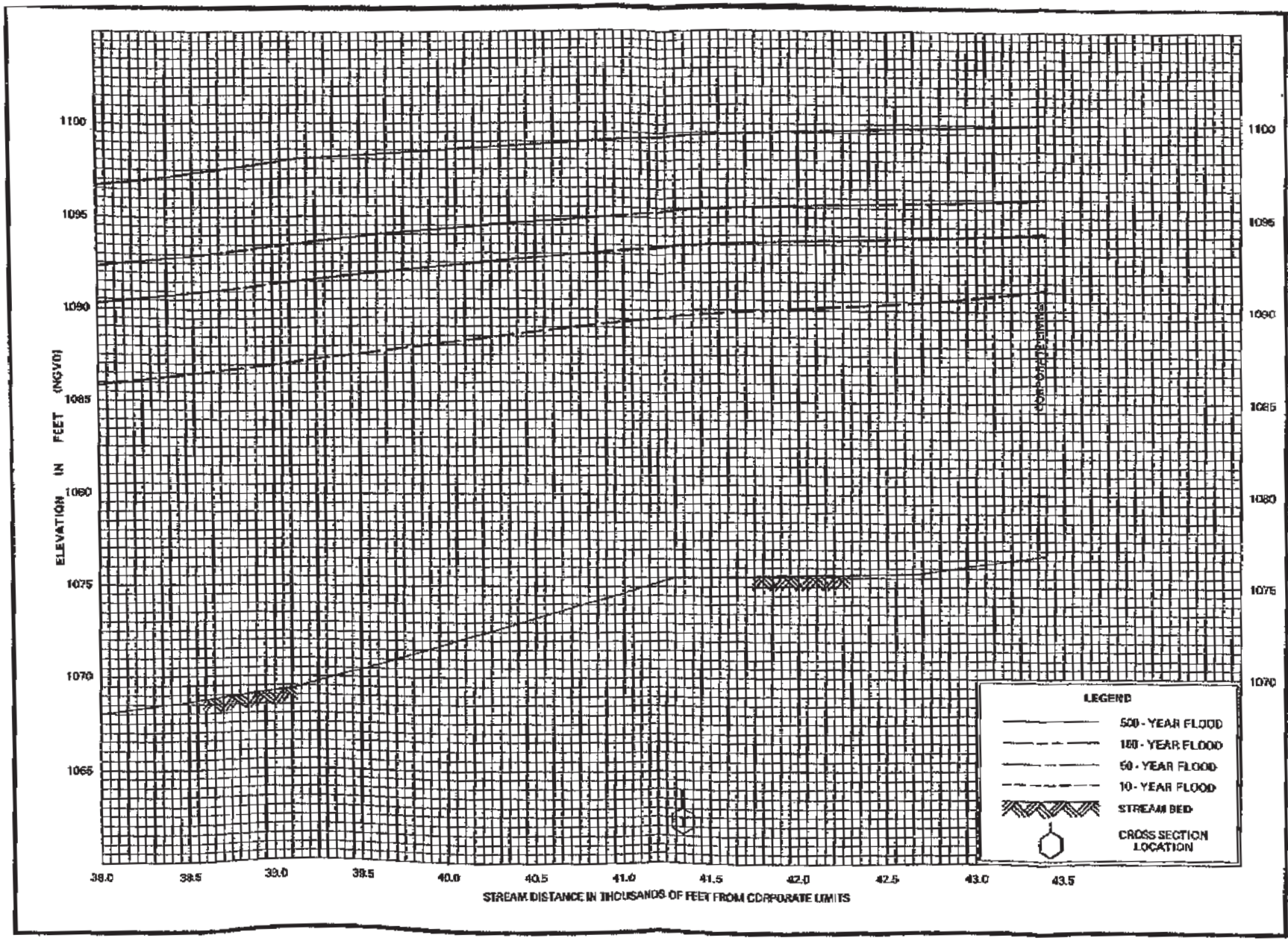
FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF THOMPSON, NY

(SULLIVAN CO.)

16P

Post-it™ Fax Note 7671	Date 7-9-03	# of pages ▸ 2
To [illegible]	From E. BOITEAU	
Co./Dept.	Co.	
Phone #	Phone # 508.903.2487	
Fax # 312-938-0118	Fax #	



FLOOD PROFILES

NEVERSINK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF THOMPSON, NY

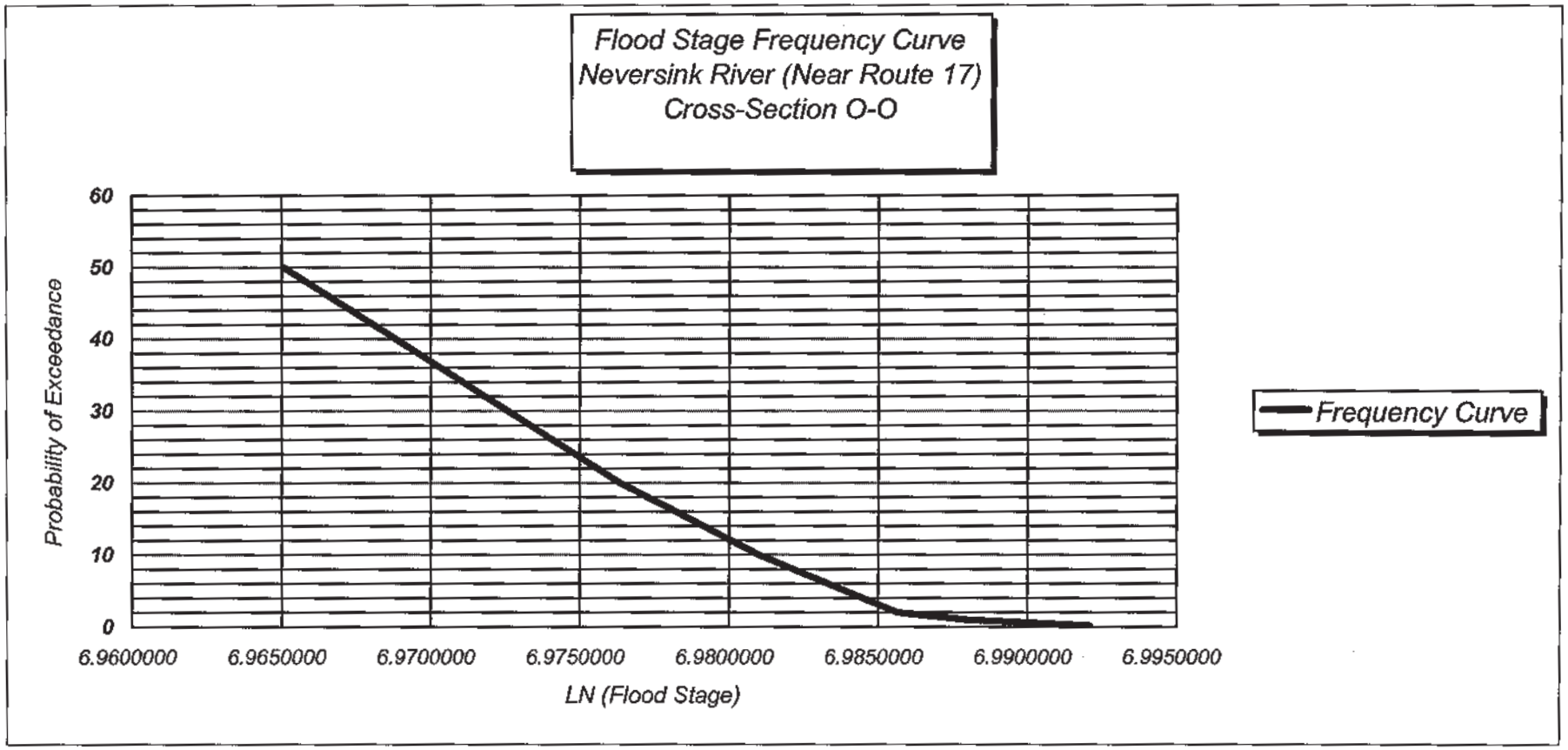
(SULLIVAN CO.)

17P

FLOOD STAGE FREQUENCY ANALYSIS FOR NEVERSINK RIVER

Flood Frequency (Years))	Probability of Exceedance (%)	Flood Stage ft, NGVD	LN Flood Stage
500	0.2	1088.00	6.9920964
100	1	1083.50	6.9879518
50	2	1081.00	6.9856418
10	10	1076.00	6.9810057
5	20	1071.00	6.9763481
2	50	1059.00	6.9650803

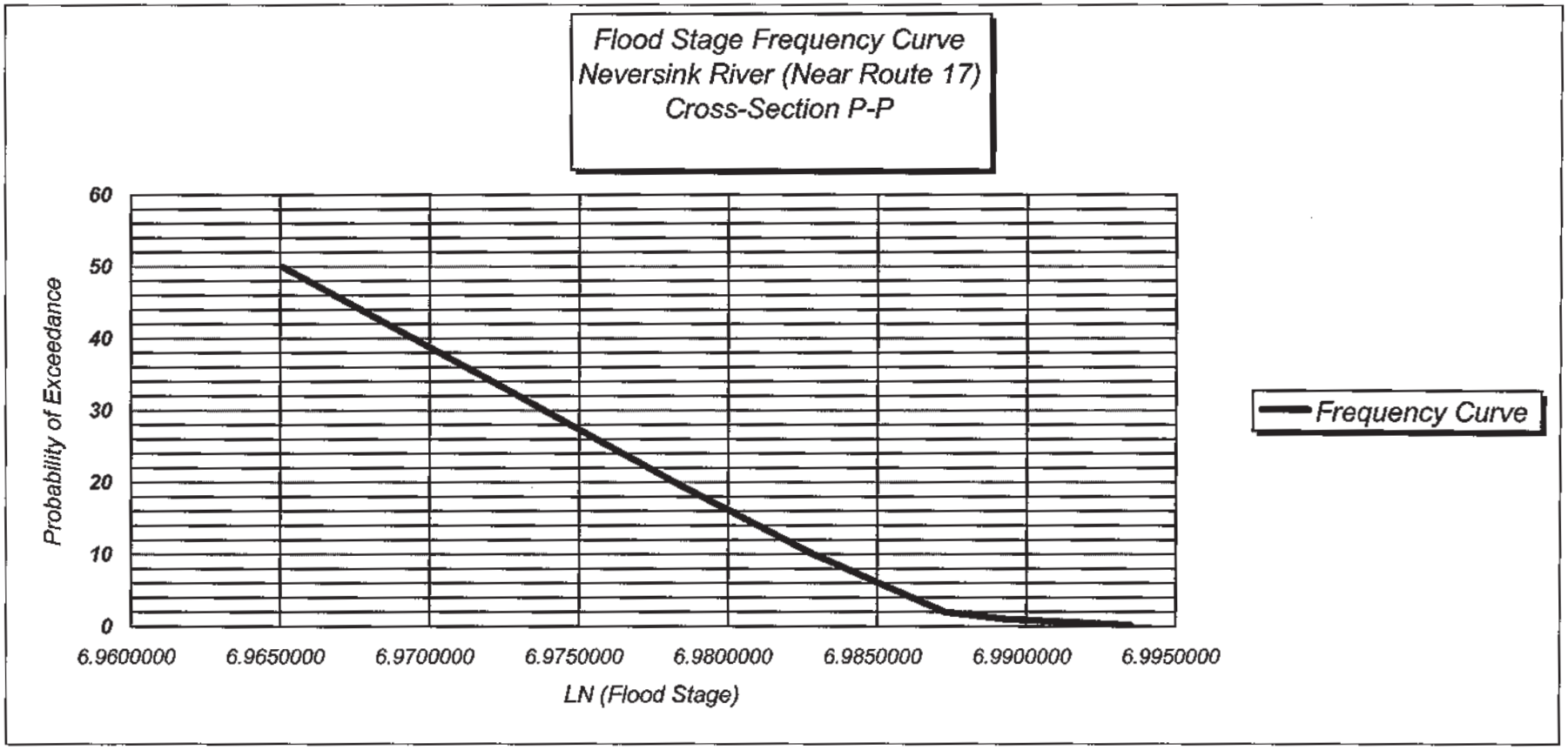
The flood stages for the 10-, 50-, 100- and 500-year frequency flood events were previously determined in the FLOOD INSURANCE STUDY for Town of Thompson, NY. The flood stage for the 2- and 5-year frequency flood events were "fitted" into the flood stage frequency curve through trial and error. Representative flood stages were determined when the natural log of the trial flood stage elevation resulted in a straight line plot between the known points (i.e., natural logarithm (LN) of 10-, 50-, 100- and 500-year flood stages). Cross-Section O-O along Neversink River.



FLOOD STAGE FREQUENCY ANALYSIS FOR NEVERSINK RIVER

Flood Frequency (Years))	Probability of Exceedance (%)	Flood Stage ft, NGVD	LN Flood Stage
500	0.2	1089.50	6.9934742
100	1	1085.00	6.9893353
50	2	1082.75	6.9872594
10	10	1078.00	6.9828628
5	20	1073.00	6.9782137
2	50	1059.00	6.9650803

The flood stages for the 10-, 50-, 100- and 500-year frequency flood events were previously determined in the FLOOD INSURANCE STUDY for Town of Thompson, NY. The flood stage for the 2- and 5-year frequency flood events were "fitted" into the flood stage frequency curve through trial and error. Representative flood stages were determined when the natural log of the trial flood stage elevation resulted in a straight line plot between the known points (i.e., natural logarithm (LN) of 10-, 50-, 100- and 500-year flood stages). Cross-Section P-P along Neversink River.



Appendix H

U.S. Army Corps of Engineers Jurisdictional Determination

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

8 JAN 2002

REPLY TO
ATTENTION OF:
Regulatory Branch

SUBJECT: Permit Application Number 2001-00969-YS
by Trading Cove New York, LLC and the Stockbridge-Munsee Community

Trading Cove New York, LLC and the Stockbridge Munsee Community
c/o Ms. Amy Green
Rizzo Associates
One Grant Street
Framingham, MA 01701-9005

Dear Ms. Green:

On July 3, 2001, the New York District of the Corps of Engineers received a request for a Department of the Army jurisdictional determination for the above referenced project. This request was made by Rizzo Associates, as consultant for Trading Cove New York, LLC and the Stockbridge Munsee Community. The site consists of approximately 334 acres, in the Delaware River Basin, on Route 17 in the Town of Thompson, Sullivan County, New York. The proposed project would involve the development of a casino complex.

In the letter received on July 3, 2001, your office submitted a proposed delineation of the extent of waters of the United States within the project boundary. A site inspection was conducted by representatives of this office on August 1, 2001, in which it was agreed that changes would be made to the delineation and that the modified delineation would be submitted to this office. On November 20, 2001, this office received the modified delineation.

Based on the material submitted and the observations of the representatives of this office during the site visit, this site has been determined to contain jurisdictional waters of the United States based on: the presence of wetlands determined by the occurrence of hydrophytic vegetation, hydric soils and wetland hydrology according to criteria established in the 1987 "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1; and the presence of a defined water body (e.g. stream channel, lake, pond, river, etc.) which is part of a tributary system.

These jurisdictional waters of the United States are shown on the drawing entitled "Stockbridge Munsee Casino-Thompson, New York-Wetland Delineation Site Plan-Sheet No. 1", prepared by Rizzo Associates, dated August 20, 2001, and last revised

November 2, 2001. This drawing indicates that there are seventeen (17) streams and eighteen (18) principal wetland areas on the project site which are part of a tributary system, and are considered to be waters of the United States.

The first stream (Waterway #1, Neversink River) is located along the eastern edge of the project area and is approximately 5000 feet long and comprises 4.59 acres within the project boundary. The second stream (Waterway #2) is located in the southern portion of the project area, east of County Highway 161, and is approximately 200 feet long and comprises 0.01 acre within the project boundary. The third stream (Waterway #3) is located in the northern portion of the project area, east of County Highway 161, and is approximately 650 feet long and comprises 0.06 acre within the project boundary. The fourth stream (Waterway #4) is located in the northern portion of the project area, east of County Highway 161, and is approximately 450 feet long and comprises 0.13 acre within the project boundary. The fifth stream (Waterway #5) is located in the northern portion of the project area, east of County Highway 161, and is approximately 650 feet long and comprises 0.12 acre within the project boundary. The sixth stream (Waterway #6) is located in the northern portion of the project area, east of County Highway 161, and is approximately 300 feet long and comprises 0.04 acre within the project boundary. The seventh stream (Waterway #7) is located in the northern portion of the project area, east of County Highway 161, and is approximately 450 feet long and comprises 0.09 acre within the project boundary. The eighth stream (Waterway #8) is located in the northern portion of the project area, near County Highway 161, and is approximately 750 feet long and comprises 0.16 acre within the project boundary. The ninth stream (Waterway #9) is located in the northern portion of the project area, near County Highway 161, and is approximately 750 feet long and comprises 0.26 acre within the project boundary. The tenth stream (Waterway #10) is located in the northern portion of the project area, west of County Highway 161, and is approximately 225 feet long and comprises 0.04 acre within the project boundary. The eleventh stream (Waterway #11) is located in the northern portion of the project area, west of County Highway 161, and is approximately 175 feet long and comprises 0.03 acre within the project boundary. The twelfth stream (Waterway #12) is located near the southeastern corner of the project area and is approximately 50 feet long and comprises 0.01 acre within the project boundary. The thirteenth stream (Waterway #13) is located in the northern portion of the project area, west of County Highway 161, and is approximately 350 feet long and comprises 0.08 acre within the project boundary. The fourteenth stream (Waterway #15) is located in the northern portion of the project area, east of County Highway 161, and is approximately 225 feet long and comprises 0.04 acre within the project boundary. The fifteenth stream (Waterway #16) is located near the southeastern corner of the project area and is

approximately 150 feet long and comprises 0.01 acre within the project boundary. The sixteenth stream (Waterway #17) is located east of County Highway 161 and is approximately 100 feet long and comprises 0.02 acre within the project boundary. The seventeenth stream (Waterway #18) is located near the southwestern corner of the project area and is approximately 70 feet long and comprises 0.01 acre within the project boundary.

The first wetland (Wetland #1) is located near the northern tip of the project area, east of County Highway 161, and is approximately 0.22 acre within the project boundary. The second wetland (Wetland #2) is located near the northern tip of the project area, east of County Highway 161, and is approximately 0.80 acre within the project boundary. The third wetland (Wetland #3) is located in the northern portion of the project area, east of County Highway 161, and is approximately 12.51 acres within the project boundary. The fourth wetland (Wetland #4) is located in the northern portion of the project area, east of County Highway 161, and is approximately 5.19 acres within the project boundary. The fifth wetland (Wetland #6) is located in the northern portion of the project area, east of County Highway 161, and is approximately 0.08 acre within the project boundary. The sixth wetland (Wetland #7) is located in the northern portion of the project area, east of County Highway 161, and is approximately 0.33 acre within the project boundary. The seventh wetland (Wetland #8) is located near the southeastern corner of the project area and is approximately 0.86 acre within the project boundary. The eighth wetland (Wetland #9) is located in the southern portion of the project area, east of County Highway 161, and is approximately 2.8 acres within the project boundary. The ninth wetland (Wetland #10) is located in the southern portion of the project area, west of County Highway 161, and is approximately 6.43 acres within the project boundary. The tenth wetland (Wetland #12) is located near the southwestern corner of the project area and is approximately 13.75 acres within the project boundary. The eleventh wetland (Wetland #13) is located in the northern portion of the project area, west of County Highway 161, and is approximately 5.72 acres within the project boundary. The twelfth wetland (Wetland #14) is located in the northern portion of the project area, west of County Highway 161, and is approximately 0.14 acre within the project boundary. The thirteenth wetland (Wetland #15) is located in the northern portion of the project area, west of County Highway 161, and is approximately 0.67 acre within the project boundary. The fourteenth wetland (Wetland #16) is located in the northern portion of the project area, west of County Highway 161, and is approximately 0.74 acre within the project boundary. The fifteenth wetland (Wetland #20) is located near the eastern edge of the project area, adjacent to the Neversink River, and is approximately 0.07 acre within the project boundary. The sixteenth wetland (Wetland #21) is located in the northern portion of the project area, east of County Highway 161, and is

approximately 0.05 acre within the project boundary. The seventeenth wetland (Wetland #22) is located in the northern portion of the project area, west of County Highway 161, and is approximately 0.65 acre within the project boundary. The eighteenth wetland (Wetland #23) is located near the eastern edge of the project area, adjacent to the Neversink River, and is approximately 9.09 acres within the project boundary.

With the exception of the Neversink River (Waterway #1) which is considered to be below the headwaters, all the streams and wetlands within the project boundary are considered to be above the headwaters.

It should be noted that, in light of the recent U.S. Supreme Court decision (Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, No. 99-1178, January 9, 2001), the remainder of the streams and wetlands (Waterway #14, Wetland #5, Wetland #11, Wetland #17, Wetland # 18, Wetland #19, and Basin #3) shown on the above referenced drawing do not meet the current criteria of waters of the United States under Section 404 of the Clean Water Act. The Court ruled that isolated, intrastate waters can no longer be considered waters of the United States, based solely upon their use by migratory birds.

In addition, Basin #1, Basin #2, Basin #4, and Basin #5 shown on the above referenced drawing are currently utilized as catch-basins for the actively mined site, and as such are not considered waters of the United States.

This determination regarding the delineation shall be considered valid for a period of five years from the date of this letter. Enclosed is a Notification of Administrative Appeal Options which provides information on your acceptance of this approved jurisdictional determination.

It is strongly recommended that the development of the site be carried out in such a manner as to avoid as much as possible the discharge of dredged or fill material into the delineated waters of the United States. If the activities proposed for the site involve such discharges, authorization from this office may be necessary prior to the initiation of the proposed work. The extent of such discharge of fill will determine the level of authorization that would be required.

If any questions should arise concerning this matter, please contact Randy English, of my staff, at (212) 264-0184.

Sincerely,

George Nieves
Chief, Western Permits Section

Enclosure

cf: NYSDEC - Region 3
Town of Thompson

Appendix I

Air Quality and Noise Report

TETRA TECH

AIR QUALITY AND NOISE STUDY FOR THE STOCKBRIDGE-MUNSEE CASINO FINAL EIS

THOMPSON, NEW YORK

November 2011

TECH environmental

FOCUSED KNOWLEDGE. REAL SOLUTIONS.

AIR QUALITY AND NOISE STUDY FOR THE STOCKBRIDGE-MUNSEE CASINO FINAL EIS

THOMPSON, NEW YORK

Prepared for:

Tetra Tech
One Grant Street
Framingham, MA 01701

Prepared by:

Tech Environmental, Inc.
303 Wyman Street, Suite 295
Waltham, Massachusetts 02451

Revised November 22, 2011

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1.0 EXECUTIVE SUMMARY

Air quality and noise analyses were performed for the proposed Stockbridge-Munsee Casino in the Town of Thomson (off of Route 161, 3 miles north of Exit 107 off of Route 17). Two build cases were analyzed: 1) a Build case representing the proposed Stockbridge-Munsee Casino along with other background development projects including the Concord Hotel and Casino and Phase I of the Rock Hill Town Center, and 2) a Cumulative Build case representing the proposed Stockbridge-Munsee Casino along with other background development projects, the Concord Resort master plan, Rock Hill Center full build, and an assumed third local casino.

1.1 Air Quality

The objectives of this study were to establish existing air quality for the project area from the New York State Department of Environmental Conservation (NYS DEC) monitoring records, and to determine whether the operation of the Stockbridge-Munsee Casino will comply with the National Ambient Air Quality Standards (NAAQS). The NAAQS were established to protect public health and welfare with an adequate margin of safety.

Total potential emissions for Phase I and II fuel-burning equipment were calculated. Total Phase II potential emissions of air pollutants are below the thresholds that would require any federal pre-construction air quality permits. During the first year of operation, the project would not need to apply for a federal Title V operating permit. If the project were subject to New York State regulations, which it is not, a pre-construction NYS DEC "Air State Facility Permit" would be required since fuel-burning equipment with a capacity over 10×10^6 Btu/hour is proposed for installation.

On-site cogeneration is an option being considered for the hotel in Phase II of the Project, either with diesel reciprocating engines or combustion turbines, if pipeline natural gas becomes available at the site by that phase's 2018 build year. The present conceptual design of mechanical systems, because there is no pipeline natural gas, relies on purchase of all electricity from New York State Electric & Gas (NYSEG) and distillate oil-fired boilers to provide space heating and domestic hot water for the

buildings. The emission total for the cogeneration option indicates that the facility would need a federal pre-construction air permit under Non-Attainment New Source Review regulations if cogeneration is included in the project design.

A microscale carbon monoxide (CO) analysis was performed for three roadway intersections near the project site, considering worst-case traffic volumes and meteorological conditions. The modeling demonstrates that Existing, future No-Build, future Build and Cumulative Build case CO levels will be safely in compliance with the National Ambient Air Quality Standards (NAAQS) at all sensitive receptors near the intersections and the project site. A microscale air quality impact analysis was also performed for the pollutants nitrogen dioxide (NO_2), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$). The dispersion modeling demonstrates that Existing, future No-Build, future Build and Cumulative Build case levels of these pollutants will be safely in compliance with the National Ambient Air Quality Standards (NAAQS) at all sensitive receptors near the intersections and the project site.

A mesoscale emissions analysis was performed to estimate the impact of the proposed casinos on motor vehicle air pollutant emissions in Orange County. Emissions of the ozone precursors, volatile organic compounds (VOC) and oxides of nitrogen (NO_x), were calculated for major roadways in Orange County for the future No-Build, Build, and Cumulative Build cases. This analysis shows that the proposed project would increase countywide VOC and NO_x emissions, compared to the No-Build case, by only 0.2% and 0.5%, respectively. The project's effect on total countywide emissions is less than 1%. This change is insignificant and will not have a significant impact on ozone levels in Orange County.

In summary, the proposed Stockbridge-Munsee Casino in the Town of Thomson, New York will comply with all air quality standards, and will not adversely affect regional air quality.

1.2 Noise

The objectives of this study were: (1) to establish existing sound levels; (2) to predict maximum future sound levels for the peak hour of trip generation; and (3) to compare future sound levels in

the nearby residential and recreational areas to an appropriate sound level guideline. Details regarding the study methodology and the baseline monitoring program are provided in the DEIS. The revised traffic volumes presented in the FEIS have been used to update the acoustic modeling results of existing and future sound levels that were presented in the DEIS.

Future Build case sound levels were predicted with the Federal Highway Administration (FHWA) Traffic Noise Model (TNM) at three residences and two recreational locations, and the results are safely in compliance with the FHWA noise guideline for residential areas of 67 dBA (peak hour L_{eq}). The TNM results show that the traffic from the Cumulative Build case will increase sound levels by 1 dBA over the No-Build case at the three residences and the two recreational locations. Since this sound level change is less than 3 dBA, it will generally not be noticeable.

In summary, the proposed Stockbridge-Munsee Casino in the Town of Thomson, New York will not adversely affect community sound levels.

2.0 EXISTING AIR QUALITY CONDITIONS

2.1 Attainment Classification

The site is located in Sullivan County, New York. The State of New York, including Sullivan County, is part of the eleven-state Ozone Transport Region (OTR) established by the 1990 Clean Air Act Amendments to address high ozone levels in the northeast corridor stretching from Washington D.C. to Maine. More stringent air pollution control regulations apply in the OTR. Sullivan County is predominantly rural and is classified by U.S. EPA as an attainment or unclassifiable area for all of the criteria pollutants with National Ambient Air Quality Standards (NAAQS): particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO) and ozone. There are two 8-hour ozone standards, with the 2008 standard slightly more stringent than the 1997 standard. The 8-hour (1997) standard remains in effect as EPA undertakes rulemaking to address the transition to the 8-hour (2008) standard. In early 2011, EPA reconsidered the level of the 2008 ozone standard, but in September 2011 EPA decided to not change the 2008 standard. At present, EPA has classified Sullivan County as attainment for both the 1-hour and 8-hour (1997) ozone standards, and NYS DEC has recommended to EPA the same attainment classification for Sullivan County for the 8-hour (2008) standard. Orange County, which abuts Sullivan County to the east and through which much of the project traffic will travel, is an attainment or unclassified area for all criteria pollutants except ozone, for which it is classified by U.S. EPA as an ozone non-attainment area.

Air quality has improved significantly in New York State, and in Orange and Sullivan Counties, over the past three decades, with roughly a 98% reduction in ozone exceedance days statewide from 1976 to today.[1] The Stockbridge-Munsee Casino is fully analyzed in this report for air quality effects in conformance with all federal and state guidelines. The project is located in an ozone attainment area and does not have a significant effect on regional emissions considering the criteria in section 1.1 of the NYS DOT Environmental Procedures Manual. Thus, the Project will not measurably affect ozone levels in either Orange or Sullivan Counties.

[1] NYS DEC, "New York State Ambient Air Quality Report" for the years 2000-2009.

2.2 Summary of Representative Air Monitoring Data

Existing air quality for the site has been estimated using monitoring data reported by the NYS DEC to the U.S. EPA Aerometric Information Retrieval System (AIRS) for the most recent complete three-year period (2008 – 2010).[2] Monitoring data for $PM_{2.5}$, PM_{10}, NO_2, SO_2, CO and ozone are summarized in Table 2-1 along with the applicable National Ambient Air Quality Standards (NAAQS). The statistical measure accompanying each NAAQS concentration level is described in the footnotes to Table 2-1. Following NYS DEC policy, existing air quality for the site has been estimated using air monitoring data from NYS DEC continuous monitoring stations that are closest to the project site and are either located in a similar rural environment (representative) or in a suburban or urban area (conservative estimates since air pollution levels are higher in these areas than in rural areas). Data for the most recent year (2010) represent the existing conditions.

2.2.1 Particulate Matter (PM_{10} and $PM_{2.5}$) Concentrations

The closest NYS DEC monitoring station for PM_{10} is located at the Belleayre Mountain in Ulster County, approximately 55 km north of the project site. The location of this monitor is described as commercial-rural. The rural classification of this monitoring station justifies the use of this monitor as representative of the project modeling area for PM_{10}. NYS DEC ceased PM_{10} monitoring after the year 2004, and thus the data in Table 2-1 are the most recent and available data for the years 2002-2004. The existing 24-hour PM_{10} concentration is 37 $\mu g/m^3$ and complies with the PM_{10} standard.

The closest NYS DEC monitoring station for $PM_{2.5}$ is located at 55 Broadway in Newburgh, Orange County, approximately 52 km south-southeast of the project site. The location of this monitor is described as commercial-urban. The urban classification of this monitoring station justifies the use

[2] NYS DEC, "New York State Ambient Air Quality Report" for the year 2009, the EPA AirData web site http://www.epa.gov/oar/data/geosel.html for 2008 data, and EPA QuickLook data files for the year 2010 provided by Russ Twaddell of NYS DEC.

of this monitor as a conservative representation of the project modeling area for $PM_{2.5}$. As shown in Table 2-1, the existing 24-hour and annual $PM_{2.5}$ concentrations are 24 μg/m^3 and 8 μg/m^3, respectively, and these levels comply with the $PM_{2.5}$ standards.

2.2.2 Nitrogen Dioxide (NO_2) Concentrations

The closest NYS DEC monitoring station for NO_2 that has a land use similar to the project site, is located at Eisenhower Park in East Meadow (Nassau County), approximately 132 km southeast of the project site. The location of this monitor is described as commercial-suburban. The suburban classification of this monitoring station justifies the use of this monitor as a conservative representation of the project modeling area for NO_2. As shown in Table 2-1, the existing annual NO_2 concentration is 27 μg/m^3 and complies with the NO_2 standard. EPA established a 1-hour NO_2 standard that went into effect on April 12, 2010, defined as the 3-year average of 98%-tile daily maximum 1-hour levels with a limit of 100 ppb (188 μg/m^3). No monitoring data for this statistical measure are yet available, and EPA will be establishing a new network by January 2013 for the 1-hour standard.

2.2.3 Sulfur Dioxide (SO_2) Concentrations

The closest NYS DEC monitoring station for SO_2 is located at the Belleayre Mountain in Ulster County, New York, approximately 55 km north of the project site. The location of this monitor is described as commercial-rural. The rural classification of this monitoring station justifies the use of this monitor as representative of the project modeling area for SO_2. As shown in Table 2-1, the existing 3-hour, 24-hour, and annual SO_2 concentrations are 21 μg/m^3, 9 μg/m^3, and 1 μg/m^3, respectively, and all comply with the SO_2 standards. EPA established a 1-hour SO_2 standard on June 2, 2010, defined as the 3-year average of 99%-tile daily maximum 1-hour levels with a limit of 75 ppb (196 μg/m^3). No monitoring data for this statistical measure are yet available.

2.2.4 Carbon Monoxide (CO) Concentrations

Existing CO concentrations for the site were taken from the NYS DOT Environmental Procedures Manual[3] that lists 1-hour and 8-hour CO background concentrations for the Project area (Sullivan County – NYS DOT Region 9) of 3.1 ppm and 2.2 ppm, respectively. Using the NYS DOT rollback method (described in their Project Environmental Guidelines), the 1-hour and 8-hour CO background concentrations for the future year 2018 were determined to be 2.8 ppm and 2.0 ppm, respectively.

2.2.5 Ozone (O_3) Concentrations

The closest, representative NYS DEC monitoring station for ozone is located at the Belleayre` Mountain in Ulster County, New York, approximately 55 km north of the project site. The location of this monitor is described as commercial-rural. The rural classification of this monitoring station justifies the use of this monitor as most representative of the project site. As shown in Table 2-1, the existing (2010) 1-hour ozone concentration (the 4th-highest 1-hour level over a 3-year period) at this site is 161 $\mu g/m^3$. The other nearby NYS DEC ozone monitoring station is at Valley Central High School in Montgomery, Orange County, approximately 39 km southeast of the project site; that location is described as residential-suburban. The existing (2010) 1-hour ozone concentration at the Orange County site is 190 $\mu g/m^3$. Both of these measured levels comply with the 1-hour ozone standard of 235 $\mu g/m^3$.

As shown in Table 2-1, the existing (2010) 8-hour ozone concentration (the 3-year average of annual 4th-highest 8-hour levels) at the Ulster County monitoring site, which represents the project site, is 134 $\mu g/m^3$ and complies with the 8-hour standard set in 2008 of 147 $\mu g/m^3$. At the Orange County monitoring site, the existing (2010) 8-hour ozone concentration is 145 $\mu g/m^3$ and complies with the 8-hour standard of 147 $\mu g/m^3$.

[3] NYS DOT, "Environmental Procedures Manual, " Chapter 1.1, Air Quality, "Project Environmental Guidelines," January 2001, Table 8.

TABLE 2-1

SUMMARY OF REPRESENTATIVE NYS DEC AIR MONITORING DATA FOR THE STOCKBRIDGE-MUNSEE CASINO, THOMPSON NY ($\mu g/m^3$)

Pollutant	Monitor Name	Averaging Period	2008	2009	Existing Condition 2010	NAAQS
$PM_{2.5}$	55 Broadway Newburgh	24-hour Annual	28 10	26 9	**24** **8**	35 15
PM_{10}	Belleayre Mountain Ulster County	24-hour	41	34	**37**	150
NO_2	Eisenhower Park East Meadow	Annual	32	30	**27**	100
SO_2	Belleayre Mountain Ulster County	3-hour 24-hour Annual	29 21 3	21 16 2	**21** **9** **1**	1,300 365 80
CO	NYS DOT Data	1-hour 8-hour	3.1 2.2	3.1 2.2	**3.1** **2.2**	35 9
Ozone	Belleayre Mountain Ulster County	1-hour	169	163	**161**	235
	Valley Central H. S. Orange County	1-hour	227	227	**190**	235
	Belleayre Mountain Ulster County	8-hour	143	135	**134**	147 (2008) 157 (1997)
	Valley Central H.S. Orange County	8-hour	158	149	**145**	147 (2008) 157 (1997)

Notes: For 24-hour $PM_{2.5}$, the EPA design value is the 3-year average of 98%-tile levels. For 24-hour PM_{10}, the reported data are 2nd-high values for the period of 2002-2004. For 3-hour and 24-hour SO_2, the reported numbers are 2nd-high concentrations. CO concentrations are NYS DOT values for Sullivan County in ppm. Ozone concentrations are EPA design values: 4th highest 1-hour levels over a 3-year period, and the 3-year average of annual 4th-highest 8-hour levels.

3.0 MICROSCALE AIR QUALITY ANALYSES

A microscale carbon monoxide (CO) analysis was performed for three roadway intersections near the site with the potential to be impacted by the Proposed Action. The NYS DOT Environmental Procedures Manual[4] was followed in conducting the analysis. Maximum 1-hour and 8-hour CO concentrations were predicted for the 2010 Existing, 2018 No-Build, 2018 Build, and 2018 Cumulative Build conditions using the U.S. EPA CAL3QHC Version 2 microscale dispersion model.

Additionally, a microscale air quality analysis was performed for nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and particulate matter (PM_{10} and $PM_{2.5}$) for the same roadways and receptors. Typically, microscale air quality analyses are not performed for these pollutants; therefore, the NYS DOT does not provide specific guidance for performing microscale analyses for NO_2, SO_2, PM_{10} and $PM_{2.5}$. All applicable guidance from the NYS DOT and the U.S. EPA was followed for the modeling of these additional air pollutants.

A microscale air quality analysis was not performed for ozone. This air pollutant is not directly emitted by motor vehicles, but is formed in the atmosphere from a complex series of photochemical reactions involving oxides of nitrogen (NO_x) and volatile organic compounds (VOCs). These chemical reactions occur over time periods and distances that are too large to represent with microscale air quality modeling; therefore, it is not possible to perform a microscale impact analysis for ozone.

3.1 Intersection Selection

All signalized and unsignalized intersections in the traffic study area that are predicted to operate at Level of Service (LOS) D or worse for the future build or cumulative build cases were analyzed. Three intersections met this criterion, including the intersection of the main project site driveway

[4]NYS DOT, "Environmental Procedures Manual, " Chapter 1.1, Air Quality, "Project Environmental Guidelines," January 2001.

with County Highway 161. The air quality analysis included the following three intersections (see Figures 3-1 to 3-4):

- Old Route 17/County Highway 161 – Unsignalized (All cases). Note: Figure 3-1 shows the geometry of this intersection for the existing and no-build cases; while Figure 3-2 shows how this intersection will be configured for the Build cases.
- County Highway 161/Route 17 WB Off-Ramp – Unsignalized (All cases).
- County Highway 161/Main Site Driveway – (Build cases only) Signalized.

The 2018 Build condition includes all of the roadway improvements proposed as traffic mitigation measures for the Proposed Action. These improvements include: adding exclusive EB and SB left turn lanes at the intersection of County Highway 161 and Old Route 17; adding a lane in each direction to County Highway 161 between the main site driveway and Interchange 107 on Route 17; minor changes to the configuration of the intersection County Highway 161/Route 17 WB off-ramp, and modifying the intersection of County Highway 161/Old County Road such that County Highway 161 intersects with Foss Road.

Two build cases were analyzed: 1) a Build case representing the proposed Stockbridge-Munsee Casino along with other background development projects including the Concord Hotel and Casino and Phase I of the Rock Hill Town Center,, and 2) a Cumulative Build case representing the proposed Stockbridge-Munsee Casino along with other background development projects, the Concord Resort master plan, Rock Hill Town Center full build, and an assumed third local casino. The Cumulative Build case is the case with the largest traffic volumes on the area roadways.

3.2 Emission Factors

Table 3-1 shows the motor vehicle emission rates used for the microscale air quality analyses. Table 3-1 shows that the motor vehicle emission rates for CO, NO_x, PM_{10} and $PM_{2.5}$ decreased between 2010 and 2018. This is a result of regulations that have required emission rates for new motor vehicles to decrease with time. The emission rates for SO_2 in 2010 and 2018 are the same because the sulfur content of gasoline (30 ppm) and diesel fuel (15 ppm) are the same for both years in MOBILE6.2.

3.2.1 CO

Carbon monoxide emission factors were taken from Table EF4 (revised January 2009) of the NYS DOT Environmental Procedures Manual.[5] These emission factors were generated by the NYS DOT using the U.S. EPA MOBILE6 emissions model and represent Sullivan County (NYS DOT Region 9) for arterial collector roadways. Vehicle approach speeds were estimated by TetraTech for the peak hour. The CO emission factors used in the CAL3QHC dispersion model are summarized in Table 3-1. The spreadsheet used to calculate the CO emissions rates from the vehicle distribution and emission factor tables is included in the Air Quality Appendix.

3.2.2 NO_x, SO_2, PM_{10} and $PM_{2.5}$

Emission factors for total oxides of nitrogen (NO_x) were obtained from the NYS DOT.[6] Tables showing the NO_x emission rates generated by the NYS DOT with the MOBILE6 model for the years 2010 and 2018 are included in the Air Quality Appendix. Even though the majority of NO_x emitted by motor vehicles is in the form of nitric oxide (NO) and very little is emitted directly in the form of NO_2, the modeling conservatively assumed that 70% of the NO_x is in the form of NO_2. NO_x emission factors are shown in Table 3-1.

Emission factors for PM_{10} and $PM_{2.5}$ were obtained were obtained from the NYS DOT.[6] Tables showing the PM_{10} and $PM_{2.5}$ emission rates generated by the NYS DOT with the MOBILE6 model for the years 2010 and 2018 are included in the Air Quality Appendix. PM_{10} and $PM_{2.5}$ emission factors are shown in Table 3-1.

Emission factors for SO_2 for 2010 and 2018 were obtained from MOBILE6.2 model using model default options. MOBILE6.2 output is included in the Air Quality Appendix. SO_2 are shown in Table 3-1.

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[5]NYS DOT Internet Site, https://www.nysdot.gov/divisions/engineering/environmental-analysis/manuals-and-guidance/epm/repository/coeftab0.pdf, revised January 2009.

[6] NYS DOT Internet Site, https://www.nysdot.gov/divisions/engineering/environmental-analysis/mobil6, revised April 2008.

3.3 Background CO Concentrations

3.3.1 CO

The NYS DOT Environmental Procedures Manual recommends 1-hour and 8-hour CO background concentrations, for the year 2000 in Sullivan County, of 3.1 ppm and 2.2 ppm, respectively. These values were used to conservatively represent the background conditions for the year 2010. Considering traffic growth rate assumed in the traffic analysis and the NYS DOT recommended rollback method for projecting future background levels, the 1-hour and 8-hour background levels for the year 2018 were determined to be 2.8 ppm and 2.0 ppm, respectively.

3.3.2 NO_2, SO_2, PM_{10} and $PM_{2.5}$

Background concentrations for NO_2, SO_2, PM_{10} and $PM_{2.5}$ are based on NYS DEC air monitoring data, and are presented in Section 2.2 (Table 2-1). To be conservative, the rollback method was not applied to reduce these background concentrations for the 2018 cases.

3.4 Traffic Data

TetraTech provided traffic volumes for three peak periods: 1) Friday afternoon (4 –5 p.m.), 2) Saturday evening (8 – 9 p.m.), and 3) Sunday afternoon (4 –5 p.m.). These are the periods when total intersection volumes (background plus project traffic) are highest. Each intersection was analyzed with traffic data corresponding to the peak period with the largest intersection delay (i.e., worst LOS).

3.5 CAL3QHC Model Inputs

The dispersion modeling was performed with U.S. EPA CAL3QHC (Version 2) model. The following meteorological inputs were used with the CAL3QHC Model:

Wind Speed	= 1 m/s
Surface roughness length	= 108 cm
Atmospheric stability	= E for a rural environment
Wind directions	= 5° increments from 0° to 355°

Mixing height	=	1,000 meters
Persistence factor (1 hour to 3 hours)	=	0.9
Persistence factor (1 hour to 8 hours)	=	0.72
Persistence factor (1 hour to 24 hours)	=	0.4
Persistence factor (1 hour to annual)	=	0.08
NO_x to NO_2 Conversion Factor	=	0.7

The persistence factors are used to convert one-hour averages to averages for longer periods of time. These factors take into account that the worst-case meteorological conditions used to predict the peak one-hour impacts will not persist for longer periods of time; therefore, the air quality impacts will be lower for larger averaging periods. All CAL3QHC model output is included in the Air Quality Appendix.

3.6 Modeled Receptors

A total of 88 receptor points were used to model the three intersections. Receptors were placed along each modeled roadway at a distance of approximately 3 meters (10 feet) from the roadway edge, at a height of 6 feet. For those roadway segments where the build case would result in a widening of the road, the receptors were placed 3 meters from the build case roadway edge. Air quality impacts at locations further from the roadways will be less. Figures 3-1 to 3-4 show the location of each receptor relative to each modeled roadway, for each of the three intersections (Note: Figure 3-1 shows the Existing and No-Build configuration for the Old Route 17 /County Highway 161 intersection and Figure 3-2 shows this intersection for the Build cases).

3.7 Results

Tables 3-2 through 3-10 summarize the results of the microscale analysis for each air pollutant. The results for CO show some improvements in air quality between 2010 and 2018. These improvements result as older motor vehicles are replaced with new vehicles that are required to meet more-strict emissions standards. The maximum predicted concentration at each intersection for the Build case and either the same or are slightly lower then the impacts predicted for the Cumulative Build case.

3.7.1 CO

The CAL3QHC microscale modeling results for CO are summarized in Tables 3-2 and 3-3 for the 1-hour and 8-hour CO concentrations, respectively. The maximum predicted 2018 Build 1-hour CO concentration of 4.0 ppm is less than the NAAQS of 35.0 ppm. The maximum 2018 Build 8-hour CO concentration of 2.8 ppm is less than the NAAQS of 9.0 ppm. The maximum predicted CO concentrations for the 2018 Build case are predicted to occur at the northeast corner of the intersection of County Highway 161 and Main Site Driveway. The maximum predicted 1-hour and 8-hour CO concentrations for the Cumulative Build case are the same or slightly higher than the Build case. The maximum predicted CO concentrations for the 2018 Cumulative Build case are predicted to occur at the intersection of Old Route 17 and County Highway 161, along the north side of the Old Route 17, east of County Highway 161.

3.7.2 NO_2

The CAL3QHC microscale modeling results for NO_2 are summarized in Table 3-4 for the annual concentrations. The maximum 2018 Build annual NO_2 concentration of 34.6 $\mu g/m^3$ is less than the NAAQS of 100 $\mu g/m^3$. The maximum predicted annual NO_2 concentration for the 2018 Build case is predicted to occur at the intersection of County Highway 161 and Route 17 WB Off-Ramp, along the east side of the Route 17 WB Off-Ramp, and at the northeast corner of the intersection of County Highway 161 and Main Site Driveway. The maximum predicted annual NO_2 concentrations for the Cumulative Build case are essentially the same as the concentrations predicted for the Build case.

3.7.3 SO_2

The CAL3QHC microscale modeling results for SO_2 are summarized in Tables 3-5 through 3-7 for the 3-hour, 24-hour, and annual SO_2 concentrations. The maximum 2018 Build 3-hour SO_2 concentration of 22.8 $\mu g/m^3$ is less than the NAAQS of 1,300 $\mu g/m^3$. The maximum 2018 Build 24-hour SO_2 concentration of 16.8 $\mu g/m^3$ is less than the NAAQS of 365 $\mu g/m^3$. The maximum 2018 Build annual SO_2 concentration of 2.2 $\mu g/m^3$ is less than the NAAQS of 80 $\mu g/m^3$. The maximum predicted SO_2 concentrations for the 2018 Build case are predicted to occur at the northeast corner of the intersection of County Highway 161 and the Main Site Driveway, and at the intersection of

County Highway 161 and Route 17 WB Off-Ramp, along the east side of the Route 17 WB Off-Ramp. The maximum predicted 3-hour, 24-hour, and annual SO_2 concentrations for the Cumulative Build case are same as the Build case, except for the Old Route 17 and County Highway 161 intersection.

3.7.4 PM_{10}

The CAL3QHC microscale modeling results for PM_{10} are summarized in Table 3-8 for the 24-hour PM_{10} concentration. The maximum 2018 Build 24-hour PM_{10} concentration of 39.4 $\mu g/m^3$ is less than the NAAQS of 150 $\mu g/m^3$. The maximum predicted PM_{10} concentrations for the 2018 Build case are predicted to occur at the intersection of County Highway 161 and Route 17 WB Off-Ramp, along the east side of the Route 17 WB Off-Ramp, and the northeast corner of the intersection of County Highway 161 and Main Site Driveway. The maximum predicted 24-hour PM_{10} concentrations for the Cumulative Build case are essentially the same as for the Build case.

3.7.5 $PM_{2.5}$

The CAL3QHC microscale modeling results for $PM_{2.5}$ are summarized in Tables 3-9 and 3-10 for the 24-hour and annual $PM_{2.5}$ concentrations, respectively. The maximum 2018 Build 24-hour $PM_{2.5}$ concentration of 27.6 $\mu g/m^3$ is less than the NAAQS of 35 $\mu g/m^3$. The maximum 2018 Build annual $PM_{2.5}$ concentration of 9.3 $\mu g/m^3$ is less than the NAAQS of 15 $\mu g/m^3$. The maximum predicted $PM_{2.5}$ concentrations for the 2018 Build case are predicted to occur at the northeast corner of the intersection of County Highway 161 and the Main Site Driveway. The maximum predicted 24-hour and annual $PM_{2.5}$ concentrations for the Cumulative Build case are essentially the same as for the Build case.

These modeling results demonstrate that the predicted worst-case concentrations of all modeled air pollutants at all receptor locations will be safely in compliance with the NAAQS. Therefore, the worst case traffic generated by the proposed Stockbridge-Munsee Casino will not cause or contribute to any violations of the NAAQS, and will not adversely affect air quality.

TABLE 3-1

MOTOR VEHICLE EMISSION RATES
USED IN THE MICROSCALE AIR QUALITY ANALYSES

Speed	CO		NO_2		SO_2		PM_{10}		$PM_{2.5}$	
	2010	2018	2010	2018	2010	2018	2010	2018	2010	2018
Idle (zero)	56.1	37.0	3.63	1.50	0.023	0.023	0.098	0.084	0.087	0.077
5 mph	13.0	8.7	1.28	0.53	0.009	0.009	0.036	0.028	0.021	0.013
25 mph	5.2	3.5	0.80	0.33	0.009	0.009	0.036	0.028	0.021	0.013
30 mph	4.9	3.4	0.77	0.32	0.009	0.009	0.036	0.028	0.021	0.013
40 mph	5.2	3.7	0.78	0.32	0.009	0.009	0.036	0.028	0.021	0.013

Emission rates for idle (0 mph) are in grams/hour, and rates for speeds of 5 to 40 mph are in grams/mile.

Emission rates for CO are from the latest available Table EF4 (revised January 2009 with MOBILE6) of the NYS DOT Environmental Procedures Manual (see the Air Quality Appendix).

Emission rates for NO_x are from the latest available NYS DOT MOBILE6 Emission Factor Tables for Regional, Mesoscale, and CMAQ Project Emission Calculations – Part A for Sullivan County (see the Air Quality Appendix), revised April 2008.

Emission rates for SO_2 are from the MOBILE6.2 model (see the Air Quality Appendix).

TABLE 3-2

MAXIMUM PREDICTED ONE-HOUR CARBON MONOXIDE CONCENTRATIONS AT SENSITIVE RECEPTORS PLUS BACKGROUND (ppm)

Intersection	**2010 Existing**	**2018 No-Build**	**2018 Build**	**2018 Cumulative Build**
Old Route 17/County Highway 161	3.3	3.2	3.6	4.5
County Highway 161/Route 17 WB Off-Ramp	3.6	3.5	3.8	3.8
County Highway 161/Main Site Driveway	N/A	N/A	4.0	4.3
NAAQS:	**35**	**35**	**35**	**35**

Notes: The results include background CO concentration of 3.1 ppm in 2010, and 2.8 ppm in 2018.
N/A = Not Applicable – This intersection does not exist for the Existing or No-Build cases.

TABLE 3-3

MAXIMUM PREDICTED EIGHT-HOUR CARBON MONOXIDE CONCENTRATIONS AT SENSITIVE RECEPTORS PLUS BACKGROUND (ppm)

Intersection	**2010 Existing**	**2018 No-Build**	**2018 Build**	**2018 Cumulative Build**
Old Route 17/County Highway 161	2.3	2.3	2.6	3.2
County Highway 161/Route 17 WB Off-Ramp	2.6	2.6	2.7	2.7
County Highway 161/Main Site Driveway	N/A	N/A	2.8	3.1
NAAQS:	**9**	**9**	**9**	**9**

Notes: The results include background CO concentration of 2.2 ppm in 2010, and 2.0 ppm in 2018.
N/A = Not Applicable – This intersection does not exist for the Existing or No-Build cases.

TABLE 3-4

MAXIMUM PREDICTED ANNUAL NITROGEN DIOXIDE (NO_2) CONCENTRATIONS AT SENSITIVE RECEPTORS PLUS BACKGROUND ($\mu g/m^3$)

Intersection	2010 Existing	2018 No-Build	2018 Build	2018 Cumulative Build
Old Route 17/County Highway 161	31.3	30.7	32.9	35.2
County Highway 161/Route 17 WB Off-Ramp	34.0	32.0	34.6	34.8
County Highway 161/Main Site Driveway	N/A	N/A	34.6	35.7
NAAQS:	**100**	**100**	**100**	**100**

Notes: The results include a background annual NO_2 concentration of 30 $\mu g/m^3$ in 2010 and 2018.
N/A = Not Applicable – This intersection does not exist for the Existing or No-Build cases.

TABLE 3-5

MAXIMUM PREDICTED 3-HOUR SULFUR DIOXIDE (SO_2) CONCENTRATIONS AT SENSITIVE RECEPTORS PLUS BACKGROUND ($\mu g/m^3$)

Intersection	2010 Existing	2018 No-Build	2018 Build	2018 Cumulative Build
Old Route 17/County Highway 161	21.9	21.9	21.9	22.8
County Highway 161/Route 17 WB Off-Ramp	21.9	21.9	22.8	22.8
County Highway 161/Main Site Driveway	N/A	N/A	22.8	22.8
NAAQS:	**1,300**	**1,300**	**1,300**	**1,300**

Notes: The results include a background 3-hour SO_2 concentration of 21 $\mu g/m^3$ in 2010 and 2018.
N/A = Not Applicable – This intersection does not exist for the Existing or No-Build cases.

TABLE 3-6

MAXIMUM PREDICTED 24-HOUR SULFUR DIOXIDE (SO_2) CONCENTRATIONS AT SENSITIVE RECEPTORS PLUS BACKGROUND ($\mu g/m^3$)

Intersection	2010 Existing	2018 No-Build	2018 Build	2018 Cumulative Build
Old Route 17/County Highway 161	16.4	16.4	16.4	16.8
County Highway 161/Route 17 WB Off-Ramp	16.4	16.4	16.8	16.8
County Highway 161/Main Site Driveway	N/A	N/A	16.8	16.8
NAAQS:	**365**	**365**	**365**	**365**

Notes: The results include a background 24-hour SO_2 concentration of 16 $\mu g/m^3$ in 2010 and 2018.
N/A = Not Applicable – This intersection does not exist for the Existing or No-Build cases.

TABLE 3-7

MAXIMUM PREDICTED ANNUAL SULFUR DIOXIDE (SO_2) CONCENTRATIONS AT SENSITIVE RECEPTORS PLUS BACKGROUND ($\mu g/m^3$)

Intersection	2010 Existing	2018 No-Build	2018 Build	2018 Cumulative Build
Old Route 17/County Highway 161	2.1	2.1	2.1	2.2
County Highway 161/Route 17 WB Off-Ramp	2.1	2.1	2.2	2.2
County Highway 161/Main Site Driveway	N/A	N/A	2.2	2.2
NAAQS:	**80**	**80**	**80**	**80**

Notes: The results include a background annual SO_2 concentration of 2 $\mu g/m^3$ in 2010 and 2018.
N/A = Not Applicable – This intersection does not exist for the Existing or No-Build cases.

TABLE 3-8

MAXIMUM PREDICTED 24-HOUR COARSE PARTICULATE MATTER (PM_{10}) CONCENTRATIONS AT SENSITIVE RECEPTORS PLUS BACKGROUND ($\mu g/m^3$)

Intersection	2010 Existing	2018 No-Build	2018 Build	2018 Cumulative Build
Old Route 17/County Highway 161	37.4	37.4	38.6	39.4
County Highway 161/Route 17 WB Off-Ramp	38.2	38.2	39.4	39.4
County Highway 161/Main Site Driveway	N/A	N/A	39.4	39.8
NAAQS:	**150**	**150**	**150**	**150**

Notes: The results include a background 24-hour PM_{10} concentration of 37 $\mu g/m^3$ in 2010 and 2018.
N/A = Not Applicable – This intersection does not exist for the Existing or No-Build cases.

TABLE 3-9

MAXIMUM PREDICTED 24-HOUR FINE PARTICULATE MATTER ($PM_{2.5}$) CONCENTRATIONS AT SENSITIVE RECEPTORS PLUS BACKGROUND ($\mu g/m^3$)

Intersection	2010 Existing	2018 No-Build	2018 Build	2018 Cumulative Build
Old Route 17/County Highway 161	26.4	26.4	26.8	27.6
County Highway 161/Route 17 WB Off-Ramp	26.8	26.4	27.2	27.2
County Highway 161/Main Site Driveway	N/A	N/A	27.6	28.0
NAAQS:	**35**	**35**	**35**	**35**

Notes: The results include a background 24-hour $PM_{2.5}$ concentration of 26 $\mu g/m^3$ in 2010 and 2018.
N/A = Not Applicable – This intersection does not exist for the Existing or No-Build cases.

TABLE 3-10

MAXIMUM PREDICTED ANNUAL FINE PARTICULATE MATTER ($PM_{2.5}$) CONCENTRATIONS AT SENSITIVE RECEPTORS PLUS BACKGROUND ($\mu g/m^3$)

Intersection	**2010 Existing**	**2018 No-Build**	**2018 Build**	**2018 Cumulative Build**
Old Route 17/County Highway 161	9.1	9.1	9.2	9.3
County Highway 161/Route 17 WB Off-Ramp	9.2	9.1	9.2	9.2
County Highway 161/Main Site Driveway	N/A	N/A	9.3	9.4
NAAQS:	**15**	**15**	**15**	**15**

Notes: The results include a background annual $PM_{2.5}$ concentration of 9 $\mu g/m^3$ in 2010 and 2018.
N/A = Not Applicable – This intersection does not exist for the Existing or No-Build cases.

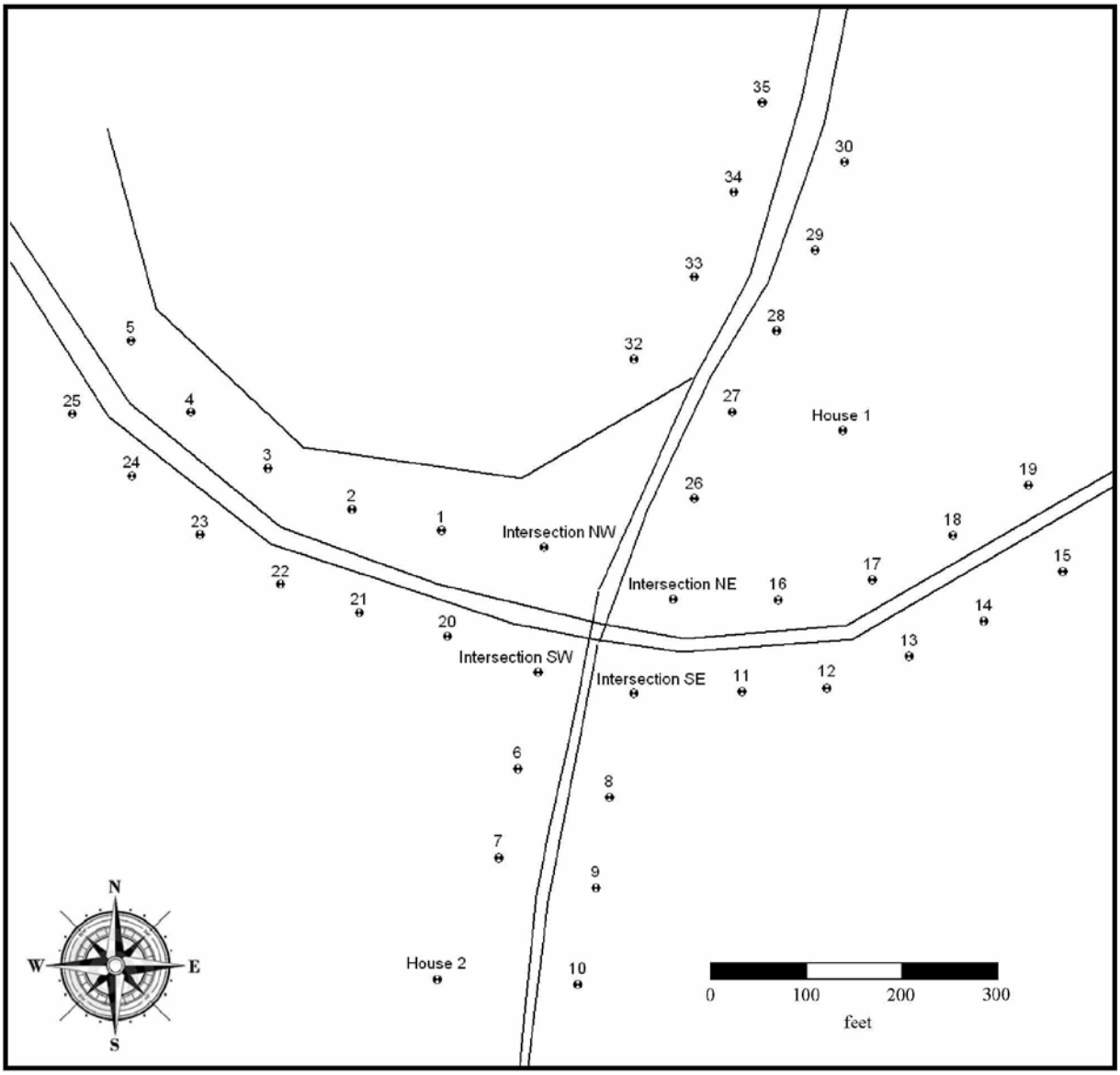

Figure 3-1. Modeled Roadways and Receptors –Old Route 17/County Highway 161 (Existing and No-Build Cases).

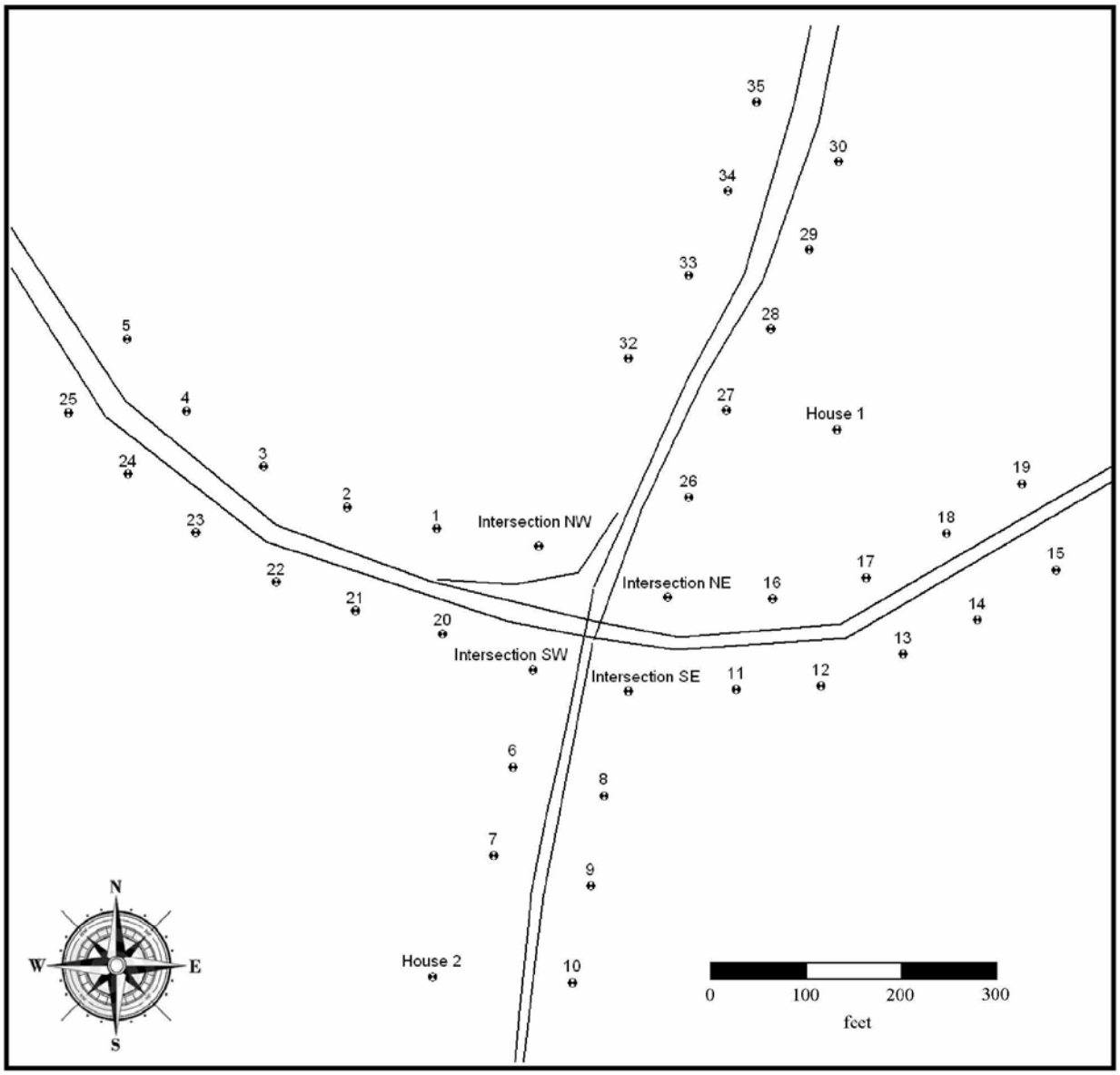

Figure 3-2. Modeled Roadways and Receptors – Old Route 17/County Highway 161 (Build Cases).

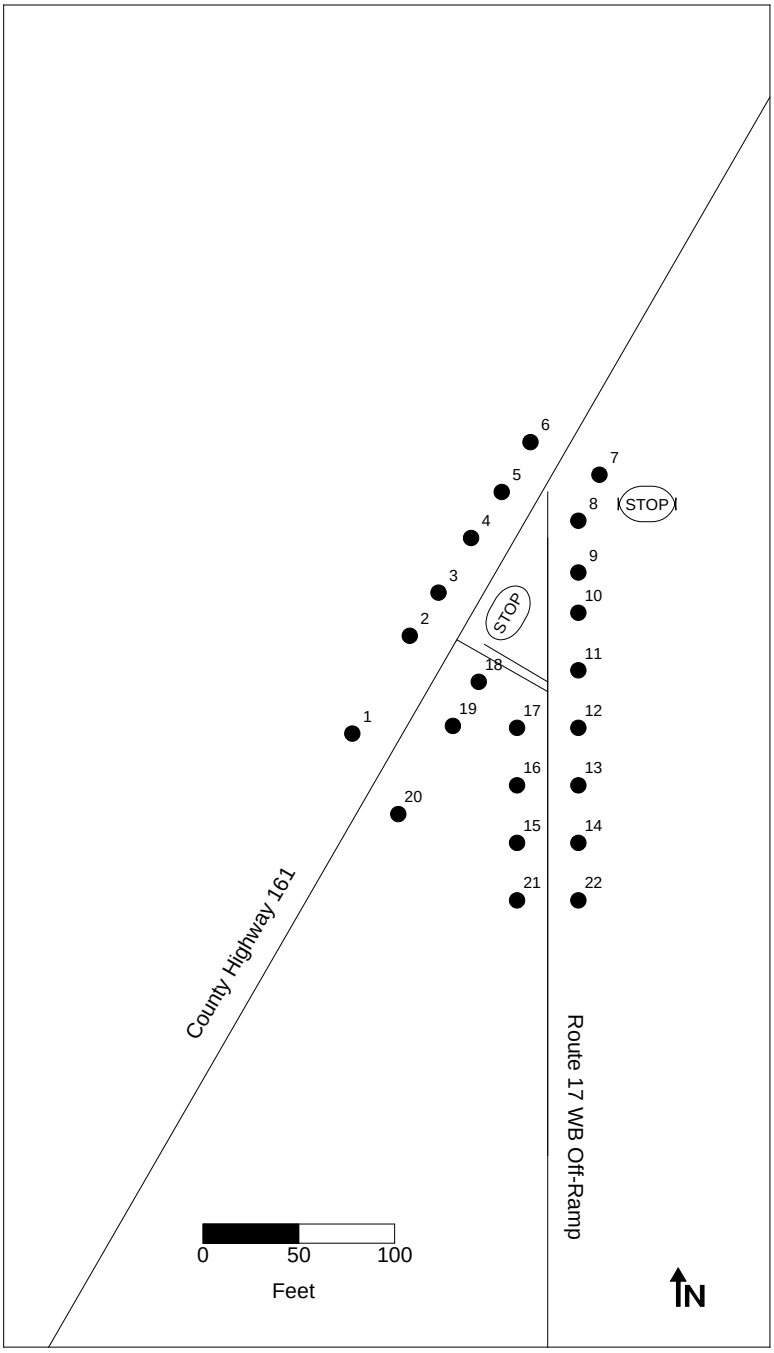

Figure 3-3. Modeled Roadways and Receptors – County Highway 161/Route 17 WB Off-Ramp (All Cases).

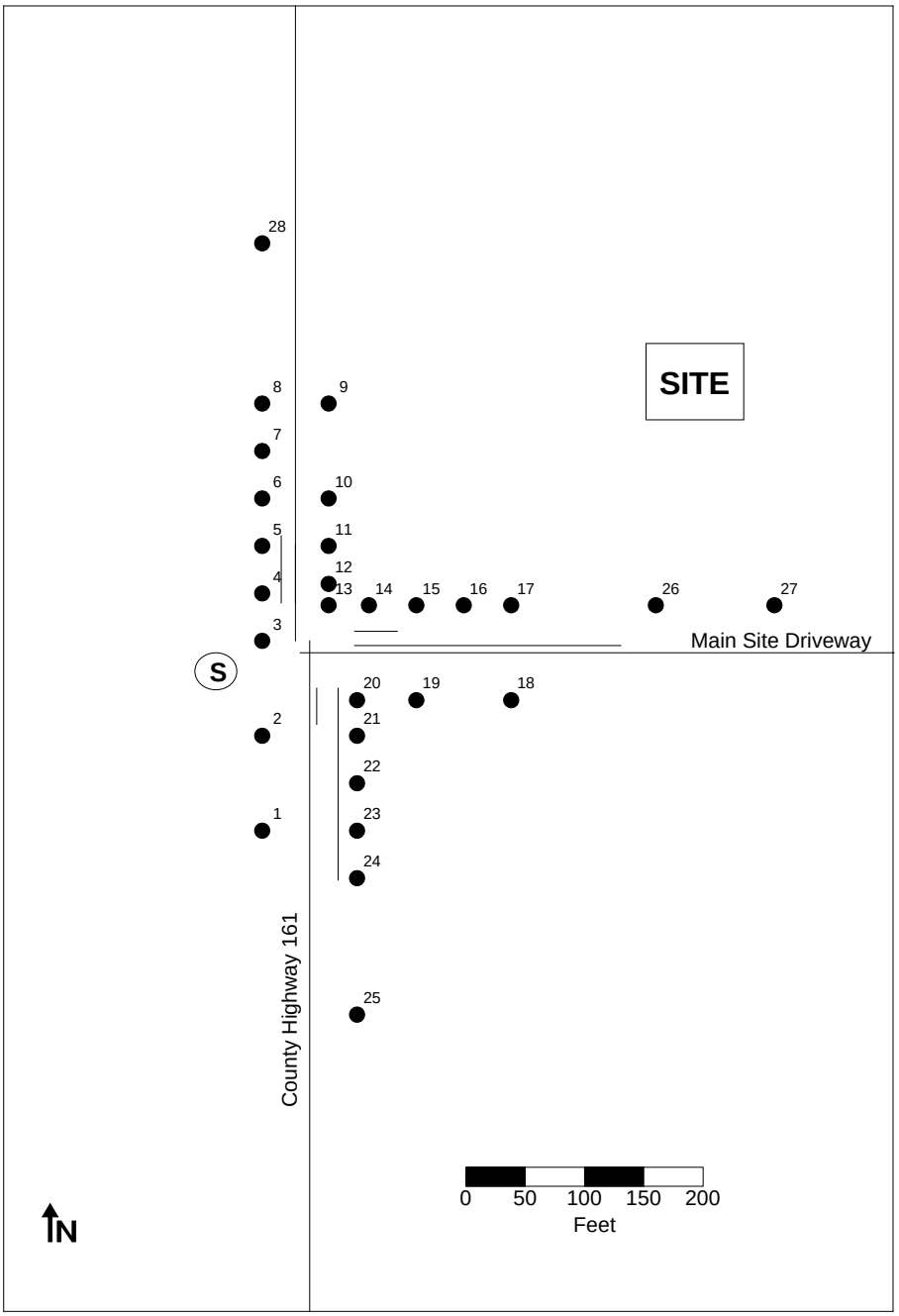

Figure 3-4. Modeled Roadways and Receptors – County Highway 161/Main Site Driveway.

4.0 STATIONARY SOURCE INVENTORY AND PERMITTING REQUIREMENTS

4.1 Stationary Source Emissions

Fuel-burning equipment for Phase I of the project would be equivalent to that at the existing Mohegan Sun casino in Uncasville, Connecticut, and Phase II of the project is assumed to be that associated with the addition of a 750-room hotel. The Stockbridge-Munsee Casino will use #2 oil (0.3% sulfur) for both heating and electrical generation, and propane for cooking, since natural gas is not available at the site. Wherever possible, fuel-burning equipment will be selected that can burn either gas or oil, so that gas firing may be utilized in future years if a pipeline is extended into the area. The emission estimates in this EA assumed distillate oil for heating and electrical generation.

Phase I would require the following fuel-burning equipment:

- Commercial size boilers with a total heat input of 57 x 10^6 Btu/hour, firing 400 gallons #2 oil per hour and limited to 3,000 hours per year of operation.
- Emergency generators supplying a total of 5 MW of power, firing 400 gallons #2 oil per hour, limited to 50 hours per year of operation, and designed with ignition timing retard NO_x control.
- Kitchen use of 88 x 10^6 cubic feet of propane for cooking.

The ***additional*** equipment installed in Phase II would be:

- One additional commercial size boiler with a heat input of 30 x 10^6 Btu/hour, firing 210 gallons #2 oil per hour and limited to 3,000 hours per year of operation.
- One additional emergency generator supplying 1.5 MW of power, firing 120 gallons #2 oil per hour, limited to 50 hours per year of operation.

Total potential emissions for Phase I and II fuel-burning equipment are summarized in Table 4-1. These calculations utilize vendor emission rates supplemented with emission factors from EPA's Publication AP-42.

4.2 Permitting Requirements

Since the site is in the Ozone Transport Region, a federal Non-Attainment New Source Review permit would be required if potential emissions of VOC exceeded 50 tons per year or potential emissions of NO_x exceeded 100 tons per year. A higher threshold of 100 tons of VOC per year would apply if the project site were not located in the Ozone Transport Region (see Section 2.1 for more details). Total Phase II potential emissions of these pollutants are below that threshold. The facility would require a federal PSD permit if potential emissions of any criteria pollutant exceeded 250 tons per year, classifying it as a new major source. Table 4-1 reveals that total Phase II potential emissions of all criteria pollutants are below 250 tons per year. Thus, the Stockbridge-Munsee Casino does not require any federal pre-construction air quality permits. During the first year of operation, the project would not need to apply for a federal Title V operating permit because potential emissions of all criteria pollutants are below 100 tons per year, and potential emissions of VOC are below 50 tons per year. If the project were subject to New York State regulations, which it is not, a pre-construction NYS DEC "Air State Facility Permit" would be required since fuel-burning equipment with a capacity over 10×10^6 Btu/hour is proposed for installation.

The project would consider switching from distillate oil to natural gas if gas becomes available to the site in the future. If fuel-burning equipment were switched over to natural gas, emissions of NO_x and VOC would stay about the same, emissions of CO would likely increase somewhat, and emissions of SO_2 and PM would decrease. The actual change in emissions from the project's stationary sources with a conversion to natural gas would depend on the equipment manufacturer and the combustion design.

On-site cogeneration is an option being considered for the hotel in Phase II of the Project, either with diesel reciprocating engines or combustion turbines, if pipeline natural gas becomes available at the site by that phase's 2018 build year. The present conceptual design of mechanical systems, because there is no pipeline natural gas, relies on purchase of all electricity from New York State Electric & Gas (NYSEG) and distillate oil-fired boilers to provide space heating and domestic hot water for the buildings. On-site storage of 100,000 gallons of distillate oil will be required along with on-site storage of 30,000 gallons of propane for cooking needs. In the event that NYSEG secures a

franchise from Columbia Gas and installs a distribution system serving portions of Sullivan County that include the Project site, the availability of pipeline gas would increase the possibility for some type of cogeneration system by eliminating additional fuel-oil trucking and storage to serve the electric generating equipment. Although such availability of pipeline anural gas is not now foreseeable, the feasibility of cogeneration for Phase II of the Project will nonetheless be assessed in the Project's detailed mechanical design. A total of 8 MW of electricity could be produced using four 2-MW diesel reciprocating engine generators, or one 6-MW combustion turbine generator plus one 2-MW diesel generator that would also serve as a black-start generator for the turbines.

Table 4-2 summarizes the potential air pollutant emissions for Phases I and II of the project assuming on-site cogeneration, using either natural gas or ultra-low sulfur diesel. Since uncontrolled NO_x emissions for the facility would exceed 100 tons per year, SCR control would be required and is assumed in the emissions totals shown in Table 4-2. The waste heat provided by cogeneration would displace some, but likely not all, of the heating load for the project. For a worst-case analysis, full boiler capacity is retained in the emission calculations. The emission totals in Table 4-2 reveal that the facility would likely need a federal pre-construction air permit under Non-Attainment New Source Review regulations if cogeneration is included in the design; a federal PSD permit would not be needed, and application for a federal Title V operating permit would be made in the first year of facility operation.

TABLE 4-1

TOTAL POTENTIAL EMISSIONS FROM STATIONARY SOURCE FUEL COMBUSTION (tons/year)

	NO_x	SO_2	CO	VOC	PM
Phase I Equipment					
Boilers	12.0	25.6	3.0	0.1	2.0
Generators	4.0	0.4	0.9	0.1	0.1
Kitchen	4.1	0.02	1.8	0.2	0.3
Total	20.1	26.0	5.7	0.4	2.4
Phase I & II Equipment					
Boilers	18.3	39.0	4.6	0.2	3.0
Generators	5.2	0.5	1.2	0.1	0.2
Kitchen	4.1	0.02	1.8	0.2	0.3
Total	27.6	39.5	7.6	0.5	3.5

TABLE 4-2

TOTAL POTENTIAL EMISSIONS FOR PHASES I & II FROM STATIONARY SOURCE FUEL COMBUSTION ASSUMING ON-SITE COGENERATION (tons/year)

	NO_x	SO_2	CO	VOC	PM
Reciprocating Engine Option					
Boilers	18.3	39.0	4.6	0.2	3.0
Generators	169.2	19.1	39.4	12.6	6.8
Kitchen	4.1	0.02	1.8	0.2	0.3
Total	191.6	58.1	45.8	13.0	10.1
Combustion Turbine Option					
Boilers	18.3	39.0	4.6	0.2	3.0
Combustion Turbine	14.9	13.2	30.2	8.6	9.2
Generator	42.3	4.8	9.9	3.2	1.7
Kitchen	4.1	0.02	1.8	0.2	0.3
Total	79.6	57.0	46.5	12.2	14.2

5.0 TRAFFIC NOISE IMPACT ANALYSIS

Traffic noise is directly related to traffic volumes. The revised traffic volumes presented in the FEIS have been used to update the TNM modeling results of existing and future sound levels that were presented in the DEIS. Details regarding the study methodology and the baseline monitoring program are provided in the DEIS. For the reader's convenience, the introductory Sections 5.1 and 5.2 are provided below. Updated noise modeling results are presented in Section 5.3.

5.1 Common Measures of Community Sound Levels

Noise is defined as "unwanted sound", which implies sound levels that are annoying or that disrupt activities people are engaged in. The human sense of hearing is subjective and highly variable among individuals. Noise regulations and guidelines set quantitative limits to the sound level (measurable with sound meters and predictable with computer models) in order to protect people from sound exposures that most would judge to be annoying or disruptive.

The unit of sound pressure is the decibel (dB). The decibel scale is logarithmic to accommodate the wide range of sound intensities to which the human ear is subjected. A property of the decibel scale is that the sound pressure levels of two separate sounds do not directly add. For example, if a sound of 70 dB is added to another sound of 70 dB, the total is only a 3-decibel increase (or 73 dB), not a doubling to 140 dB. In terms of the human perception of sound, a halving or doubling of loudness requires changes in the sound pressure level of about 10 dB, and for broadband sounds, 3 dB is the minimum perceptible change.[7] These levels of human response are summarized in Table 5-1.

Non-steady sound exposure in a community is commonly expressed in terms of the A-weighted sound level (dBA); A-weighting approximates the frequency response of the human ear. Levels of many sounds change from moment to moment. Some are sharp impulses lasting one second or less, while others rise and fall over much longer periods of time. There are various measures of sound pressure designed for different purposes. The following metrics are based on the A-weighted

[7] ASHRAE, 1989 ASHRAE Handbook--Fundamentals, p. 7.7, Atlanta, GA.

decibel and are typically used when evaluating environmental and source sound level measurement data:

L_{eq}, or Equivalent Level, is the steady-state sound level during a given amount of time that has the same acoustic energy as the fluctuating sound levels during that same period. This metric is commonly referred to as the average sound level.

L_{max}, or Maximum Level, represents the maximum 1 second sound level experienced during a given time period.

L_n, or "n" Percentile Level, is the statistical representation of changing sound levels. Since ambient levels vary with time, the Percentile Level is used to quantify the sound levels. This metric indicates that over a given time period, the fluctuating noise level was equal to or greater than the stated level for "n" percent of the time. Commonly used percentiles include the L_{10} and the L_{90}. An L_{90} of 50 dBA, for example, indicates that sound levels over a given period of time were greater than or equal to 50 dBA for 90 percent of the time. L_{90} is often used to describe the background ambient sound level. The L_{10} defines the peaks of the intermittent sounds and is commonly referred to as the intrusive sound level.

The acoustic environment in a rural area such as the project site results from numerous sources. The principal contributors are motor vehicle traffic on State Route 17, County Highway 161, and other local roadways. Typical sound levels associated with various activities and environments are presented in Table 5-2.

5.2 Sound Level Regulations and Guidelines

Since there are no local, state, or federal noise regulations with decibel limits applicable to the motor vehicles visiting the project site, an appropriate federal sound level criterion for residential areas was used. The Federal Highway Administration (FHWA) has published Noise Abatement Criteria (NAC) for residential areas stating that noise barriers are recommended to mitigate peak hour L_{eq} sound levels from a new highway project when they exceed a threshold of 67 dBA.[8] The FHWA guideline, a 1-hour L_{eq} of 67 dBA, was used to judge the effects of the proposed Casino on nearby residential and recreational areas.

[8] 23 Code of Federal Regulations, part 772.

5.3 Calculated Existing and Future Sound Levels

The Federal Highway Administration's (FHWA) Traffic Noise Model (TNM)[9] was used to evaluate the sound level impact from the project's traffic on sensitive receptors. The impacts from the traffic operating on County Highway 161, Old County Highway, State Route 17, Foss Road, and the future Site Driveway were included in the model simulation. The TNM modeling presented in the DEIS was updated to reflect changes in the predicted traffic volumes for the 2010 Existing case, the 2018 No-Build case, the 2018 Build case, and the 2018 Cumulative Build case, for peak hour of trip generation. The results of the updated traffic noise modeling are summarized in Table 5-3.

The TNM modeling results summarized in Table 5-3 demonstrate that the highest sound level predicted after the Casino is built under the 2018 Cumulative Build case (63 dBA) complies with the FHWA guideline for sound levels in residential areas (67 dBA).

The TNM modeling shows that the sound levels at the modeled receptors will increase only 1 dBA between the No-Build case and the Build or Cumulative Build case. Because the changes are less than 3 dBA, these results suggest that the increase in sound levels near the project will generally not be noticeable. The project's traffic will have a smaller effect on locations further from the project site.

The TNM modeling of the potential sound level impacts from motor vehicles demonstrates that the traffic generated by the Casino during the period with the largest trip generation will not have a significant impact on community sound levels, and community sound levels after the Casino is built will comply with the FHWA guideline for sound levels in residential and recreational areas.

[9] FHWA, "FHWA Traffic Noise Model Look-Up Tables," FHWA-PD-98-047, July 1998, Version 1.0.

TABLE 5-1

SUBJECTIVE EFFECT OF CHANGES IN SOUND PRESSURE LEVEL FOR BROADBAND SOUNDS

Change in Sound Pressure Level (dB)	Apparent Change in Loudness
3	Just noticeable
5	Noticeable
10	Twice (or half) as loud

TABLE 5-2

COMMON SOUND LEVELS

Activity	dBA
Threshold of pain	130
Chipping on metal	120
Loud rock band	110
Jack hammer	100
Jet airliner 1/2 mile away	95
Threshold of hearing damage	90
Freeway traffic - downtown streets	80
Urban residential area	60-70
Normal conversation	60
Suburban area	50-55
Rural area	30-40
Wilderness area	25
Threshold of audibility	0

TABLE 5-3

**EXISTING AND FUTURE SOUND LEVELS (L_{eq})
IN THE NEARBY RESIDENTIAL AND RECREATIONAL AREAS
FOR THE PROJECT'S PEAK HOUR OF TRIP GENERATION
(dBA)**

Analysis Case	Residence #85 Highway 161	Residence #34 Foss Road	Residence #16 Old County Road	1,000 feet South of Rte. 17 on Neversink River	1,000 feet North of Rte. 17 on Neversink River
Existing 2010	60	58	54	54	54
No-Build 2018	62	60	56	56	56
Build 2018	63	61	57	57	57
Cumulative Build 2018	63	61	57	57	57
FHWA Guideline	67	67	67	67	67

6.0 MESOSCALE AIR QUALITY ANALYSIS

A mesoscale air quality analysis was performed to calculate the potential regional air quality effects of the traffic generated by the proposed casinos on Orange County, using as a measure the total daily emissions of volatile organic compounds (VOC) and oxides of nitrogen (NO_x) on major highways in Orange County. Specifically, calculations were performed to compare areawide VOC and NO_x emissions after the project is built with future no-build emissions.

The purpose of controlling VOC and NO_x emissions is to reduce the concentration of ground-level ozone. VOC react with NO_x in the presence of sunlight to create ground-level photochemical oxidants (ozone). Motor vehicles are the predominant source of VOC and NO_x in a rural area such as Orange County. Orange County is classified by the EPA as a nonattainment area for the 1-hour and 8-hour ozone standards.

6.1 Mesoscale Study Area

The mesoscale study area was defined in to encompass the major highways in Orange County, including I-84, I-87, Routes 6, 9W, and 17. The details of the roadways included in the analysis are shown in Table 6-1.

6.2 Mesoscale Analysis Procedure

The mesoscale analysis calculated emissions of VOC and NO_x over the study area for the 2018 No-Build, 2018 Build, and 2018 Cumulative Build cases. The vehicle miles traveled (VMT) for each roadway identified in Section 6.1 was calculated by multiplying the length of each roadway by the average daily traffic volume on the roadway. Average daily (24-hour average) traffic volumes (ADTs) were provided by Tetra Tech. A table in the Air Quality Appendix shows the VMT calculation spreadsheet for the roadways.

The VOC and NO_x emissions for each roadway were calculated by multiplying the VMT by the MOBILE6 predicted VOC and NO_x emission factors in grams per mile. Tables in the Air Quality Appendix show the VOC and NO_x emission calculation spreadsheets, respectively. The MOBILE6 emission factors were obtained from the NY DOT for the warm summertime temperatures, which correspond with the peak ozone season.

MOBILE6 predicted VOC and NO_x emission factors vary with vehicle speed. Tables in the Air Quality Appendix show the estimated vehicle speeds and associated MOBILE6.2 VOC and NO_x emission rates, for each roadway link. For each link, the same speed was used for each of the scenarios analyzed.

6.3 Predicted Mesoscale Emissions

A summary of the results of the mesoscale analysis is presented in Tables 6-2 and 6-3. Table 6-2 shows that the 2018 No-Build VOC major roadway emissions over the study area are 3,487 kg/day. The major roadway emissions of VOC for the 2018 Build case are predicted to be 3,581 kg/day, a 2.7% increase from the No-Build mesoscale VOC emissions. The major roadway emissions of VOC for the 2018 Cumulative Build case are predicted to be 3,710 kg/day, a 6.4% increase from the No-Build mesoscale VOC emissions.

Table 6-2 shows that the 2018 No-Build NO_x major roadway emissions over the study area are 7,238 kg/day. The major roadway emissions of NO_x for the 2018 Build case are predicted to be 7,456 kg/day, a 3.0% increase from the No-Build mesoscale NO_x emissions. The major roadway emissions of NO_x for the 2018 Cumulative Build case are predicted to be 7,758 kg/day, a 7.2% increase from the No-Build mesoscale NO_x emissions.

Table 6-3 shows an estimate for the total emissions of VOC and NO_x in Orange County for the 2018 No-Build, Build, and Cumulative Build cases.[10] The emissions information in Table 6-3 shows that the Build case will increase total emissions of VOC and NO_x over the No-Build case by only 0.2%

[10] US EPA, AirData internet site (www. epa.gov/air/data), estimate for 2002, applied to the 2018 No-Build case.

and 0.5%, respectively. Table 6-3 shows that the Cumulative Build case will increase total emissions of VOC and NO_x over the No-Build case by only 0.5% and 1.1%, respectively.

Motor vehicle traffic in Orange County related to the proposed Stockbridge-Munsee Casino project will result in an insignificant (< 1%) increase in total VOC and NO_x emissions in Orange County. This very small increase in ozone precursor emissions will have no discernable effect on local ozone levels in Orange County due to the relatively small change and the fact that photochemical reaction times are not rapid enough to form ozone until a parcel of air has been transported a long distance downwind. The potential increase in VOC and NO_x emissions from the casinos are even smaller when compared to precursor emissions from the entire region and urban areas located upwind (such as Philadelphia, PA; and New York City). Thus, the proposed casinos will not have a significant impact on the air quality in Orange County.

TABLE 6-1

ROADWAYS INCLUDED IN MESOSCALE AIR QUALITY ANALYSIS FOR ORANGE COUNTY

Route	Description
6	Rte 209 -- Jersey Ave
6	Jersey Ave --Pt Jervis City Line
6	Town of Deer Park --Start of 17M Overlap
6	Start of 17M Overlap -- Start of 17 Overlap
6	(= Route 17 for 12.75 miles)
6	End of Overlap Rte 17 -- Start Rte 98 Overlap
6	Start of Rte 98 Overlap -- Start Rte 987 Overlap
6	Start of Rte 987 Overlap -- Rockland County Line
9W	Rockland County Line -- Rte 6 End 202 Overlap
9W	Route 6 End 202 Overlap -- Union Ave
9W	Union Ave -- Rte 17K Start 32 Overlap
9W	(= Route 32 for 1.36 miles)
9W	End of 32 Overlap -- Ulster County Line
17	Sullivan County Line -- Rte 211
17	Rte 211 -- Start 6 17M Overlaps
17	Start 6 17M Overlaps -- Rtes 207 & 17A
17	Rtes 207 & 17A -- End Route 6 Overlap
17	End Rte 6 Overlap -- Route 32
17	Rte 32 -- ACC I-87 Harriman
17	ACC I-87 Harriman -- Rtes 210 & 17A
17	Rtes 210 & 17A -- Rockland County Line
17A	Rtes 6, 17 & 207 -- CR 6 Pulaski Hwy
17A	(= Route 94 for 6.5 miles)
17A	End 94 Overlap Warwick -- Rte 17 End 17A
17K	Old Rte 17 -- CR 14 Albany Post Road
17K	CR 14 Albany Post Road -- CR23 Rockcut Rd
17K	CR 23 Rockcut Rd -- Start 32 Overlap
17K	(= Route 32 for 0.23 miles)
17M	Rte 17 -- Start 211 Overlap
17M	(= Route 211 for 0.75 miles)
17M	End Rte 211 Overlap -- Middletown City Line
17M	Town of Wawayanda -- Start Rte 6 Overlap
17M	(= Routes 6 & 17 for 6.36 miles)
17M	End 6 & 17 Overlaps Goshen -- Start 94 overlap
17M	(= Route 94 for 0.20 miles)
17M	End Rte 94 Overlap Chester -- Rte 17 Monroe End 17M
32	Rtes 6& 17 Harriman -- Smith Clove Rd CR 9
32	Smith Clove Rd CR 9 -- Newburgh N City Line
32	Town of Newburgh -- ACC Rts 52 & I-84 WB
32	ACC Rts 52 & I-84 -- Ulster County Line

42	Rts 6 & 209 Start Rte 97 Overlap --End 97 Overlap
42	End 97 Overlap Sparobush -- Sullivan County Line
52	Ulster County Line -- Rte 302
52	Rte 302 -- Start Rte 208 Overlap Walden
52	(= Route 208 for 0.06 miles)
52	End Rte 208 Overlap --Start I-84 Overlap
52	(= Interstate 84 for 2.78 miles)
94	New Jersey State Line -- Start 17A Overlap
94	Start 17A Overlap -- CR 13 Kings Highway
94	CR 13 Kings Hwy -- ACC Rtes 6 & 17 Chester
94	ACC Rtes 6 & 17 Chester -- End Rte 17M Overlap
94	End Rte 17M Overlap -- Rte 208 Washingtonville
94	Rte 208 Washingtonville -- Rte 9W End 94
97	(= Route 42 for 2.82 miles)
97	End Rte 42 Overlap -- Sullivan County Line
202	Rockland County Line -- End 9W Start Rte 6 Overlap
202	(= Route 6 for 0.16 miles)
207	Rtes 17 & 17A -- CR 8 Sarah Wells Trl.
207	CR 8 Sarah Wells Trl. -- Rte 416
207	Rte 416 -- Start Rte 208 Overlap
207	(= Route 208 for 0.13 miles)
207	End Rte 208 Overlap -- CR 54 Drury Lane
207	CR 54 Drury Lane -- Airport Entrance Brunig Rd
207	Airport Entrance Brunig Rd -- Start Rte 300 Overlap
207	(= Route 300 for 0.39 miles)
207	End Rte 300 Overlap -- Rte 17K End 207
208	Rte 17M Vill Monroe -- CR 27 Clove Rd
208	CR 27 Clove Rd -- ACC Rte I-84
208	ACC Rte I-84 -- End Rte 52 Overlap
208	End Rte 52 Overlap -- Ulster County Line
209	(= Route 6 for 0.86 miles)
209	End Rte 6 Overlap -- CR 80 Neversink Dr.
209	CR 80 Neversink Dr -- Sullivan County Line
210	New Jersey State Line -- Rte 17A End Rte 210
211	Rte 209 JCT -- Middletown W City Line
211	City of Middletown -- Middletown E City Line
211	Town of Wallkill -- CR 83 Scotchtown Rd
211	CR 83 Scotchtown Rd -- Rte 17K End Rte 211
218	Rte 9W -- Start 9W Overlap
218	(= Route 9W for 0.76 miles)
218	Rte 293 End 9W Overlap -- Rte 9W End Rte 218
284	New Jersey State Line -- Route 6 JCT End Rte 284

293	Rte 6 -- Rte 9W 218 End Rte 293
300	Ulster County Line -- Rte 32
300	Rte 32 -- Rte 52
300	Rte 52 -- ACC I-84
300	ACC I-84 -- ACC I-87 NYS Thruway
300	ACC 871 NYS Thruway -- End Rte 207 Overlap
300	End Rte 207 Overlap -- Rte 94 End Rte 300
302	Rte 17M -- Rte 52 End Rte 302
416	Rte 207 -- Rte 211 End Rte 416
980P	JCT Rtes 52 - 184 -- Orance Co. Town of Newburgh
980P	Or. Co. Town of Newburgh -- Or. Co. city of Newburgh
980T	Rte 9W NB -- Newburgh N City Line
980U	Rte 9W -- End at Rte 218
980W	Rte 218 -- End at Vil/Highland Fl
982E	Rte 9W SB -- End at Rte 218
982P	Rte 17M -- Orange Co. Village of Chester
984C	Rtes 6 & 17 -- Thruway Conn.
984K	Rte 9W Southbound -- JCT NTR 980T
987C	Orange Co. Line -- Conn. To Queensboro Cir.
987C	Conn. To Queensboro Ci. -- Start Rte 987E SLP Overlap
987C	(= Route 6 for 2.13 miles)
987E	Rockland Co. Line -- Rte 6 Overlap
987E	(= Route 6 for 0.63 miles)
987E	End Rte 987C PIP Rte 6 Overlaps -- Rockland Co. Line
I-84	Penn State Line -- ACC Rte 6 CR 15
I-84	ACC Rte 6 CR 15 -- ACC Rte 17M West
I-84	ACC Rte 17M West -- ACC Rte 208
I-84	ACC Rte 208 -- ACC Rte 300 CONN I-87
I-84	ACC Rte 300 Conn I-87 -- Start 52 Overlap
I-84	Start 52 Overlap -- Dutchess County Line
I-87	Rockland County Line -- Interstate 16 Rts 6 & 7
I-87	Interchange 16 Rtes 6 & 7 -- Ulster County Line

TABLE 6-2

SUMMARY OF DAILY MAJOR ROADWAY VOC AND NO_x EMISSIONS IN ORANGE COUNTY, NEW YORK (KG/DAY)

Pollutant	2018 No-Build	2018 Build	2018 Cumulative Build
VOC	3,487	3,581	3,710
NO_x	7,238	7,456	7,758

TABLE 6-3

SUMMARY OF DAILY TOTAL VOC AND NO_x EMISSIONS IN ORANGE COUNTY, NEW YORK (KG/DAY)

Pollutant	2018 No-Build	2018 Build	2018 Cumulative Build
VOC	42,179	42,273	42,402
NO_x	48,156	48,374	48,676

Note: The estimate of total countywide emissions for the 2018 No-Build case is from the US EPA AirData internet site (www.epa.gov/air/data).

7.0 CONSTRUCTION IMPACTS

7.1 Noise

Project construction is expected to produce temporary increases in sound levels in the area immediately adjacent to the site. The site's proximity to the highway is an advantage and means that construction vehicles and delivery trucks will not pass through a residential district. Reasonable measures will be implemented to mitigate the short-term construction effects: use of effective mufflers on all equipment, and the proper maintenance of equipment.

7.2 Air Quality

During the construction of the project, air quality may be temporally affected by fugitive dust from construction activities and exhaust emissions from construction vehicles. The worst air quality impacts will be associated with the excavation phase of the project. Reasonable mitigation measures will be employed as necessary to minimize the potential impact of air pollutant emissions generated by project construction operations, on all locations surrounding the project site: compacting of the soil or the use of gravel to stabilize the site access points, periodic cleaning of paved streets near the entrances to the site, as necessary, to minimize vehicle mud/dirt carryout, and requiring that trucks hauling excavate from the site install secure covers over their loads.

AIR QUALITY APPENDIX

MOBILE6.2
Emissions Factors

CO EMISSION RATE CALCULATIONS USING NYDOT MOBILE6 TABLE EF-4 (2010)

#	Vehicle Class	Class #7/8/9 Vehicle %	CO Emision Rate for Each Vehicle Class (gram/mile)					Scaled Emission Rate for Each Vehicle Class (gram/mile)				
			Class #7/8/9 0 MPH (Idle)	Class #7/8/9 5 MPH	Class #7/8/9 25 MPH	Class #7/8/9 30 MPH	Class #7/8/9 40 MPH	0 MPH (Idle)	5 MPH	25 MPH	30 MPH	40 MPH
1	LDGV	43.90	53.76	11.52	4.8	4.68	5.13	23.60	5.06	2.11	2.05	2.25
2	LDGT1	7.05	46.6	10.4	4.5	4.39	4.85	3.29	0.73	0.32	0.31	0.34
3	LDGT2	23.48	49.49	11.03	4.79	4.68	5.17	11.62	2.59	1.12	1.10	1.21
4	LDGT3	12.60	52.71	11.52	4.91	4.79	5.28	6.64	1.45	0.62	0.60	0.67
5	LDGT4	5.59	53.27	11.64	4.96	4.85	5.34	2.98	0.65	0.28	0.27	0.30
6	HDGV2B	1.19	109.33	34.94	9.52	7.89	6.4	1.30	0.42	0.11	0.09	0.08
7	HDGV3	0.55	147.54	47.15	12.85	10.65	8.64	0.81	0.26	0.07	0.06	0.05
8	HDGV4	0.19	139.55	44.6	12.16	10.08	8.17	0.27	0.08	0.02	0.02	0.02
9	HDGV5	0.27	215.89	69	18.8	15.59	12.64	0.58	0.19	0.05	0.04	0.03
10	HDGV6	0.15	311.19	99.46	27.11	22.47	18.21	0.47	0.15	0.04	0.03	0.03
11	HDGV7	0.18	437.55	139.84	38.11	31.6	25.61	0.79	0.25	0.07	0.06	0.05
12	HDGV8A	0.36	603.79	192.97	52.59	43.6	35.34	2.17	0.69	0.19	0.16	0.13
13	LDDV	0.10	6.86	2.24	0.67	0.55	0.43	0.01	0.00	0.00	0.00	0.00
14	LDDT12	0.15	5.41	1.77	0.52	0.43	0.34	0.01	0.00	0.00	0.00	0.00
15	LDDT34	0.91	5.08	1.66	0.49	0.41	0.32	0.05	0.02	0.00	0.00	0.00
16	HDDV2B	0.15	5.48	1.79	0.53	0.44	0.34	0.01	0.00	0.00	0.00	0.00
17	HDDV3	0.12	6.54	2.14	0.63	0.52	0.41	0.01	0.00	0.00	0.00	0.00
18	HDDV4	0.10	11.38	3.72	1.1	0.91	0.72	0.01	0.00	0.00	0.00	0.00
19	HDDV5	0.11	11.64	3.8	1.13	0.93	0.73	0.01	0.00	0.00	0.00	0.00
20	HDDV6	0.14	13.77	4.5	1.34	1.1	0.87	0.02	0.01	0.00	0.00	0.00
21	HDDV7	0.30	16.32	5.33	1.58	1.31	1.03	0.05	0.02	0.00	0.00	0.00
22	HDDV8A	0.94	33.25	10.86	3.22	2.67	2.09	0.31	0.10	0.03	0.03	0.02
23	HDDV8B	0.70	32.91	10.75	3.19	2.64	2.07	0.23	0.08	0.02	0.02	0.01
24	HDGB	0.19	386.34	123.48	33.65	27.9	22.61	0.73	0.23	0.06	0.05	0.04
25	HDDBT	0.29	40.15	13.11	3.89	3.22	2.53	0.12	0.04	0.01	0.01	0.01
26	HDDBS	0.29	20.51	6.7	1.99	1.65	1.29	0.06	0.02	0.01	0.00	0.00
27	MC	0.00	255.18	58.8	11	8.97	6.44	0.00	0.00	0.00	0.00	0.00
	SUM:	100.00						**0 MPH (Idle)**	**5 MPH**	**25 MPH**	**30 MPH**	**40 MPH**
DOT Region #9							**Composite CO Rates:**	**56.1** (gram/hour)	**13.0** (gram/mile)	**5.2** (gram/mile)	**4.9** (gram/mile)	**5.2** (gram/mile)

CO EMISSION RATE CALCULATIONS USING NYDOT MOBILE6 TABLE EF-4 (2018)

#	Vehicle Class	Class #7/8/9 Vehicle %	CO Emision Rate for Each Vehicle Class (gram/mile)					Scaled Emission Rate for Each Vehicle Class (gram/mile)				
			Class #7/8/9 0 MPH (Idle)	Class #7/8/9 5 MPH	Class #7/8/9 25 MPH	Class #7/8/9 30 MPH	Class #7/8/9 40 MPH	0 MPH (Idle)	5 MPH	25 MPH	30 MPH	40 MPH
1	LDGV	43.90	35.76	7.87	3.34	3.26	3.61	15.70	3.45	1.47	1.43	1.58
2	LDGT1	7.05	32.59	7.38	3.2	3.14	3.5	2.30	0.52	0.23	0.22	0.25
3	LDGT2	23.48	34.72	7.84	3.42	3.36	3.75	8.15	1.84	0.80	0.79	0.88
4	LDGT3	12.60	35.79	8.08	3.53	3.46	3.85	4.51	1.02	0.44	0.44	0.49
5	LDGT4	5.59	36.39	8.22	3.59	3.52	3.91	2.03	0.46	0.20	0.20	0.22
6	HDGV2B	1.19	92.6	29.6	8.07	6.69	5.42	1.10	0.35	0.10	0.08	0.06
7	HDGV3	0.55	122.49	39.15	10.67	8.84	7.17	0.67	0.22	0.06	0.05	0.04
8	HDGV4	0.19	123.29	39.4	10.74	8.9	7.22	0.23	0.07	0.02	0.02	0.01
9	HDGV5	0.27	140.96	45.05	12.28	10.18	8.25	0.38	0.12	0.03	0.03	0.02
10	HDGV6	0.15	148.48	47.45	12.93	10.72	8.69	0.22	0.07	0.02	0.02	0.01
11	HDGV7	0.18	173.57	55.47	15.12	12.53	10.16	0.31	0.10	0.03	0.02	0.02
12	HDGV8A	0.36	193.16	61.73	16.82	13.95	11.31	0.70	0.22	0.06	0.05	0.04
13	LDDV	0.10	5.74	1.87	0.56	0.46	0.36	0.01	0.00	0.00	0.00	0.00
14	LDDT12	0.15	3.17	1.04	0.31	0.25	0.2	0.00	0.00	0.00	0.00	0.00
15	LDDT34	0.91	2.9	0.95	0.28	0.23	0.18	0.03	0.01	0.00	0.00	0.00
16	HDDV2B	0.15	1.66	0.54	0.16	0.13	0.1	0.00	0.00	0.00	0.00	0.00
17	HDDV3	0.12	1.99	0.65	0.19	0.16	0.13	0.00	0.00	0.00	0.00	0.00
18	HDDV4	0.10	3.35	1.09	0.32	0.27	0.21	0.00	0.00	0.00	0.00	0.00
19	HDDV5	0.11	3.76	1.23	0.36	0.3	0.24	0.00	0.00	0.00	0.00	0.00
20	HDDV6	0.14	4.18	1.36	0.4	0.33	0.26	0.01	0.00	0.00	0.00	0.00
21	HDDV7	0.30	5.39	1.76	0.52	0.43	0.34	0.02	0.01	0.00	0.00	0.00
22	HDDV8A	0.94	10.55	3.45	1.02	0.85	0.66	0.10	0.03	0.01	0.01	0.01
23	HDDV8B	0.70	9.59	3.13	0.93	0.77	0.6	0.07	0.02	0.01	0.01	0.00
24	HDGB	0.19	200.96	64.23	17.5	14.51	11.76	0.38	0.12	0.03	0.03	0.02
25	HDDBT	0.29	11.82	3.86	1.15	0.95	0.74	0.03	0.01	0.00	0.00	0.00
26	HDDBS	0.29	8.5	2.77	0.82	0.68	0.53	0.02	0.01	0.00	0.00	0.00
27	MC	0.00	255.18	58.8	11	8.97	6.44	0.00	0.00	0.00	0.00	0.00
	SUM:	100.00						**0 MPH (Idle)**	**5 MPH**	**25 MPH**	**30 MPH**	**40 MPH**
DOT Region #9							**Composite CO Rates:**	**37.0** (gram/hour)	**8.7** (gram/mile)	**3.5** (gram/mile)	**3.4** (gram/mile)	**3.7** (gram/mile)

CO EMISSION RATE CALCULATIONS USING NYDOT MOBILE6 TABLE EF-4 (2010 PM)

#	Vehicle Class	Class #7/8/9 Vehicle %	2010 PM10 Moving All Speeds	2010 PM10 Idle	2010 PM2.5 Moving All Speeds	2010 PM2.5 Idle		Scaled Emission Rate for Each Vehicle Class (gram/mile) PM10 Moving (All Speeds)	PM10 Idle	PM2.5 Moving (All Speeds)	PM2.5 Idle	
1	LDGV	43.90	0.025	0.00	0.011	0.00		0.0110	0.0000	0.0048	0.0000	
2	LDGT1	7.05	0.025	0.00	0.012	0.00		0.0018	0.0000	0.0008	0.0000	
3	LDGT2	23.48	0.025	0.00	0.012	0.00		0.0059	0.0000	0.0028	0.0000	
4	LDGT3	12.60	0.025	0.00	0.012	0.00		0.0032	0.0000	0.0015	0.0000	
5	LDGT4	5.59	0.025	0.00	0.012	0.00		0.0014	0.0000	0.0007	0.0000	
6	HDGV2B	1.19	0.058	0.00	0.041	0.00		0.0007	0.0000	0.0005	0.0000	
7	HDGV3	0.55	0.072	0.00	0.050	0.00		0.0004	0.0000	0.0003	0.0000	
8	HDGV4	0.19	0.075	0.00	0.051	0.00		0.0001	0.0000	0.0001	0.0000	
9	HDGV5	0.27	0.087	0.00	0.058	0.00		0.0002	0.0000	0.0002	0.0000	
10	HDGV6	0.15	0.118	0.00	0.078	0.00		0.0002	0.0000	0.0001	0.0000	
11	HDGV7	0.18	0.136	0.00	0.090	0.00		0.0002	0.0000	0.0002	0.0000	
12	HDGV8A	0.36	0.202	0.00	0.124	0.00		0.0007	0.0000	0.0004	0.0000	
13	LDDV	0.10	0.097	0.00	0.078	0.00		0.0001	0.0000	0.0001	0.0000	
14	LDDT12	0.15	0.108	0.00	0.088	0.00		0.0002	0.0000	0.0001	0.0000	
15	LDDT34	0.91	0.068	0.00	0.051	0.00		0.0006	0.0000	0.0005	0.0000	
16	HDDV2B	0.15	0.067	1.031	0.051	0.949		0.0001	0.0015	0.0001	0.0014	
17	HDDV3	0.12	0.072	1.038	0.053	0.955		0.0001	0.0012	0.0001	0.0011	
18	HDDV4	0.10	0.099	1.081	0.077	0.995		0.0001	0.0011	0.0001	0.0010	
19	HDDV5	0.11	0.102	1.160	0.079	1.067		0.0001	0.0013	0.0001	0.0012	
20	HDDV6	0.14	0.193	1.180	0.163	1.085		0.0003	0.0017	0.0002	0.0015	
21	HDDV7	0.30	0.184	1.151	0.155	1.059		0.0006	0.0035	0.0005	0.0032	
22	HDDV8A	0.94	0.371	1.383	0.311	1.273		0.0035	0.0130	0.0029	0.0120	
23	HDDV8B	0.70	0.294	1.217	0.241	1.119		0.0021	0.0085	0.0017	0.0078	
24	HDGB	0.19	0.146	0.000	0.097	0.000		0.0003	0.0000	0.0002	0.0024	
25	HDDBT	0.29	0.468	1.395	0.416	1.283		0.0014	0.0040	0.0012	0.0033	
26	HDDBS	0.29	0.380	1.223	0.336	1.125		0.0011	0.0035	0.0010	0.0000	
27	MC	0.00	0.037	0.000	0.021	0.000		0.0000	0.0000	0.0000	0.0000	
	SUM:	100.00										
DOT Region #9							**Composite PM Rates:**	**0.03615** (gram/mile)	**0.03937** (gram/hour)	**0.02106** (gram/mile)	**0.03493** (gram/hour)	**0.0** (gram/mile)

CO EMISSION RATE CALCULATIONS USING NYDOT MOBILE6 TABLE EF-4 (2018 PM)

#	Vehicle Class	Class #7/8/9 Vehicle %	2018 PM10 Moving All Speeds	2018 PM10 Idle	2018 PM2.5 Moving All Speeds	2018 PM2.5 Idle		Scaled Emission Rate for Each Vehicle Class (gram/mile) PM10 Moving (All Speeds)	PM10 Idle	PM2.5 Moving (All Speeds)	PM2.5 Idle
1	LDGV	43.90	0.025	0.00	0.011	0.00		0.0110	0.0000	0.0048	0.0000
2	LDGT1	7.05	0.025	0.00	0.011	0.00		0.0018	0.0000	0.0008	0.0000
3	LDGT2	23.48	0.025	0.00	0.011	0.00		0.0059	0.0000	0.0026	0.0000
4	LDGT3	12.60	0.025	0.00	0.011	0.00		0.0032	0.0000	0.0014	0.0000
5	LDGT4	5.59	0.025	0.00	0.011	0.00		0.0014	0.0000	0.0006	0.0000
6	HDGV2B	1.19	0.035	0.00	0.021	0.00		0.0004	0.0000	0.0002	0.0000
7	HDGV3	0.55	0.045	0.00	0.027	0.00		0.0002	0.0000	0.0001	0.0000
8	HDGV4	0.19	0.043	0.00	0.025	0.00		0.0001	0.0000	0.0000	0.0000
9	HDGV5	0.27	0.047	0.00	0.028	0.00		0.0001	0.0000	0.0001	0.0000
10	HDGV6	0.15	0.055	0.00	0.034	0.00		0.0001	0.0000	0.0001	0.0000
11	HDGV7	0.18	0.062	0.00	0.040	0.00		0.0001	0.0000	0.0001	0.0000
12	HDGV8A	0.36	0.093	0.00	0.050	0.00		0.0003	0.0000	0.0002	0.0000
13	LDDV	0.10	0.055	0.00	0.039	0.00		0.0001	0.0000	0.0000	0.0000
14	LDDT12	0.15	0.046	0.00	0.031	0.00		0.0001	0.0000	0.0000	0.0000
15	LDDT34	0.91	0.034	0.00	0.020	0.00		0.0003	0.0000	0.0002	0.0000
16	HDDV2B	0.15	0.032	1.004	0.018	0.924		0.0000	0.0015	0.0000	0.0014
17	HDDV3	0.12	0.036	1.004	0.019	0.924		0.0000	0.0012	0.0000	0.0011
18	HDDV4	0.10	0.042	1.004	0.024	0.924		0.0000	0.0010	0.0000	0.0009
19	HDDV5	0.11	0.042	1.004	0.025	0.924		0.0000	0.0011	0.0000	0.0010
20	HDDV6	0.14	0.063	1.004	0.044	0.924		0.0001	0.0014	0.0001	0.0013
21	HDDV7	0.30	0.063	1.004	0.044	0.924		0.0002	0.0030	0.0001	0.0028
22	HDDV8A	0.94	0.118	1.004	0.078	0.924		0.0011	0.0094	0.0007	0.0087
23	HDDV8B	0.70	0.101	1.004	0.063	0.924		0.0007	0.0070	0.0004	0.0065
24	HDGB	0.19	0.063	1.004	0.040	0.924		0.0001	0.0019	0.0001	0.0018
25	HDDBT	0.29	0.084	1.004	0.063	0.924		0.0002	0.0029	0.0002	0.0027
26	HDDBS	0.29	0.085	1.004	0.064	0.924		0.0002	0.0029	0.0002	0.0027
27	MC	0.00	0.037	1.004	0.021	0.924		0.0000	0.0000	0.0000	0.0000
	SUM:	100.00									
DOT Region #9							**Composite PM Rates:**	**0.02787** (gram/mile)	**0.03343** (gram/hour)	**0.01319** (gram/mile)	**0.03077** (gram/hour)

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: SO2_10.IN (file 1, run 1).                                *
*************************************************************************

* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2010 SO2 for Orange County arterial @2.5 MPH (idle)
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # #

                              Calendar Year:  2010
                                      Month:  July
               Gasoline Fuel Sulfur Content:   30. ppm
                 Diesel Fuel Sulfur Content:   15. ppm
                       Particle Size Cutoff:  2.50 Microns
                           Reformulated Gas:  Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
               GVWR:                <6000     >6000     (All)
                         ------    ------    ------    ------    ------    ------    ------
------    ------    ------
   VMT Distribution:    0.3432    0.3732    0.1458              0.0339    0.0006    0.0150
0.0842    0.0043    1.0000

-----------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0041    0.0042    0.0041    0.0042    0.0356    0.1158    0.0446
0.1481    0.0144    0.0180
            Total PM:    0.0115    0.0115    0.0115    0.0115    0.0430    0.1231    0.0520
0.1597    0.0207    0.0257
                 SO2:    0.0067    0.0088    0.0115    0.0095    0.0165    0.0030    0.0054
0.0131    0.0033    0.0090

-----------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:     LDGT1     LDGT2     LDGT3     LDGT4    LDDT12    LDDT34
                         ------    ------    ------    ------    ------    ------
            VMT Mix:    0.0862    0.2870    0.0999    0.0459    0.0026    0.0124

-----------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0042    0.0042    0.0041    0.0041    0.0501    0.0435
            Total PM:    0.0115    0.0115    0.0115    0.0115    0.0574    0.0508
                 SO2:    0.0088    0.0088    0.0115    0.0115    0.0043    0.0056

-----------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:    HDGV2B    HDGV3     HDGV4     HDGV5     HDGV6     HDGV7     HDGV8A
HDGV8B
                         ------    ------    ------    ------    ------    ------    ------
------
            VMT Mix:    0.0300    0.0017    0.0005    0.0003    0.0005    0.0003    0.0001
0.0000

-----------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
```

```
   Total Exhaust PM:    0.0333    0.0375    0.0375    0.0444    0.0785    0.0857    0.1048
0.0000
           Total PM:    0.0406    0.0459    0.0458    0.0527    0.0869    0.0940    0.1192
0.0000
                SO2:    0.0161    0.0174    0.0176    0.0207    0.0214    0.0232    0.0250
0.0000

-------------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:    HDDV2B    HDDV3     HDDV4     HDDV5     HDDV6     HDDV7     HDDV8A
HDDV8B
                        ------    ------    ------    ------    ------    ------    ------
------
            VMT Mix:    0.0088    0.0017    0.0028    0.0027    0.0088    0.0100    0.0081
0.0392

-------------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0507    0.0499    0.0524    0.0510    0.1061    0.1117    0.1844
0.1857
           Total PM:    0.0580    0.0582    0.0608    0.0593    0.1145    0.1200    0.1988
0.2000
                SO2:    0.0073    0.0081    0.0093    0.0096    0.0109    0.0126    0.0145
0.0151

-------------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0006    0.0008    0.0012

-------------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0646    0.6292    0.2634
           Total PM:    0.0729    0.6375    0.2718
                SO2:    0.0258    0.0222    0.0153

-------------------------------------------------------------------------------------------------
-----------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2010 SO2 for Orange County arterial (5 MPH)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #

                              Calendar Year:  2010
                                      Month:  July
               Gasoline Fuel Sulfur Content:   30. ppm
                 Diesel Fuel Sulfur Content:   15. ppm
                       Particle Size Cutoff:  2.50 Microns
                           Reformulated Gas:  Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
               GVWR:                <6000     >6000     (All)
                        ------    ------    ------    ------    ------    ------    ------
------    ------    ------
   VMT Distribution:    0.3432    0.3732    0.1458              0.0339    0.0006    0.0150
```

```
0.0842    0.0043    1.0000

-----------------------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0041    0.0042    0.0041    0.0042    0.0356    0.1158    0.0446
0.1481    0.0144    0.0180
            Total PM:    0.0115    0.0115    0.0115    0.0115    0.0430    0.1231    0.0520
0.1597    0.0207    0.0257
                 SO2:    0.0067    0.0088    0.0115    0.0095    0.0165    0.0030    0.0054
0.0131    0.0033    0.0090

-----------------------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:     LDGT1     LDGT2     LDGT3     LDGT4    LDDT12    LDDT34
                        ------    ------    ------    ------    ------    ------
             VMT Mix:    0.0862    0.2870    0.0999    0.0459    0.0026    0.0124

-----------------------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0042    0.0042    0.0041    0.0041    0.0501    0.0435
            Total PM:    0.0115    0.0115    0.0115    0.0115    0.0574    0.0508
                 SO2:    0.0088    0.0088    0.0115    0.0115    0.0043    0.0056

-----------------------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:    HDGV2B    HDGV3     HDGV4     HDGV5     HDGV6     HDGV7     HDGV8A
HDGV8B
                        ------    ------    ------    ------    ------    ------    ------
------
             VMT Mix:    0.0300    0.0017    0.0005    0.0003    0.0005    0.0003    0.0001
0.0000

-----------------------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0333    0.0375    0.0375    0.0444    0.0785    0.0857    0.1048
0.0000
            Total PM:    0.0406    0.0459    0.0458    0.0527    0.0869    0.0940    0.1192
0.0000
                 SO2:    0.0161    0.0174    0.0176    0.0207    0.0214    0.0232    0.0250
0.0000

-----------------------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:    HDDV2B    HDDV3     HDDV4     HDDV5     HDDV6     HDDV7     HDDV8A
HDDV8B
                        ------    ------    ------    ------    ------    ------    ------
------
             VMT Mix:    0.0088    0.0017    0.0028    0.0027    0.0088    0.0100    0.0081
0.0392

-----------------------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0507    0.0499    0.0524    0.0510    0.1061    0.1117    0.1844
0.1857
            Total PM:    0.0580    0.0582    0.0608    0.0593    0.1145    0.1200    0.1988
0.2000
```

```
                SO2:    0.0073    0.0081    0.0093    0.0096    0.0109    0.0126    0.0145
0.0151

-------------------------------------------------------------------------------------------------------------------------
----------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0006    0.0008    0.0012

-------------------------------------------------------------------------------------------------------------------------
----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0646    0.6292    0.2634
            Total PM:    0.0729    0.6375    0.2718
                SO2:    0.0258    0.0222    0.0153

-------------------------------------------------------------------------------------------------------------------------
----------------------
```

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: SO2_18.IN (file 1, run 1).                                *
*************************************************************************

* # # # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2010 SO2 for Orange County arterial @2.5 MPH (idle)
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # #

                              Calendar Year:  2018
                                      Month:  July
               Gasoline Fuel Sulfur Content:   30. ppm
                 Diesel Fuel Sulfur Content:   15. ppm
                       Particle Size Cutoff:  2.50 Microns
                           Reformulated Gas:  Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
               GVWR:                <6000     >6000     (All)
                         ------    ------    ------    ------    ------    ------    ------
------    ------    ------
   VMT Distribution:    0.2819    0.4155    0.1624              0.0342    0.0005    0.0167
0.0849    0.0040    1.0000

-----------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0039    0.0039    0.0039    0.0039    0.0141    0.0607    0.0123
0.0282    0.0144    0.0066
            Total PM:    0.0113    0.0113    0.0113    0.0113    0.0215    0.0680    0.0197
0.0398    0.0207    0.0143
                 SO2:    0.0067    0.0088    0.0115    0.0095    0.0164    0.0029    0.0054
0.0130    0.0033    0.0092

-----------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:     LDGT1     LDGT2     LDGT3     LDGT4    LDDT12    LDDT34
                         ------    ------    ------    ------    ------    ------
            VMT Mix:    0.0960    0.3195    0.1112    0.0511    0.0029    0.0138

-----------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0039    0.0039    0.0039    0.0039    0.0135    0.0121
            Total PM:    0.0113    0.0113    0.0113    0.0113    0.0209    0.0194
                 SO2:    0.0088    0.0088    0.0115    0.0115    0.0043    0.0056

-----------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:    HDGV2B    HDGV3     HDGV4     HDGV5     HDGV6     HDGV7     HDGV8A
HDGV8B
                         ------    ------    ------    ------    ------    ------    ------
------
            VMT Mix:    0.0302    0.0017    0.0005    0.0003    0.0005    0.0003    0.0001
0.0000

-----------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
```

```
   Total Exhaust PM:    0.0132    0.0162    0.0158    0.0208    0.0275    0.0315    0.0342
0.0000
           Total PM:    0.0205    0.0246    0.0241    0.0291    0.0358    0.0398    0.0485
0.0000
                SO2:    0.0160    0.0173    0.0174    0.0204    0.0203    0.0222    0.0235
0.0000

-------------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:    HDDV2B    HDDV3     HDDV4     HDDV5     HDDV6     HDDV7     HDDV8A
HDDV8B
                        ------    ------    ------    ------    ------    ------    ------
------
            VMT Mix:    0.0089    0.0017    0.0028    0.0027    0.0089    0.0101    0.0082
0.0395

-------------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0123    0.0124    0.0123    0.0128    0.0262    0.0276    0.0427
0.0305
           Total PM:    0.0196    0.0207    0.0206    0.0212    0.0346    0.0359    0.0570
0.0449
                SO2:    0.0073    0.0081    0.0093    0.0096    0.0109    0.0126    0.0144
0.0151

-------------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0006    0.0008    0.0012

-------------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0251    0.0710    0.0551
           Total PM:    0.0335    0.0793    0.0634
                SO2:    0.0255    0.0218    0.0153

-------------------------------------------------------------------------------------------------
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* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Summer 2010 SO2 for Orange County arterial (5 MPH)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #

                              Calendar Year:  2018
                                      Month:  July
               Gasoline Fuel Sulfur Content:   30. ppm
                 Diesel Fuel Sulfur Content:   15. ppm
                       Particle Size Cutoff:  2.50 Microns
                           Reformulated Gas:  Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT
HDDV        MC   All Veh
               GVWR:                <6000     >6000     (All)
                        ------    ------    ------    ------    ------    ------    ------
------    ------    ------
   VMT Distribution:    0.2819    0.4155    0.1624              0.0342    0.0005    0.0167
```

```
0.0849    0.0040    1.0000

-----------------------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0039    0.0039    0.0039    0.0039    0.0141    0.0607    0.0123
0.0282    0.0144    0.0066
            Total PM:    0.0113    0.0113    0.0113    0.0113    0.0215    0.0680    0.0197
0.0398    0.0207    0.0143
                 SO2:    0.0067    0.0088    0.0115    0.0095    0.0164    0.0029    0.0054
0.0130    0.0033    0.0092

-----------------------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:     LDGT1     LDGT2     LDGT3     LDGT4    LDDT12    LDDT34
                        ------    ------    ------    ------    ------    ------
             VMT Mix:    0.0960    0.3195    0.1112    0.0511    0.0029    0.0138

-----------------------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0039    0.0039    0.0039    0.0039    0.0135    0.0121
            Total PM:    0.0113    0.0113    0.0113    0.0113    0.0209    0.0194
                 SO2:    0.0088    0.0088    0.0115    0.0115    0.0043    0.0056

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-----------------------
          Veh. Type:    HDGV2B    HDGV3     HDGV4     HDGV5     HDGV6     HDGV7     HDGV8A
HDGV8B
                        ------    ------    ------    ------    ------    ------    ------
------
             VMT Mix:    0.0302    0.0017    0.0005    0.0003    0.0005    0.0003    0.0001
0.0000

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-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0132    0.0162    0.0158    0.0208    0.0275    0.0315    0.0342
0.0000
            Total PM:    0.0205    0.0246    0.0241    0.0291    0.0358    0.0398    0.0485
0.0000
                 SO2:    0.0160    0.0173    0.0174    0.0204    0.0203    0.0222    0.0235
0.0000

-----------------------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:    HDDV2B    HDDV3     HDDV4     HDDV5     HDDV6     HDDV7     HDDV8A
HDDV8B
                        ------    ------    ------    ------    ------    ------    ------
------
             VMT Mix:    0.0089    0.0017    0.0028    0.0027    0.0089    0.0101    0.0082
0.0395

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-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0123    0.0124    0.0123    0.0128    0.0262    0.0276    0.0427
0.0305
            Total PM:    0.0196    0.0207    0.0206    0.0212    0.0346    0.0359    0.0570
0.0449
```

```
                SO2:    0.0073    0.0081    0.0093    0.0096    0.0109    0.0126    0.0144
0.0151

-------------------------------------------------------------------------------------------------------------
-----------------------
          Veh. Type:    GasBUS     URBAN    SCHOOL
                        ------    ------    ------
            VMT Mix:    0.0006    0.0008    0.0012

-------------------------------------------------------------------------------------------------------------
-----------------------
 Composite Emission Factors (g/mi):
   Total Exhaust PM:    0.0251    0.0710    0.0551
            Total PM:    0.0335    0.0793    0.0634
                SO2:    0.0255    0.0218    0.0153

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MOBILE6 Emission Factors
For Orange County

Year: 2010

VOC Rate (gram/mile)

Road Type	2.5	5.0	7.5	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0
	Average Vehicle Speed (mph)														
01	3.68	1.56	1.13	0.92	0.73	0.63	0.57	0.54	0.51	0.49	0.47	0.46	0.45	0.45	0.45
02/06	3.42	1.36	0.99	0.80	0.65	0.56	0.52	0.49	0.47	0.45	0.44	0.43	0.43	0.42	0.42
07/08/09	3.36	1.33	0.96	0.78	0.63	0.55	0.51	0.48	0.46	0.45	0.44	0.43	0.42	0.42	0.42
11/12	3.50	1.42	1.02	0.82	0.65	0.57	0.53	0.50	0.48	0.46	0.45	0.44	0.43	0.43	0.43
14/16	3.40	1.35	0.97	0.79	0.64	0.56	0.51	0.48	0.46	0.45	0.44	0.43	0.42	0.42	0.42
17/19	3.37	1.33	0.96	0.77	0.63	0.55	0.51	0.48	0.46	0.45	0.44	0.43	0.42	0.42	0.42

NOx Rate (gram/mile)

Road Type	2.5	5.0	7.5	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0
	Average Vehicle Speed (mph)														
01	2.11	1.91	1.67	1.55	1.36	1.30	1.27	1.25	1.26	1.29	1.34	1.42	1.52	1.67	1.88
02/06	1.25	1.10	0.97	0.90	0.78	0.71	0.67	0.65	0.64	0.65	0.67	0.70	0.74	0.79	0.86
07/08/09	1.16	1.01	0.89	0.82	0.71	0.64	0.61	0.58	0.57	0.59	0.60	0.63	0.66	0.70	0.75
11/12	1.55	1.38	1.17	1.07	0.90	0.88	0.86	0.85	0.85	0.87	0.90	0.95	1.01	1.09	1.21
14/16	1.19	1.05	0.92	0.85	0.73	0.67	0.63	0.61	0.60	0.61	0.63	0.66	0.69	0.74	0.80
17/19	1.11	0.97	0.85	0.79	0.67	0.61	0.58	0.55	0.54	0.55	0.57	0.59	0.62	0.65	0.70

CO Rate (gram/mile)

Road Type	2.5	5.0	7.5	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0
	Average Vehicle Speed (mph)														
01	30.47	21.56	17.73	15.81	13.65	12.82	12.30	11.97	11.87	12.09	12.38	12.72	13.12	13.62	14.22
02/06	29.53	20.34	17.28	15.74	14.25	13.47	13.03	12.84	12.86	13.19	13.54	13.91	14.30	14.75	15.22
07/08/09	29.32	20.12	17.12	15.63	14.21	13.48	13.07	12.91	12.94	13.29	13.65	14.02	14.41	14.85	15.30
11/12	29.81	20.72	17.17	15.40	13.64	13.10	12.77	12.56	12.54	12.84	13.17	13.53	13.92	14.38	14.90
14/16	29.46	20.25	17.23	15.71	14.27	13.52	13.09	12.92	12.94	13.28	13.64	14.01	14.40	14.84	15.30
17/19	29.35	20.12	17.14	15.65	14.27	13.56	13.16	13.00	13.04	13.39	13.75	14.13	14.52	14.95	15.40

Note: 01 - Rural Interstate; 02 - Rural Principal Arterial; 06 - Rural Minor Arterial;
07 - Rural Major Collectors; 08 - Rural Minor Collectors; 09 - Rural Local;
11 - Urban Interstate; 12 - Urban Freeways and Expressways; 14 - Urban Principal Arterial;
16 - Urban Minor Arterial; 17 - Urban Collectors; 19 - Urban Local;

MOBILE6 Emission Factors
For Orange County

Year: 2018

VOC Rate (gram/mile)

Road Type	Average Vehicle Speed (mph) 2.5	5.0	7.5	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0
01	2.19	0.91	0.66	0.54	0.43	0.38	0.35	0.32	0.31	0.30	0.29	0.28	0.28	0.28	0.28
02/06	2.01	0.80	0.58	0.47	0.38	0.33	0.30	0.28	0.27	0.26	0.26	0.25	0.25	0.25	0.25
07/08/09	1.97	0.78	0.56	0.45	0.37	0.32	0.29	0.28	0.26	0.26	0.25	0.25	0.24	0.24	0.24
11/12	2.07	0.83	0.60	0.48	0.38	0.34	0.31	0.30	0.28	0.27	0.27	0.26	0.26	0.25	0.26
14/16	2.00	0.79	0.57	0.46	0.37	0.32	0.30	0.28	0.27	0.26	0.25	0.25	0.24	0.24	0.24
17/19	1.98	0.78	0.56	0.45	0.37	0.32	0.29	0.28	0.26	0.26	0.25	0.24	0.24	0.24	0.24

NOx Rate (gram/mile)

Road Type	Average Vehicle Speed (mph) 2.5	5.0	7.5	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0
01	0.84	0.76	0.66	0.61	0.53	0.52	0.50	0.50	0.50	0.51	0.53	0.56	0.60	0.66	0.73
02/06	0.53	0.46	0.40	0.38	0.32	0.29	0.28	0.27	0.26	0.27	0.28	0.29	0.30	0.32	0.35
07/08/09	0.49	0.43	0.37	0.35	0.30	0.27	0.25	0.24	0.24	0.24	0.25	0.26	0.27	0.29	0.31
11/12	0.63	0.56	0.48	0.43	0.36	0.35	0.35	0.35	0.35	0.35	0.37	0.38	0.41	0.44	0.48
14/16	0.51	0.44	0.39	0.36	0.31	0.28	0.26	0.25	0.25	0.25	0.26	0.27	0.28	0.30	0.32
17/19	0.48	0.41	0.36	0.33	0.28	0.26	0.24	0.23	0.23	0.23	0.24	0.25	0.26	0.27	0.29

CO Rate (gram/mile)

Road Type	Average Vehicle Speed (mph) 2.5	5.0	7.5	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0
01	22.09	16.09	13.45	12.13	10.65	10.11	9.77	9.56	9.50	9.69	9.92	10.19	10.50	10.88	11.33
02/06	21.85	15.64	13.52	12.46	11.40	10.85	10.54	10.42	10.43	10.70	10.98	11.28	11.59	11.94	12.31
07/08/09	21.74	15.52	13.44	12.40	11.40	10.88	10.58	10.48	10.50	10.78	11.07	11.37	11.68	12.03	12.39
11/12	21.93	15.78	13.32	12.08	10.85	10.50	10.28	10.14	10.14	10.38	10.65	10.93	11.24	11.60	12.00
14/16	21.85	15.62	13.52	12.47	11.45	10.91	10.61	10.50	10.52	10.79	11.08	11.38	11.68	12.03	12.40
17/19	21.82	15.57	13.50	12.46	11.47	10.97	10.68	10.58	10.61	10.89	11.18	11.48	11.79	12.14	12.50

Note: 01 - Rural Interstate; 02 - Rural Principal Arterial; 06 - Rural Minor Arterial;
07 - Rural Major Collectors; 08 - Rural Minor Collectors; 09 - Rural Local;

11 - Urban Interstate; 12 - Urban Freeways and Expressways; 14 - Urban Principal Arterial;
16 - Urban Minor Arterial; 17 - Urban Collectors; 19 - Urban Local;

Microscale Analyses
CAL3QHC Output Files

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 CO EXISTING 1-HR FRIDAY PM

DATE : 8/16/10
TIME : 13:22:44

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	441.	5.2	0.0	43.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	163.	5.2	0.0	43.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	409.	5.2	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	38.	5.2	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	38.	13.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1600.0	*	122.	180.	AG	371.	13.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 CO EXISTING 1-HR FRIDAY PM

DATE : 8/16/10
TIME : 13:22:44

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 CO EXISTING 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.3	0.2	0.2	0.4	0.4	0.1	0.0	0.0
5.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.4	0.4	0.4	0.1	0.1	0.0
10.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.4	0.5	0.5	0.1	0.1	0.0
15.	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.5	0.5	0.1	0.1	0.1
20.	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.3	0.5	0.5	0.3	0.1	0.1
25.	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.4	0.5	0.4	0.2	0.1
30.	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.3	0.2	0.2
35.	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.3	0.2
40.	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.2	0.1
45.	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.2	0.2	0.1
50.	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.1	0.1
55.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.1	0.1
60.	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.1	0.1
65.	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.1	0.1
70.	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.1	0.0
75.	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.1	0.0
80.	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.1	0.0
85.	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.1	0.0
90.	0.1	0.1	0.2	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.1	0.0
95.	0.0	0.1	0.2	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.1	0.0
100.	0.0	0.1	0.2	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.1	0.0
105.	0.0	0.1	0.2	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.1	0.0
110.	0.0	0.1	0.2	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.1	0.0
115.	0.0	0.1	0.2	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.1	0.0
120.	0.0	0.1	0.2	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.0	0.0
125.	0.0	0.1	0.2	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.0	0.0
130.	0.0	0.1	0.2	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.0	0.0
135.	0.0	0.0	0.2	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.1	0.0
140.	0.0	0.0	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.0
145.	0.0	0.0	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.0
150.	0.0	0.0	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.0
155.	0.0	0.1	0.2	0.3	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1
160.	0.0	0.1	0.2	0.3	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1
165.	0.0	0.1	0.1	0.3	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.1	0.1	0.1
170.	0.0	0.1	0.1	0.3	0.4	0.3	0.0	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.1	0.1	0.0
175.	0.0	0.0	0.1	0.2	0.3	0.5	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.1	0.1	0.0
180.	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.1	0.0	0.0
185.	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0
190.	0.1	0.1	0.0	0.1	0.1	0.3	0.2	0.4	0.5	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0
195.	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.5	0.5	0.4	0.4	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
200.	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.4	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
205.	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.4	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 CO EXISTING 1-HR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
215.	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
220.	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
225.	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
230.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
235.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
240.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
245.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
250.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
255.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
260.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
265.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
270.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
275.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
280.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
285.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
290.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
295.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
300.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
305.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
310.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
315.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
320.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
325.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.3	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
330.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.4	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
335.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.3	0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
340.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.4	0.4	0.4	0.2	0.0	0.0	0.0	0.1	0.0	0.0
345.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.4	0.4	0.4	0.3	0.0	0.0	0.1	0.1	0.0	0.0
350.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.4	0.4	0.4	0.3	0.1	0.1	0.2	0.1	0.0	0.0
355.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.1	0.0	0.0
MAX	0.2	0.2	0.3	0.3	0.4	0.5	0.3	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.4	0.5	0.5	0.4	0.3	0.2
DEGR.	50	35	140	90	155	175	195	195	190	180	190	0	340	345	5	10	10	25	35	30

THE HIGHEST CONCENTRATION OF 0.50 PPM OCCURRED AT RECEPTOR REC16.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO NO-BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:16: 6

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	596.	3.7	0.0	43.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	311.	3.7	0.0	43.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	506.	3.5	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	42.	3.5	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	42.	8.7	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1600.0	*	122.	180.	AG	464.	8.7	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO NO-BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:16: 6

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO NO-BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.2	0.4	0.3	0.1	0.0	0.1
5.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.3	0.4	0.4	0.1	0.1	0.1
10.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.3	0.4	0.4	0.1	0.1	0.1
15.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.3	0.4	0.4	0.1	0.1	0.2
20.	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.3	0.4	0.4	0.3	0.1	0.2
25.	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.4	0.4	0.3	0.2	0.1
30.	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.1
35.	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.2	0.2
40.	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.1	0.1
45.	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.1	0.1
50.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.1
55.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.1
60.	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1
65.	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1
70.	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.0
75.	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0
80.	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0
85.	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0
90.	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0
95.	0.0	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0
100.	0.0	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0
105.	0.0	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0
110.	0.0	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0
115.	0.0	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0
120.	0.0	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0
125.	0.0	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0
130.	0.0	0.1	0.2	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0
135.	0.0	0.0	0.2	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.0	0.0
140.	0.0	0.0	0.2	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.0	0.0
145.	0.0	0.0	0.2	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.0	0.0
150.	0.0	0.0	0.2	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0
155.	0.0	0.0	0.2	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0
160.	0.0	0.0	0.1	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0
165.	0.0	0.0	0.1	0.3	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.0
170.	0.0	0.0	0.1	0.2	0.3	0.3	0.0	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.0
175.	0.1	0.1	0.0	0.2	0.3	0.3	0.0	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.0
180.	0.1	0.1	0.0	0.1	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0
185.	0.1	0.1	0.0	0.1	0.2	0.3	0.2	0.4	0.4	0.4	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
190.	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.4	0.4	0.4	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
195.	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
200.	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
205.	0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO NO-BUILD 1-HR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
215.	0.0	0.1	0.1	0.0	0.1	0.1	0.3	0.5	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
220.	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.4	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
225.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
230.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
235.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
240.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
245.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
250.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
255.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
260.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
265.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
270.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
275.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
280.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
285.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
290.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
295.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
300.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
305.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
310.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
315.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
320.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
325.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
330.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.3	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
335.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
340.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
345.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.4	0.3	0.3	0.2	0.0	0.0	0.1	0.1	0.0	0.0
350.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.4	0.3	0.3	0.2	0.0	0.1	0.2	0.1	0.0	0.1
355.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.3	0.1	0.0	0.1
MAX	0.1	0.2	0.2	0.3	0.4	0.3	0.3	0.5	0.4	0.4	0.4	0.4	0.3	0.2	0.3	0.4	0.4	0.3	0.2	0.2
DEGR.	25	35	30	140	165	160	205	215	185	185	345	355	0	0	5	0	5	20	25	15

THE HIGHEST CONCENTRATION OF 0.50 PPM OCCURRED AT RECEPTOR REC8 .

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO BUILD 1-HOUR FRIDAY PM

DATE : 9/10/10
TIME : 10:17:41

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2	* LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	636.0	1668.0	1136.0	2534.0	1000.	30.	AG	1325.	3.7	0.0	67.7		
2. RTE 161 S FREE FLOW	636.0	1668.0	136.0	802.0	1000.	210.	AG	1196.	3.7	0.0	67.7		
3. RTE 17 OFF FRE FLOW	684.0	1746.0	684.0	746.0	1000.	180.	AG	1030.	3.4	0.0	31.7		
4. RT 17 OFF LT FRE FL	636.6	1668.9	684.0	1641.9	55.	120.	AG	42.	3.4	0.0	31.7		
5. RT 17 OFF LT QUEUE	651.0	1666.5	684.0	1647.0	38.	121.	AG	42.	8.7	0.0	31.7		
6. RT 17 OFF RT QUEUE	684.0	1722.0	684.0	1400.0	322.	180.	AG	988.	8.7	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO BUILD 1-HOUR FRIDAY PM

DATE : 9/10/10
TIME : 10:17:41

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0
21. RECEPTOR NO. 7-21	668.0	1533.0	6.0
22. RECEPTOR NO. 7-22	700.0	1533.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO BUILD 1-HOUR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.5	0.6	0.5	0.7	0.7	0.7	0.7	0.6	0.2	0.2	0.2
5.	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.4	0.5	0.4	0.5	0.5	0.8	0.8	0.8	0.2	0.2	0.3
10.	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.4	0.8	0.9	0.9	0.2	0.3	0.3
15.	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	1.0	0.9	0.9	0.5	0.3	0.3
20.	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.8	0.9	0.9	0.5	0.6	0.4
25.	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.8	0.8	0.9	0.7	0.6	0.5
30.	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.7	0.7	0.7	0.6	0.7	0.6
35.	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.6	0.6	0.7	0.6	0.6	0.5
40.	0.3	0.3	0.4	0.4	0.4	0.4	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.5	0.5	0.4
45.	0.4	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.4	0.5	0.4
50.	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4
55.	0.4	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4
60.	0.5	0.4	0.4	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
65.	0.4	0.4	0.4	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
70.	0.2	0.4	0.4	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
75.	0.2	0.4	0.4	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
80.	0.3	0.4	0.5	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
85.	0.3	0.4	0.5	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
90.	0.3	0.4	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
95.	0.3	0.5	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
100.	0.3	0.5	0.4	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
105.	0.2	0.5	0.4	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
110.	0.2	0.3	0.4	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
115.	0.3	0.4	0.4	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
120.	0.3	0.4	0.4	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
125.	0.3	0.4	0.4	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.3
130.	0.3	0.4	0.4	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.3
135.	0.3	0.4	0.4	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.4	0.3	0.3
140.	0.3	0.4	0.4	0.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.4	0.3	0.3
145.	0.3	0.4	0.4	0.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.4	0.3	0.3
150.	0.3	0.4	0.5	0.5	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.7	0.7	0.4	0.3	0.2
155.	0.3	0.4	0.5	0.5	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.4	0.3	0.2
160.	0.3	0.5	0.5	0.5	0.7	0.4	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.7	0.7	0.7	0.4	0.3	0.2
165.	0.2	0.4	0.5	0.6	0.7	0.7	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.9	0.9	0.9	0.5	0.3	0.1
170.	0.3	0.4	0.4	0.6	0.8	0.8	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.9	0.9	0.9	0.4	0.2	0.1
175.	0.2	0.3	0.4	0.6	0.8	0.9	0.2	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.8	0.8	0.9	0.3	0.2	0.1
180.	0.2	0.2	0.3	0.4	0.7	0.9	0.3	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.8	0.2	0.1	0.1
185.	0.2	0.2	0.3	0.4	0.6	0.7	0.6	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.5	0.5	0.5	0.3	0.1	0.1
190.	0.2	0.2	0.3	0.2	0.5	0.6	0.7	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.3	0.3	0.3	0.1	0.1	0.1
195.	0.3	0.3	0.3	0.3	0.3	0.5	0.7	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.2	0.2	0.2	0.1	0.1	0.1
200.	0.3	0.3	0.4	0.3	0.4	0.5	0.7	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.1	0.1	0.1	0.2	0.2	0.2
205.	0.3	0.3	0.4	0.3	0.4	0.4	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.0	0.0	0.1	0.3	0.3	0.3

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO BUILD 1-HOUR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20	REC21	REC22
210.	0.3	0.3	0.3	0.3	0.4	0.4	0.7	1.0	0.9	0.8	0.8	0.8	0.7	0.6	0.1	0.1	0.1	0.3	0.3	0.3		
215.	0.3	0.3	0.2	0.3	0.4	0.3	0.7	0.9	0.9	0.8	0.7	0.7	0.7	0.7	0.1	0.1	0.2	0.3	0.3	0.3		
220.	0.2	0.2	0.2	0.2	0.2	0.3	0.6	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.1	0.2	0.2	0.3	0.3	0.3		
225.	0.1	0.1	0.1	0.2	0.1	0.1	0.5	0.7	0.8	0.7	0.7	0.6	0.6	0.6	0.1	0.2	0.2	0.3	0.3	0.3		
230.	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.1	0.2	0.2	0.3	0.3	0.3		
235.	0.1	0.1	0.0	0.1	0.1	0.1	0.3	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.2	0.2	0.2	0.2		
240.	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.2	0.2	0.2	0.2		
245.	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.6	0.6	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.2	0.2	0.2		
250.	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.5	0.6	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.2	0.2	0.2		
255.	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.5	0.6	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.2	0.1	0.1		
260.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.6	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.2	0.1	0.1		
265.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.2	0.1	0.1		
270.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
275.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
280.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
285.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
290.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
295.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
300.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
305.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.5	0.5	0.4	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
310.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
315.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.5	0.6	0.6	0.6	0.6	0.1	0.1	0.1	0.1	0.1	0.1		
320.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.6	0.7	0.7	0.6	0.7	0.1	0.1	0.1	0.2	0.1	0.1		
325.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.6	0.7	0.7	0.7	0.6	0.1	0.1	0.2	0.2	0.1	0.1		
330.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.6	0.7	0.7	0.7	0.6	0.1	0.1	0.1	0.2	0.1	0.1		
335.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.6	0.7	0.8	0.8	0.8	0.1	0.2	0.1	0.2	0.1	0.1		
340.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.6	0.7	0.8	0.8	0.8	0.2	0.3	0.2	0.2	0.1	0.1		
345.	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.6	0.7	0.8	0.8	0.9	0.3	0.2	0.2	0.2	0.2	0.1		
350.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.5	0.7	0.8	0.8	0.8	0.4	0.4	0.3	0.2	0.2	0.2		
355.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.5	0.6	0.7	0.8	0.8	0.5	0.5	0.4	0.3	0.2	0.2		
MAX	0.5	0.5	0.5	0.6	0.8	0.9	0.8	1.0	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.7	0.7	0.6		
DEGR.	60	95	80	165	170	175	205	190	185	185	185	185	190	190	15	165	165	25	30	30		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO BUILD 1-HOUR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC21	REC22
0.	0.7	0.7
5.	0.8	0.5
10.	0.9	0.4
15.	0.9	0.2
20.	0.8	0.2
25.	0.8	0.1
30.	0.8	0.0
35.	0.6	0.0
40.	0.6	0.0
45.	0.5	0.0
50.	0.4	0.0
55.	0.4	0.0
60.	0.4	0.0
65.	0.4	0.0
70.	0.4	0.0
75.	0.4	0.0
80.	0.4	0.0
85.	0.4	0.0
90.	0.4	0.0
95.	0.4	0.0
100.	0.4	0.0
105.	0.4	0.0
110.	0.4	0.0
115.	0.4	0.0
120.	0.4	0.0
125.	0.4	0.0
130.	0.4	0.0
135.	0.5	0.0
140.	0.6	0.0
145.	0.6	0.0
150.	0.6	0.0
155.	0.7	0.0
160.	0.7	0.1
165.	0.8	0.2
170.	0.8	0.3
175.	0.8	0.5
180.	0.7	0.7
185.	0.5	0.8
190.	0.3	0.8
195.	0.2	0.8
200.	0.1	0.7
205.	0.0	0.7

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO BUILD 1-HOUR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC21	REC22
210.	0.0	0.6
215.	0.1	0.7
220.	0.1	0.7
225.	0.1	0.6
230.	0.1	0.5
235.	0.1	0.5
240.	0.1	0.5
245.	0.1	0.5
250.	0.1	0.5
255.	0.1	0.5
260.	0.1	0.5
265.	0.1	0.5
270.	0.1	0.5
275.	0.1	0.5
280.	0.1	0.5
285.	0.1	0.5
290.	0.1	0.5
295.	0.1	0.5
300.	0.1	0.5
305.	0.1	0.5
310.	0.1	0.5
315.	0.1	0.6
320.	0.1	0.7
325.	0.1	0.7
330.	0.1	0.7
335.	0.1	0.7
340.	0.2	0.8
345.	0.2	0.9
350.	0.4	0.9
355.	0.5	0.8
MAX	0.9	0.9
DEGR.	10	345

THE HIGHEST CONCENTRATION OF 1.00 PPM OCCURRED AT RECEPTOR REC15.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO CUMULATIVE BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:18: 6

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2	* LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	636.0	1668.0	1136.0	2534.0	1000.	30.	AG	1588.	3.7	0.0	67.7		
2. RTE 161 S FREE FLOW	636.0	1668.0	136.0	802.0	1000.	210.	AG	1393.	3.7	0.0	67.7		
3. RTE 17 OFF FRE FLOW	684.0	1746.0	684.0	746.0	1000.	180.	AG	1001.	3.4	0.0	31.7		
4. RT 17 OFF LT FRE FL	636.6	1668.9	684.0	1641.9	55.	120.	AG	42.	3.4	0.0	31.7		
5. RT 17 OFF LT QUEUE	651.0	1666.5	684.0	1647.0	38.	121.	AG	42.	8.7	0.0	31.7		
6. RT 17 OFF RT QUEUE	684.0	1722.0	684.0	1400.0	322.	180.	AG	959.	8.7	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO CUMULATIVE BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:18: 6

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0
21. RECEPTOR NO. 7-21	668.0	1533.0	6.0
22. RECEPTOR NO. 7-22	700.0	1533.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO CUMULATIVE BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.0	0.0	0.1	0.1	0.1	0.1	0.3	0.3	0.4	0.5	0.5	0.6	0.7	0.7	0.7	0.8	0.6	0.3	0.2	0.2
5.	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.5	0.4	0.5	0.5	0.4	0.5	0.9	0.8	0.8	0.3	0.3	0.3
10.	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.4	0.9	0.9	0.8	0.4	0.3	0.3
15.	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.9	0.9	1.0	0.5	0.4	0.4
20.	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.2	0.3	0.2	0.2	0.9	0.9	1.0	0.6	0.5	0.4
25.	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.8	0.9	0.8	0.7	0.7	0.6
30.	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.7	0.7	0.8	0.7	0.7	0.6
35.	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.6	0.7	0.7	0.6	0.7	0.6
40.	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.5	0.6	0.5
45.	0.5	0.3	0.4	0.4	0.4	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.4	0.5	0.5	0.5
50.	0.5	0.4	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4
55.	0.5	0.4	0.4	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.3
60.	0.4	0.4	0.5	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.4	0.3
65.	0.3	0.5	0.5	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
70.	0.3	0.5	0.4	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
75.	0.3	0.5	0.4	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.3
80.	0.3	0.4	0.5	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
85.	0.3	0.4	0.5	0.4	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
90.	0.3	0.4	0.5	0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
95.	0.3	0.4	0.5	0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
100.	0.2	0.4	0.5	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
105.	0.2	0.4	0.5	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
110.	0.2	0.3	0.5	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
115.	0.2	0.3	0.5	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
120.	0.3	0.3	0.5	0.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
125.	0.3	0.4	0.5	0.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.2
130.	0.3	0.4	0.5	0.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.3	0.3	0.3
135.	0.3	0.5	0.4	0.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.3	0.3	0.3
140.	0.3	0.5	0.5	0.5	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.4	0.3	0.3
145.	0.4	0.5	0.5	0.6	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.4	0.3	0.3
150.	0.4	0.5	0.5	0.6	0.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.4	0.3	0.2
155.	0.4	0.5	0.5	0.6	0.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.4	0.3	0.2
160.	0.4	0.5	0.5	0.6	0.8	0.5	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.7	0.7	0.7	0.4	0.3	0.2
165.	0.3	0.4	0.5	0.6	0.8	0.7	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.8	0.9	0.9	0.5	0.3	0.2
170.	0.3	0.4	0.4	0.5	0.8	0.7	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.8	0.9	0.9	0.4	0.2	0.1
175.	0.2	0.3	0.4	0.6	0.8	0.9	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.8	0.8	0.8	0.3	0.2	0.1
180.	0.2	0.2	0.4	0.5	0.7	0.8	0.4	0.8	0.8	0.8	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.3	0.2	0.1
185.	0.3	0.3	0.3	0.5	0.6	0.8	0.6	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.5	0.5	0.5	0.3	0.1	0.1
190.	0.3	0.3	0.3	0.4	0.4	0.7	0.7	1.0	0.9	0.9	0.9	0.9	0.9	0.8	0.3	0.3	0.3	0.1	0.1	0.1
195.	0.3	0.3	0.4	0.4	0.4	0.5	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.2	0.2	0.2	0.2	0.2	0.2
200.	0.4	0.4	0.4	0.4	0.4	0.4	0.8	0.9	0.8	0.7	0.7	0.7	0.7	0.7	0.1	0.1	0.1	0.2	0.2	0.2
205.	0.4	0.4	0.5	0.4	0.4	0.4	0.7	1.0	0.8	0.8	0.8	0.7	0.7	0.7	0.0	0.0	0.1	0.3	0.3	0.3

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO CUMULATIVE BUILD 1-HR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20	REC21	REC22
210.	0.4	0.4	0.4	0.5	0.4	0.4	0.7	1.0	0.9	0.8	0.7	0.7	0.7	0.6	0.1	0.1	0.1	0.4	0.4	0.4		
215.	0.3	0.3	0.3	0.3	0.4	0.4	0.7	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.1	0.1	0.2	0.4	0.4	0.4		
220.	0.2	0.2	0.2	0.2	0.3	0.3	0.6	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.1	0.2	0.2	0.4	0.4	0.4		
225.	0.1	0.1	0.1	0.2	0.2	0.2	0.5	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.2	0.2	0.2	0.3	0.3	0.3		
230.	0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.6	0.7	0.6	0.6	0.6	0.5	0.5	0.2	0.2	0.2	0.3	0.3	0.3		
235.	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.1	0.2	0.2	0.3	0.3	0.3		
240.	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.1	0.2	0.2	0.2	0.2	0.2		
245.	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.6	0.6	0.5	0.5	0.5	0.5	0.1	0.1	0.2	0.2	0.2	0.2		
250.	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.6	0.6	0.5	0.5	0.5	0.5	0.1	0.1	0.2	0.2	0.2	0.2		
255.	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.6	0.6	0.5	0.5	0.5	0.5	0.1	0.1	0.2	0.2	0.2	0.2		
260.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6	0.6	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.2	0.2	0.2		
265.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.2	0.2	0.2		
270.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.2	0.2	0.1		
275.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.2	0.2	0.1		
280.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6	0.5	0.6	0.5	0.5	0.5	0.1	0.1	0.1	0.2	0.1	0.1		
285.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6	0.5	0.6	0.5	0.5	0.5	0.1	0.1	0.1	0.2	0.1	0.1		
290.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
295.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6	0.6	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
300.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6	0.6	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
305.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.6	0.5	0.6	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
310.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1		
315.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.6	0.6	0.1	0.1	0.1	0.1	0.1	0.1		
320.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.6	0.7	0.7	0.7	0.7	0.1	0.1	0.2	0.2	0.1	0.1		
325.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.7	0.7	0.7	0.7	0.7	0.1	0.1	0.2	0.2	0.1	0.1		
330.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.7	0.7	0.7	0.7	0.7	0.1	0.1	0.2	0.2	0.1	0.1		
335.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.7	0.7	0.7	0.8	0.8	0.1	0.2	0.1	0.2	0.2	0.2		
340.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.7	0.7	0.8	0.8	0.8	0.2	0.3	0.2	0.2	0.2	0.2		
345.	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.6	0.8	0.8	0.8	0.8	0.3	0.2	0.2	0.2	0.3	0.2		
350.	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.5	0.8	0.7	0.8	0.8	0.4	0.4	0.4	0.3	0.3	0.2		
355.	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.7	0.7	0.8	0.5	0.4	0.5	0.3	0.2	0.2		
MAX	0.5	0.5	0.5	0.6	0.8	0.9	0.8	1.0	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	1.0	0.7	0.7	0.6		
DEGR.	40	65	35	145	160	175	200	190	185	185	185	190	190	185	5	165	15	25	25	25		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO CUMULATIVE BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC21	REC22
0.	0.7	0.7
5.	0.8	0.5
10.	0.9	0.4
15.	1.0	0.2
20.	0.8	0.2
25.	0.8	0.1
30.	0.7	0.0
35.	0.6	0.0
40.	0.6	0.0
45.	0.5	0.0
50.	0.4	0.0
55.	0.4	0.0
60.	0.4	0.0
65.	0.4	0.0
70.	0.4	0.0
75.	0.4	0.0
80.	0.4	0.0
85.	0.4	0.0
90.	0.4	0.0
95.	0.4	0.0
100.	0.4	0.0
105.	0.4	0.0
110.	0.4	0.0
115.	0.4	0.0
120.	0.4	0.0
125.	0.4	0.0
130.	0.4	0.0
135.	0.5	0.0
140.	0.6	0.0
145.	0.6	0.0
150.	0.6	0.0
155.	0.7	0.0
160.	0.7	0.1
165.	0.8	0.2
170.	0.8	0.3
175.	0.7	0.4
180.	0.6	0.6
185.	0.4	0.7
190.	0.3	0.8
195.	0.2	0.8
200.	0.1	0.7
205.	0.0	0.7

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 CO CUMULATIVE BUILD 1-HR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC21	REC22
210.	0.0	0.6
215.	0.1	0.7
220.	0.1	0.7
225.	0.1	0.6
230.	0.1	0.5
235.	0.1	0.5
240.	0.1	0.5
245.	0.1	0.5
250.	0.1	0.5
255.	0.1	0.5
260.	0.1	0.5
265.	0.1	0.5
270.	0.1	0.5
275.	0.1	0.5
280.	0.1	0.5
285.	0.1	0.5
290.	0.1	0.5
295.	0.1	0.5
300.	0.1	0.5
305.	0.1	0.5
310.	0.1	0.5
315.	0.1	0.6
320.	0.1	0.7
325.	0.1	0.7
330.	0.1	0.7
335.	0.1	0.7
340.	0.2	0.8
345.	0.3	0.9
350.	0.4	0.9
355.	0.5	0.8
MAX	1.0	0.9
DEGR.	15	345

THE HIGHEST CONCENTRATION OF 1.00 PPM OCCURRED AT RECEPTOR REC17.

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 CO BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 11:20: 4

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	1596.0	3465.0	1596.0	4465.0	*	1000.	360.	AG	763.	3.7	0.0	55.7		
2. RTE 161 S FREE FLOW	*	1608.0	3465.0	1608.0	2465.0	*	1000.	180.	AG	1201.	3.7	0.0	79.7		
3. SITE DRIVE FRE FLOW	*	1600.0	3455.0	2100.0	3455.0	*	500.	90.	AG	2060.	3.5	0.0	79.7		
4. SITE DRIVE FRE FLOW	*	2100.0	3455.0	2453.6	3101.4	*	500.	135.	AG	2060.	3.5	0.0	43.7		
5. RT 161 NB RGT QUEUE	*	1632.0	3425.0	1632.0	-807.5	*	4232.	180.	AG	72.	100.0	0.0	12.0	2.04	215.0
6. RT 161 NB THR QUEUE	*	1614.0	3425.0	1614.0	3328.0	*	97.	180.	AG	143.	100.0	0.0	24.0	0.73	4.9
7. RT 161 SB LFT QUEUE	*	1596.0	3497.0	1596.0	3559.8	*	63.	360.	AG	75.	100.0	0.0	12.0	0.53	3.2
8. RT 161 SB THR QUEUE	*	1584.0	3497.0	1584.0	3551.5	*	55.	360.	AG	47.	100.0	0.0	12.0	0.30	2.8
9. SITE DR. LEFT QUEUE	*	1646.0	3461.0	1772.3	3461.0	*	126.	90.	AG	110.	100.0	0.0	24.0	0.72	6.4
10. SITE DR. RIGHT QUEUE	*	1646.0	3473.0	1702.3	3473.0	*	56.	90.	AG	55.	100.0	0.0	12.0	0.32	2.9

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 CO BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 11:20: 4

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
5. RT 161 NB RGT QUEUE	90	65	2.0	761	1600	37.00	2	3
6. RT 161 NB THR QUEUE	90	65	2.0	547	1600	37.00	2	3
7. RT 161 SB LFT QUEUE	90	68	2.0	169	1600	37.00	2	3
8. RT 161 SB THR QUEUE	90	43	2.0	232	1600	37.00	2	3
9. SITE DR. LEFT QUEUE	90	50	2.0	924	1600	37.00	2	3
10. SITE DR. RIGHT QUEUE	90	50	2.0	206	1600	37.00	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 9-1	1568.0	3305.0	6.0
2. RECEPTOR NO. 9-2	1568.0	3385.0	6.0
3. RECEPTOR NO. 9-3	1568.0	3465.0	6.0
4. RECEPTOR NO. 9-4	1568.0	3505.0	6.0
5. RECEPTOR NO. 9-5	1568.0	3545.0	6.0
6. RECEPTOR NO. 9-6	1568.0	3585.0	6.0
7. RECEPTOR NO. 9-7	1568.0	3625.0	6.0
8. RECEPTOR NO. 9-8	1568.0	3665.0	6.0
9. RECEPTOR NO. 9-9	1624.0	3665.0	6.0
10. RECEPTOR NO. 9-10	1624.0	3585.0	6.0
11. RECEPTOR NO. 9-11	1624.0	3545.0	6.0
12. RECEPTOR NO. 9-12	1624.0	3513.0	6.0
13. RECEPTOR NO. 9-13	1624.0	3495.0	6.0
14. RECEPTOR NO. 9-14	1658.0	3495.0	6.0
15. RECEPTOR NO. 9-15	1698.0	3495.0	6.0
16. RECEPTOR NO. 9-16	1738.0	3495.0	6.0
17. RECEPTOR NO. 9-17	1778.0	3495.0	6.0
18. RECEPTOR NO. 9-18	1778.0	3415.0	6.0
19. RECEPTOR NO. 9-19	1698.0	3415.0	6.0
20. RECEPTOR NO. 9-20	1648.0	3415.0	6.0
21. RECEPTOR NO. 9-21	1648.0	3385.0	6.0
22. RECEPTOR NO. 9-22	1648.0	3345.0	6.0
23. RECEPTOR NO. 9-23	1648.0	3305.0	6.0
24. RECEPTOR NO. 9-24	1648.0	3265.0	6.0
25. RECEPTOR NO. 9-25	1648.0	3150.0	6.0
26. RECEPTOR NO. 9-26	1900.0	3495.0	6.0
27. RECEPTOR NO. 9-27	2000.0	3495.0	6.0
28. RECEPTOR NO. 9-28	1568.0	3800.0	6.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 CO BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.3	0.5	0.4
5.	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5
10.	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5
15.	0.5	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
20.	0.5	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
25.	0.8	0.2	0.4	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
30.	0.8	0.2	0.4	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
35.	0.8	0.3	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
40.	0.8	0.4	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
45.	0.7	0.5	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
50.	0.7	0.6	0.1	0.4	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.6
55.	0.6	0.7	0.2	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.6
60.	0.5	0.9	0.2	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.5
65.	0.4	0.9	0.2	0.4	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.5
70.	0.4	0.8	0.3	0.4	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.5
75.	0.4	0.8	0.4	0.4	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.4	0.4	0.5
80.	0.2	0.7	0.6	0.4	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.4	0.5
85.	0.2	0.6	0.7	0.5	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
90.	0.2	0.6	0.8	0.6	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.3
95.	0.2	0.5	0.7	0.6	0.5	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3
100.	0.2	0.5	0.6	0.8	0.5	0.2	0.1	0.1	0.0	0.1	0.1	0.3	0.7	0.6	0.6	0.5	0.4	0.2	0.2	0.2
105.	0.2	0.5	0.6	1.0	0.7	0.2	0.2	0.1	0.0	0.1	0.3	0.5	0.9	0.7	0.6	0.5	0.5	0.2	0.2	0.2
110.	0.2	0.5	0.4	0.9	0.8	0.3	0.2	0.2	0.0	0.2	0.3	0.6	0.8	0.8	0.6	0.4	0.4	0.1	0.0	0.0
115.	0.2	0.5	0.3	0.6	0.7	0.3	0.3	0.3	0.2	0.2	0.4	0.6	0.7	0.7	0.6	0.4	0.4	0.0	0.0	0.0
120.	0.2	0.5	0.4	0.5	0.8	0.3	0.2	0.3	0.2	0.1	0.3	0.5	0.7	0.7	0.5	0.4	0.4	0.0	0.0	0.0
125.	0.2	0.5	0.4	0.4	0.8	0.4	0.2	0.2	0.2	0.1	0.3	0.6	0.7	0.7	0.6	0.4	0.3	0.0	0.0	0.0
130.	0.2	0.5	0.5	0.5	0.7	0.4	0.3	0.2	0.1	0.2	0.4	0.5	0.7	0.7	0.6	0.4	0.3	0.0	0.0	0.0
135.	0.2	0.4	0.5	0.3	0.7	0.4	0.3	0.3	0.1	0.2	0.4	0.5	0.5	0.6	0.5	0.4	0.2	0.0	0.0	0.0
140.	0.3	0.5	0.6	0.5	0.7	0.4	0.3	0.3	0.1	0.2	0.5	0.5	0.5	0.6	0.5	0.4	0.2	0.0	0.0	0.0
145.	0.3	0.4	0.6	0.5	0.5	0.5	0.3	0.3	0.2	0.2	0.5	0.5	0.3	0.6	0.5	0.4	0.2	0.0	0.0	0.0
150.	0.3	0.4	0.6	0.6	0.8	0.6	0.4	0.3	0.2	0.2	0.4	0.4	0.3	0.6	0.5	0.5	0.2	0.0	0.0	0.0
155.	0.3	0.4	0.6	0.6	0.7	0.8	0.4	0.3	0.2	0.2	0.3	0.3	0.4	0.6	0.5	0.5	0.2	0.0	0.0	0.0
160.	0.4	0.4	0.6	0.7	0.7	0.7	0.6	0.3	0.2	0.2	0.2	0.5	0.5	0.6	0.5	0.5	0.2	0.0	0.0	0.0
165.	0.5	0.5	0.7	0.7	0.8	0.7	0.7	0.6	0.2	0.3	0.4	0.6	0.6	0.6	0.6	0.5	0.2	0.0	0.0	0.0
170.	0.5	0.5	0.6	0.6	0.7	0.8	0.7	0.6	0.4	0.5	0.6	0.6	0.8	0.7	0.6	0.5	0.2	0.0	0.0	0.2
175.	0.5	0.5	0.6	0.5	0.6	0.7	0.7	0.6	0.6	0.6	0.7	0.9	0.9	0.9	0.7	0.6	0.2	0.0	0.1	0.4
180.	0.4	0.4	0.4	0.4	0.6	0.6	0.5	0.4	0.6	0.7	0.9	0.9	1.2	0.9	0.9	0.6	0.4	0.1	0.3	0.6
185.	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.6	0.7	0.8	1.1	1.1	1.1	0.9	0.7	0.4	0.1	0.3	0.8
190.	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.5	0.6	0.7	0.7	0.9	1.2	0.9	0.8	0.5	0.1	0.3	0.8
195.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.5	0.7	0.7	1.1	0.9	0.7	0.6	0.2	0.3	0.9
200.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.4	0.5	1.0	1.0	0.7	0.6	0.2	0.3	0.8
205.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.3	0.4	0.3	0.9	0.9	0.7	0.6	0.2	0.2	0.8

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 CO BUILD 1-HR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28													
210.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.2	0.3	0.3	0.8	1.0	0.8	0.7	0.2	0.2	0.9
215.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.2	0.3	0.3	0.4	1.0	0.8	0.7	0.2	0.3	0.9
220.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.1	0.3	0.4	1.0	0.8	0.8	0.2	0.3	0.8
225.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.1	0.3	0.4	1.0	0.8	0.8	0.2	0.3	0.7
230.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.1	0.2	0.3	0.7	0.9	0.9	0.2	0.4	0.7
235.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.2	0.2	0.3	0.7	0.9	0.9	0.2	0.4	0.7
240.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.2	0.2	0.3	0.5	0.9	0.8	0.3	0.4	0.7
245.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.2	0.2	0.1	0.5	0.9	0.8	0.3	0.4	0.7
250.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.2	0.2	0.1	0.4	0.7	0.8	0.3	0.4	0.7
255.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.3	0.2	0.2	0.3	0.4	0.6	0.3	0.4	0.6
260.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.3	0.2	0.2	0.2	0.4	0.6	0.4	0.5	0.6
265.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.4	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.7
270.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.4	0.2	0.2	0.1	0.1	0.3	0.4	0.5	0.7
275.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.4	0.2	0.3	0.2	0.1	0.1	0.4	0.5	0.7
280.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.3	0.2	0.2	0.1	0.1	0.4	0.4	0.6
285.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.3	0.3	0.1	0.1	0.0	0.4	0.3	0.6
290.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.3	0.3	0.1	0.0	0.0	0.5	0.3	0.5
295.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.4	0.3	0.1	0.0	0.0	0.5	0.3	0.4
300.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.4	0.2	0.1	0.0	0.0	0.7	0.3	0.4
305.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.4	0.2	0.0	0.0	0.0	0.6	0.3	0.3
310.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.4	0.4	0.2	0.0	0.0	0.0	0.6	0.3	0.4
315.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.4	0.2	0.1	0.0	0.0	0.5	0.5	0.4
320.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.4	0.1	0.1	0.0	0.0	0.4	0.7	0.3
325.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.4	0.1	0.1	0.0	0.0	0.4	0.6	0.5
330.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.0	0.0	0.4	0.6	0.5
335.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.4	0.6	0.5
340.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.0	0.4	0.6	0.5
345.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.0	0.4	0.6	0.4
350.	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.3	0.6	0.5
355.	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.3	0.5	0.5
MAX	0.8	0.9	0.8	1.0	0.8	0.8	0.7	0.6	0.6	0.7	0.9	1.1	1.2	1.2	1.0	0.9	0.9	0.7	0.7	0.9
DEGR.	25	60	90	105	110	170	165	165	175	180	180	185	180	190	200	230	230	300	320	195

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 CO BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
0.	0.5	0.5	0.6	0.7	0.5	0.0	0.0	0.2
5.	0.3	0.3	0.4	0.4	0.4	0.0	0.0	0.2
10.	0.4	0.2	0.2	0.2	0.4	0.0	0.0	0.2
15.	0.5	0.2	0.2	0.2	0.2	0.0	0.0	0.2
20.	0.5	0.2	0.2	0.2	0.1	0.0	0.0	0.2
25.	0.4	0.2	0.2	0.2	0.1	0.0	0.0	0.1
30.	0.4	0.2	0.2	0.2	0.1	0.0	0.0	0.1
35.	0.4	0.2	0.2	0.1	0.1	0.0	0.0	0.1
40.	0.4	0.2	0.2	0.1	0.1	0.0	0.0	0.1
45.	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.1
50.	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.1
55.	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.1
60.	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1
65.	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1
70.	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1
75.	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1
80.	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1
85.	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1
90.	0.1	0.1	0.1	0.0	0.0	0.2	0.1	0.1
95.	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.1
100.	0.1	0.0	0.0	0.0	0.0	0.4	0.2	0.1
105.	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.1
110.	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.1
115.	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.1
120.	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.1
125.	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.2
130.	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.2
135.	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2
140.	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2
145.	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
150.	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
155.	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3
160.	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4
165.	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3
170.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4
175.	0.4	0.4	0.4	0.4	0.4	0.2	0.2	0.4
180.	0.6	0.6	0.6	0.6	0.6	0.2	0.2	0.3
185.	0.7	0.7	0.7	0.7	0.6	0.3	0.2	0.3
190.	0.7	0.7	0.7	0.7	0.7	0.3	0.3	0.0
195.	0.8	0.7	0.7	0.7	0.6	0.3	0.3	0.0
200.	0.6	0.5	0.5	0.5	0.5	0.3	0.3	0.0
205.	0.7	0.5	0.5	0.5	0.5	0.3	0.3	0.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 CO BUILD 1-HR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
210.	0.7	0.5	0.5	0.5	0.5	0.4	0.3	0.0
215.	0.8	0.5	0.5	0.5	0.5	0.3	0.2	0.0
220.	0.7	0.4	0.4	0.4	0.4	0.3	0.2	0.0
225.	0.6	0.3	0.3	0.3	0.3	0.3	0.2	0.0
230.	0.7	0.4	0.3	0.3	0.3	0.4	0.3	0.0
235.	0.7	0.4	0.3	0.3	0.3	0.3	0.3	0.0
240.	0.7	0.5	0.3	0.3	0.3	0.4	0.3	0.0
245.	0.7	0.5	0.3	0.3	0.3	0.5	0.3	0.0
250.	0.7	0.5	0.3	0.3	0.3	0.5	0.3	0.0
255.	0.6	0.6	0.3	0.3	0.3	0.5	0.5	0.0
260.	0.6	0.6	0.3	0.3	0.3	0.5	0.5	0.0
265.	0.6	0.6	0.3	0.3	0.3	0.4	0.4	0.0
270.	0.6	0.6	0.3	0.3	0.3	0.3	0.4	0.0
275.	0.6	0.6	0.3	0.3	0.3	0.1	0.2	0.0
280.	0.6	0.6	0.3	0.3	0.3	0.1	0.1	0.0
285.	0.6	0.6	0.3	0.3	0.3	0.1	0.1	0.0
290.	0.6	0.7	0.4	0.3	0.3	0.0	0.0	0.0
295.	0.7	0.7	0.4	0.3	0.3	0.0	0.0	0.0
300.	0.7	0.7	0.4	0.3	0.3	0.0	0.0	0.0
305.	0.6	0.7	0.5	0.3	0.3	0.0	0.0	0.0
310.	0.6	0.7	0.5	0.3	0.3	0.0	0.0	0.0
315.	0.7	0.7	0.6	0.3	0.3	0.0	0.0	0.0
320.	0.6	0.8	0.7	0.5	0.4	0.0	0.0	0.0
325.	0.6	0.9	0.9	0.6	0.5	0.0	0.0	0.0
330.	0.6	0.8	0.9	0.7	0.5	0.0	0.0	0.0
335.	0.7	0.8	0.9	0.7	0.5	0.0	0.0	0.0
340.	0.5	0.8	0.9	0.8	0.6	0.0	0.0	0.0
345.	0.5	0.6	1.0	0.9	0.6	0.0	0.0	0.0
350.	0.5	0.6	0.7	0.9	0.6	0.0	0.0	0.1
355.	0.5	0.4	0.6	0.7	0.7	0.0	0.0	0.1
MAX	0.8	0.9	1.0	0.9	0.7	0.5	0.5	0.4
DEGR.	195	325	345	345	190	245	255	160

THE HIGHEST CONCENTRATION OF 1.20 PPM OCCURRED AT RECEPTOR REC13.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 CO CUMULATIVE BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 11:20:36

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2	* LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	1596.0	3465.0	1596.0	4465.0	1000.	360.	AG	1019.	3.7	0.0	55.7		
2. RTE 161 S FREE FLOW	1608.0	3465.0	1608.0	2465.0	1000.	180.	AG	1398.	3.7	0.0	79.7		
3. SITE DRIVE FRE FLOW	1600.0	3455.0	2100.0	3455.0	500.	90.	AG	2060.	3.5	0.0	79.7		
4. SITE DRIVE FRE FLOW	2100.0	3455.0	2453.6	3101.4	500.	135.	AG	2060.	3.5	0.0	43.7		
5. RT 161 NB RGT QUEUE	1632.0	3425.0	1632.0	-838.6	4264.	180.	AG	72.	100.0	0.0	12.0	2.05	216.6
6. RT 161 NB THR QUEUE	1614.0	3425.0	1614.0	2848.4	577.	180.	AG	143.	100.0	0.0	24.0	1.10	29.3
7. RT 161 SB LFT QUEUE	1596.0	3497.0	1596.0	3558.7	62.	360.	AG	75.	100.0	0.0	12.0	0.52	3.1
8. RT 161 SB THR QUEUE	1584.0	3497.0	1584.0	3607.0	110.	360.	AG	47.	100.0	0.0	12.0	0.61	5.6
9. SITE DR. LEFT QUEUE	1646.0	3461.0	1772.9	3461.0	127.	90.	AG	110.	100.0	0.0	24.0	0.73	6.4
10. SITE DR. RIGHT QUEUE	1646.0	3473.0	1701.0	3473.0	55.	90.	AG	55.	100.0	0.0	12.0	0.31	2.8

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 CO CUMULATIVE BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 11:20:36

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
5. RT 161 NB RGT QUEUE	90	65	2.0	764	1600	37.00	2	3
6. RT 161 NB THR QUEUE	90	65	2.0	818	1600	37.00	2	3
7. RT 161 SB LFT QUEUE	90	68	2.0	166	1600	37.00	2	3
8. RT 161 SB THR QUEUE	90	43	2.0	468	1600	37.00	2	3
9. SITE DR. LEFT QUEUE	90	50	2.0	929	1600	37.00	2	3
10. SITE DR. RIGHT QUEUE	90	50	2.0	201	1600	37.00	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 9-1	1568.0	3305.0	6.0
2. RECEPTOR NO. 9-2	1568.0	3385.0	6.0
3. RECEPTOR NO. 9-3	1568.0	3465.0	6.0
4. RECEPTOR NO. 9-4	1568.0	3505.0	6.0
5. RECEPTOR NO. 9-5	1568.0	3545.0	6.0
6. RECEPTOR NO. 9-6	1568.0	3585.0	6.0
7. RECEPTOR NO. 9-7	1568.0	3625.0	6.0
8. RECEPTOR NO. 9-8	1568.0	3665.0	6.0
9. RECEPTOR NO. 9-9	1624.0	3665.0	6.0
10. RECEPTOR NO. 9-10	1624.0	3585.0	6.0
11. RECEPTOR NO. 9-11	1624.0	3545.0	6.0
12. RECEPTOR NO. 9-12	1624.0	3513.0	6.0
13. RECEPTOR NO. 9-13	1624.0	3495.0	6.0
14. RECEPTOR NO. 9-14	1658.0	3495.0	6.0
15. RECEPTOR NO. 9-15	1698.0	3495.0	6.0
16. RECEPTOR NO. 9-16	1738.0	3495.0	6.0
17. RECEPTOR NO. 9-17	1778.0	3495.0	6.0
18. RECEPTOR NO. 9-18	1778.0	3415.0	6.0
19. RECEPTOR NO. 9-19	1698.0	3415.0	6.0
20. RECEPTOR NO. 9-20	1648.0	3415.0	6.0
21. RECEPTOR NO. 9-21	1648.0	3385.0	6.0
22. RECEPTOR NO. 9-22	1648.0	3345.0	6.0
23. RECEPTOR NO. 9-23	1648.0	3305.0	6.0
24. RECEPTOR NO. 9-24	1648.0	3265.0	6.0
25. RECEPTOR NO. 9-25	1648.0	3150.0	6.0
26. RECEPTOR NO. 9-26	1900.0	3495.0	6.0
27. RECEPTOR NO. 9-27	2000.0	3495.0	6.0
28. RECEPTOR NO. 9-28	1568.0	3800.0	6.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 CO CUMULATIVE BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.3	0.4	0.5
5.	0.2	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6
10.	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5
15.	0.5	0.3	0.5	0.4	0.3	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
20.	0.5	0.3	0.4	0.5	0.3	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
25.	0.8	0.3	0.5	0.5	0.4	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
30.	0.8	0.2	0.5	0.5	0.4	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
35.	0.8	0.3	0.3	0.5	0.4	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
40.	0.8	0.4	0.2	0.5	0.4	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
45.	0.8	0.5	0.2	0.5	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.5
50.	0.8	0.7	0.1	0.4	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.6
55.	0.8	0.7	0.2	0.4	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.6
60.	0.6	0.9	0.2	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.5
65.	0.6	0.9	0.2	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.5
70.	0.6	0.8	0.3	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.5
75.	0.6	0.8	0.4	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.4	0.4	0.5
80.	0.5	0.7	0.6	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.4	0.5
85.	0.5	0.6	0.8	0.5	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
90.	0.6	0.7	0.9	0.6	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.3
95.	0.5	0.5	0.7	0.6	0.5	0.2	0.1	0.1	0.0	0.0	0.1	0.2	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3
100.	0.5	0.5	0.6	0.8	0.5	0.3	0.1	0.1	0.0	0.1	0.1	0.3	0.7	0.6	0.6	0.5	0.4	0.2	0.2	0.2
105.	0.5	0.5	0.6	1.0	0.7	0.3	0.2	0.1	0.0	0.1	0.3	0.5	0.9	0.7	0.6	0.5	0.5	0.2	0.2	0.2
110.	0.5	0.5	0.4	0.9	0.8	0.4	0.2	0.2	0.0	0.2	0.3	0.6	0.8	0.8	0.6	0.4	0.4	0.1	0.0	0.0
115.	0.5	0.5	0.3	0.6	0.7	0.4	0.3	0.3	0.2	0.2	0.4	0.6	0.7	0.7	0.6	0.4	0.4	0.0	0.0	0.0
120.	0.5	0.5	0.4	0.5	0.8	0.4	0.2	0.3	0.2	0.1	0.3	0.5	0.7	0.7	0.5	0.4	0.4	0.0	0.0	0.0
125.	0.6	0.6	0.4	0.4	0.8	0.5	0.2	0.2	0.2	0.2	0.3	0.6	0.7	0.7	0.6	0.4	0.3	0.0	0.0	0.0
130.	0.6	0.6	0.5	0.5	0.7	0.5	0.3	0.2	0.1	0.2	0.4	0.5	0.7	0.7	0.6	0.4	0.3	0.0	0.0	0.0
135.	0.6	0.6	0.6	0.3	0.7	0.6	0.4	0.3	0.1	0.2	0.4	0.5	0.5	0.6	0.5	0.4	0.2	0.0	0.0	0.0
140.	0.7	0.7	0.7	0.5	0.7	0.6	0.4	0.3	0.1	0.2	0.5	0.5	0.5	0.6	0.5	0.4	0.2	0.0	0.0	0.0
145.	0.7	0.7	0.6	0.5	0.6	0.8	0.5	0.4	0.2	0.2	0.5	0.5	0.3	0.6	0.5	0.4	0.2	0.0	0.0	0.0
150.	0.7	0.7	0.7	0.6	0.8	0.8	0.6	0.4	0.2	0.2	0.4	0.4	0.3	0.6	0.5	0.5	0.2	0.0	0.0	0.0
155.	0.7	0.7	0.7	0.8	0.8	1.0	0.8	0.4	0.2	0.2	0.3	0.3	0.4	0.6	0.5	0.5	0.2	0.0	0.0	0.0
160.	0.9	1.0	1.0	0.9	0.7	1.0	0.9	0.7	0.2	0.2	0.2	0.5	0.6	0.6	0.5	0.5	0.2	0.0	0.0	0.0
165.	0.9	1.0	1.0	0.9	0.9	1.1	1.0	0.9	0.2	0.4	0.5	0.6	0.6	0.6	0.5	0.5	0.2	0.0	0.0	0.0
170.	0.9	0.9	0.9	1.0	1.0	1.0	1.2	0.9	0.6	0.6	0.7	0.8	1.0	0.8	0.6	0.5	0.2	0.0	0.0	0.3
175.	0.8	0.8	0.9	1.0	0.8	0.9	1.0	0.9	0.7	0.9	1.0	1.1	1.3	1.0	0.7	0.6	0.2	0.0	0.1	0.7
180.	0.6	0.6	0.6	0.6	0.7	0.8	0.7	0.6	0.8	1.0	1.1	1.4	1.5	1.3	1.0	0.6	0.4	0.1	0.4	0.9
185.	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.8	0.9	1.0	1.4	1.4	1.4	1.1	0.8	0.4	0.1	0.4	1.2
190.	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.1	0.8	0.8	0.8	1.0	1.3	1.5	1.1	0.9	0.6	0.3	0.5	1.3
195.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.5	0.7	0.8	0.9	1.4	1.3	0.9	0.7	0.3	0.6	1.3
200.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.3	0.4	0.7	1.1	1.2	0.9	0.8	0.3	0.6	1.1
205.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.3	0.4	0.4	1.0	1.1	0.9	0.8	0.4	0.5	1.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 CO CUMULATIVE BUILD 1-HR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) * REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28													
210.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.2	0.3	0.3	0.9	1.1	0.9	0.9	0.4	0.5	1.0
215.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.2	0.3	0.3	0.5	1.0	0.9	0.9	0.4	0.5	0.9
220.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.1	0.3	0.4	1.0	0.9	0.9	0.4	0.5	0.8
225.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.1	0.3	0.4	1.0	0.9	0.9	0.4	0.4	0.8
230.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.1	0.3	0.3	0.7	1.0	1.0	0.4	0.4	0.8
235.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.3	0.7	0.9	0.9	0.4	0.4	0.8
240.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.2	0.2	0.3	0.5	0.9	0.8	0.4	0.4	0.7
245.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.2	0.2	0.1	0.5	0.9	0.8	0.3	0.4	0.7
250.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.2	0.2	0.2	0.5	0.7	0.8	0.3	0.4	0.7
255.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.3	0.2	0.2	0.3	0.4	0.6	0.3	0.4	0.7
260.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.3	0.2	0.2	0.2	0.4	0.6	0.4	0.5	0.6
265.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.7
270.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.2	0.2	0.2	0.1	0.3	0.4	0.5	0.8
275.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.2	0.3	0.3	0.1	0.1	0.4	0.5	0.7
280.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.3	0.2	0.3	0.2	0.1	0.4	0.4	0.6
285.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.3	0.3	0.2	0.2	0.0	0.4	0.3	0.6
290.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.3	0.3	0.2	0.1	0.0	0.5	0.3	0.5
295.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.4	0.3	0.2	0.1	0.0	0.5	0.3	0.4
300.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.4	0.3	0.1	0.1	0.0	0.7	0.4	0.4
305.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.4	0.3	0.1	0.1	0.0	0.6	0.3	0.3
310.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.4	0.3	0.1	0.1	0.0	0.6	0.4	0.4
315.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.4	0.3	0.1	0.1	0.0	0.5	0.6	0.4
320.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.3	0.4	0.2	0.1	0.1	0.1	0.5	0.7	0.4
325.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.4	0.5	0.1	0.1	0.1	0.1	0.5	0.6	0.5
330.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.4	0.5	0.1	0.1	0.1	0.1	0.5	0.6	0.6
335.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.4	0.4	0.1	0.1	0.1	0.1	0.5	0.6	0.6
340.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.4	0.1	0.1	0.1	0.1	0.5	0.6	0.6
345.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.0	0.5	0.6	0.5
350.	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.0	0.3	0.6	0.6
355.	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.0	0.3	0.6	0.5
MAX	0.9	1.0	1.0	1.0	1.0	1.1	1.2	0.9	0.8	1.0	1.1	1.4	1.5	1.5	1.3	1.0	1.0	0.7	0.7	1.3
DEGR.	160	160	160	105	170	165	170	165	190	180	180	180	180	190	195	230	230	300	320	190

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 CO CUMULATIVE BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
0.	0.5	0.5	0.6	0.7	0.8	0.0	0.0	0.2
5.	0.5	0.4	0.4	0.4	0.5	0.0	0.0	0.2
10.	0.4	0.2	0.2	0.3	0.4	0.0	0.0	0.3
15.	0.5	0.2	0.2	0.2	0.2	0.0	0.0	0.2
20.	0.5	0.2	0.2	0.2	0.1	0.0	0.0	0.2
25.	0.4	0.2	0.2	0.2	0.1	0.0	0.0	0.2
30.	0.4	0.2	0.2	0.2	0.1	0.0	0.0	0.2
35.	0.4	0.2	0.2	0.1	0.1	0.0	0.0	0.2
40.	0.4	0.2	0.2	0.1	0.1	0.0	0.0	0.2
45.	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.1
50.	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.1
55.	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.1
60.	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1
65.	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1
70.	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1
75.	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1
80.	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1
85.	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1
90.	0.1	0.1	0.1	0.0	0.0	0.2	0.1	0.1
95.	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.1
100.	0.1	0.0	0.0	0.0	0.0	0.4	0.2	0.1
105.	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.1
110.	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.1
115.	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.1
120.	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.1
125.	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.2
130.	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.2
135.	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2
140.	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3
145.	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3
150.	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3
155.	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4
160.	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4
165.	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4
170.	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.5
175.	0.7	0.7	0.7	0.6	0.5	0.2	0.2	0.6
180.	0.9	0.9	0.9	0.9	0.8	0.2	0.2	0.5
185.	1.2	1.1	1.1	1.1	1.0	0.3	0.2	0.4
190.	1.3	1.2	1.2	1.2	1.1	0.3	0.3	0.1
195.	1.3	1.3	1.3	1.3	1.2	0.3	0.3	0.0
200.	1.1	1.1	1.1	1.1	1.1	0.3	0.3	0.0
205.	1.0	1.0	1.0	1.0	1.0	0.5	0.3	0.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 CO CUMULATIVE BUILD 1-HR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
210.	1.0	1.0	1.0	1.0	1.0	0.5	0.4	0.0
215.	0.9	0.9	0.9	0.9	0.9	0.5	0.3	0.0
220.	0.8	0.8	0.8	0.8	0.8	0.5	0.3	0.0
225.	0.8	0.8	0.8	0.8	0.8	0.5	0.3	0.0
230.	0.8	0.8	0.8	0.8	0.8	0.6	0.4	0.0
235.	0.8	0.8	0.8	0.8	0.8	0.5	0.4	0.0
240.	0.7	0.7	0.7	0.7	0.7	0.5	0.4	0.0
245.	0.7	0.7	0.7	0.7	0.7	0.5	0.4	0.0
250.	0.7	0.7	0.7	0.7	0.7	0.5	0.4	0.0
255.	0.7	0.7	0.7	0.7	0.7	0.5	0.6	0.0
260.	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.0
265.	0.6	0.6	0.6	0.6	0.6	0.4	0.4	0.0
270.	0.7	0.7	0.7	0.7	0.7	0.3	0.4	0.0
275.	0.6	0.6	0.6	0.6	0.6	0.1	0.2	0.0
280.	0.6	0.6	0.6	0.6	0.6	0.1	0.1	0.0
285.	0.6	0.6	0.7	0.7	0.7	0.1	0.1	0.0
290.	0.6	0.7	0.7	0.7	0.7	0.0	0.0	0.0
295.	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0
300.	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0
305.	0.6	0.8	0.8	0.8	0.8	0.0	0.0	0.0
310.	0.7	0.8	0.8	0.8	0.8	0.0	0.0	0.0
315.	0.7	0.8	0.8	0.8	0.8	0.0	0.0	0.0
320.	0.6	0.8	0.8	0.8	0.8	0.0	0.0	0.0
325.	0.6	0.9	0.9	0.9	0.9	0.0	0.0	0.0
330.	0.6	0.8	0.9	1.0	1.0	0.0	0.0	0.0
335.	0.7	1.0	0.9	1.0	1.0	0.0	0.0	0.0
340.	0.5	0.9	1.0	0.9	1.0	0.0	0.0	0.0
345.	0.5	0.7	1.0	1.0	1.1	0.0	0.0	0.0
350.	0.5	0.6	0.8	1.0	1.0	0.0	0.0	0.1
355.	0.5	0.4	0.6	0.8	0.9	0.0	0.0	0.1
MAX	1.3	1.3	1.3	1.3	1.2	0.6	0.6	0.6
DEGR.	190	195	195	195	195	230	255	175

THE HIGHEST CONCENTRATION OF 1.50 PPM OCCURRED AT RECEPTOR REC14.

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION CO FRIDAY PM

DATE : 8/16/10
TIME : 13:27: 5

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	125.	5.2	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	125.	5.2	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	125.	5.2	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	125.	5.2	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	59.	5.2	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	59.	5.2	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	59.	5.2	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	59.	5.2	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	59.	5.2	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	59.	5.2	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	45.	5.2	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	45.	5.2	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	45.	5.2	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	45.	5.2	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	45.	5.2	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	51.	5.2	.0	30.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	51.	5.2	.0	30.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	51.	5.2	.0	30.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	51.	5.2	.0	30.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	1.	5.2	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	1.	5.2	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	1.	5.2	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	101.	4.9	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	101.	4.9	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	101.	4.9	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	101.	4.9	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	101.	4.9	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	153.	4.9	.0	30.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	153.	4.9	.0	30.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	48.	4.9	.0	30.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	48.	4.9	.0	30.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	5.2	.0	30.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	5.2	.0	30.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	5.2	.0	30.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	5.2	.0	30.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	5.2	.0	30.0		
37. Existing On Ramp 1	********	********	********	********	181.	240.	AG	105.	5.2	.0	30.0		
38. Existing On Ramp 2	********	********	********	********	199.	278.	AG	105.	5.2	.0	30.0		
39. Existing On Ramp 3	********	********	********	********	181.	314.	AG	105.	5.2	.0	30.0		
40. Existing On Ramp 4	********	********	********	********	170.	344.	AG	105.	5.2	.0	30.0		
41. CR 161 SB Queue	********	********	********	********	12.	212.	AG	76.	100.0	.0	12.0	.24	.6
42. RTE 173 Queue Ex	********	********	********	********	33.	90.	AG	150.	100.0	.0	12.0	.63	1.7

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION CO FRIDAY PM

DATE : 8/16/10
TIME : 13:27: 5

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
41. CR 161 SB Queue	48	200.	56.10
42. RTE 173 Queue Ex	125	200.	56.10

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION CO FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
5.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15.	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20.	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25.	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
35.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
40.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
45.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
50.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
55.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
60.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
65.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
70.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
75.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
80.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
85.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
90.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
95.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
100.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
105.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
110.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
115.	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
120.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
125.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
130.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
135.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
140.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
145.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
150.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
155.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
160.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
165.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
170.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
175.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
180.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
185.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
190.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
195.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
200.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
205.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION CO FRIDAY PM

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
215. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
220. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
225. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
230. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
235. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
240. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
245. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
250. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
255. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
260. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
265. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
270. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
275. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
280. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
285. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
290. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
295. *	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
300. *	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
305. *	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
310. *	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
315. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
320. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
325. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
330. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
335. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
340. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
345. *	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
350. *	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
355. *	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
MAX *	.0	.0	.1	.1	.1	.2	.1	.0	.0	.0	.0	.1	.0	.1	.0	.0	.1	.0	.0	.0
DEGR. *	0	0	130	230	295	0	115	0	0	0	0	0	0	325	0	0	270	0	0	0

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION CO FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
35.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
40.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
45.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
50.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
55.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
60.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
65.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
70.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
75.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
80.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
85.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
90.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
95.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
100.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
105.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
110.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
115.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
120.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
125.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
130.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
135.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
140.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
145.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
150.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
155.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
160.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
165.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
170.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
175.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
180.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
185.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
190.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
195.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
200.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
205.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION CO FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
215.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
220.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
225.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
230.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
235.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
240.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
245.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
250.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
255.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
260.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
265.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
270.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
275.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
280.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
285.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
290.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
295.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
300.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
305.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
310.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
315.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
320.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
325.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
330.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
335.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
340.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
345.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
350.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
355.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
MAX	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
DEGR.	0	0	0	0	0	65	0	0	0	0	0	210	0	0	0	0	0	0	0	0

THE HIGHEST CONCENTRATION OF .20 PPM OCCURRED AT RECEPTOR REC6 .

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION CO FRIDAY PM

DATE : 9/10/10
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The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	193.	3.7	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	193.	3.7	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	193.	3.7	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	193.	3.7	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	65.	3.7	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	65.	3.7	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	65.	3.7	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	65.	3.7	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	65.	3.7	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	65.	3.7	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	50.	3.7	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	50.	3.7	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	50.	3.7	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	50.	3.7	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	50.	3.7	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	59.	3.7	.0	30.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	59.	3.7	.0	30.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	59.	3.7	.0	30.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	59.	3.7	.0	30.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	1.	3.5	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	1.	3.5	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	1.	3.5	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	166.	3.4	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	166.	3.4	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	166.	3.4	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	166.	3.4	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	166.	3.4	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	53.	3.4	.0	30.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	53.	3.4	.0	30.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	53.	3.4	.0	30.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	53.	3.4	.0	30.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	3.5	.0	30.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	3.5	.0	30.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	3.5	.0	30.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	3.5	.0	30.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	3.5	.0	30.0		
37. Existing On Ramp 1	********	********	********	********	181.	240.	AG	181.	3.5	.0	30.0		
38. Existing On Ramp 2	********	********	********	********	199.	278.	AG	181.	3.5	.0	30.0		
39. Existing On Ramp 3	********	********	********	********	181.	314.	AG	181.	3.5	.0	30.0		
40. Existing On Ramp 4	********	********	********	********	170.	344.	AG	181.	3.5	.0	30.0		
41. CR 161 SB Queue	********	********	********	********	12.	212.	AG	57.	100.0	.0	12.0	.26	.6
42. RTE 173 Queue Ex	********	********	********	********	36.	112.	AG	99.	100.0	.0	12.0	.64	1.8

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION CO FRIDAY PM

DATE : 9/10/10
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ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
41. CR 161 SB Queue	53	200.	37.00
42. RTE 173 Queue Ex	193	300.	37.00

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION CO FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
35.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
40.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
45.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
50.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
55.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
60.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
65.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
70.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
75.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
80.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
85.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
90.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
95.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
100.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
105.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
110.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
115.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
120.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
125.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
130.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
135.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
140.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
145.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
150.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
155.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
160.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
165.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
170.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
175.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
180.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
185.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
190.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
195.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
200.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
205.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION CO FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
215.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
220.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
225.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
230.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
235.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
240.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
245.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
250.	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
255.	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
260.	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
265.	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
270.	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
275.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
280.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
285.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
290.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
295.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
300.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
305.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
310.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
315.	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
320.	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
325.	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
330.	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
335.	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
340.	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
345.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
350.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
355.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
MAX	.0	.0	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
DEGR.	0	0	160	250	315	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION CO FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
35.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
40.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
45.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
50.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
55.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
60.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
65.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
70.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
75.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
80.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
85.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
90.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
95.	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
100.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
105.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
110.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
115.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
120.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
125.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
130.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
135.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
140.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
145.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
150.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
155.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
160.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
165.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
170.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
175.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
180.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
185.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
190.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
195.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
200.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
205.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION CO FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
215.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
220.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
225.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
230.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
235.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
240.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
245.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
250.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
255.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
260.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
265.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
270.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
275.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
280.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
285.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
290.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
295.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
300.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
305.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
310.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
315.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
320.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
325.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
330.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
335.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
340.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
345.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
350.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
355.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
MAX	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
DEGR.	0	0	0	0	0	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0

THE HIGHEST CONCENTRATION OF .10 PPM OCCURRED AT RECEPTOR REC6 .

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION CO FRIDAY PM

DATE : 9/10/10
TIME : 14:39: 3

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	* X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	******** *	224.	148.	AG	388.	3.7	.0	30.0		
2. Route 173 EB 2	********	********	********	******** *	190.	127.	AG	388.	3.7	.0	30.0		
3. Route 173 EB 3	********	********	********	******** *	228.	108.	AG	388.	3.7	.0	30.0		
4. Route 173 EB 4	********	********	********	******** *	80.	101.	AG	388.	3.7	.0	30.0		
5. Route 173 EB 5	********	********	********	******** *	80.	98.	AG	76.	3.7	.0	30.0		
6. Route 173 EB 6	********	********	********	******** *	151.	86.	AG	76.	3.7	.0	30.0		
7. Route 173 EB 7	********	********	********	******** *	356.	60.	AG	76.	3.7	.0	30.0		
8. Route 173 EB 8	********	********	********	******** *	177.	63.	AG	76.	3.7	.0	30.0		
9. Route 173 EB 9	********	********	********	******** *	174.	79.	AG	76.	3.7	.0	30.0		
10. Route 173 EB 10	********	********	********	******** *	276.	88.	AG	76.	3.7	.0	30.0		
11. Route 173 WB 1	********	********	********	******** *	276.	268.	AG	59.	3.7	.0	30.0		
12. Route 173 WB 2	********	********	********	******** *	174.	258.	AG	59.	3.7	.0	30.0		
13. Route 173 WB 3	********	********	********	******** *	531.	240.	AG	59.	3.7	.0	30.0		
14. Route 173 WB 4	********	********	********	******** *	151.	265.	AG	59.	3.7	.0	30.0		
15. Route 173 WB 5	********	********	********	******** *	80.	281.	AG	59.	3.7	.0	30.0		
16. Route 173 WB 6	********	********	********	******** *	149.	284.	AG	891.	3.7	.0	42.0		
17. Route 173 WB 7	********	********	********	******** *	154.	290.	AG	891.	3.7	.0	42.0		
18. Route 173 WB 8	********	********	********	******** *	177.	309.	AG	891.	3.7	.0	42.0		
19. Route 173 WB 8	********	********	********	******** *	212.	326.	AG	891.	3.7	.0	42.0		
20. Country Road NB 1A	********	********	********	******** *	273.	4.	AG	3.	3.5	.0	20.0		
21. Country Road NB 1B	********	********	********	******** *	185.	6.	AG	3.	3.5	.0	20.0		
22. Country Road NB 1C	********	********	********	******** *	236.	11.	AG	3.	3.5	.0	20.0		
23. Country Road NB 2A	********	********	********	******** *	128.	21.	AG	371.	3.4	.0	20.0		
24. Country Road NB 2B	********	********	********	******** *	135.	26.	AG	371.	3.4	.0	20.0		
25. Country Road NB 2C	********	********	********	******** *	102.	31.	AG	371.	3.4	.0	20.0		
26. Country Road NB 2D	********	********	********	******** *	148.	18.	AG	371.	3.4	.0	20.0		
27. Country Road NB 2E	********	********	********	******** *	258.	12.	AG	371.	3.4	.0	20.0		
28. Country Road SB 1A	********	********	********	******** *	242.	193.	AG	893.	3.4	.0	42.0		
29. Country Road SB 1B	********	********	********	******** *	166.	196.	AG	893.	3.4	.0	42.0		
30. Country Road SB 1C	********	********	********	******** *	106.	210.	AG	893.	3.4	.0	42.0		
31. Country Road SB 1D	********	********	********	******** *	210.	204.	AG	893.	3.4	.0	42.0		
32. Country Road SB 2A	********	********	********	******** *	127.	192.	AG	5.	3.5	.0	42.0		
33. Country Road SB 2B	********	********	********	******** *	91.	193.	AG	5.	3.5	.0	42.0		
34. Country Road SB 2C	********	********	********	******** *	64.	186.	AG	5.	3.5	.0	42.0		
35. Country Road SB 2D	********	********	********	******** *	107.	187.	AG	5.	3.5	.0	42.0		
36. Country Road SB 2E	********	********	********	******** *	351.	185.	AG	5.	3.5	.0	42.0		
37. Future 173 WB Ramp A	********	********	********	******** *	63.	211.	AG	868.	3.5	.0	30.0		
38. Future 173 WB Ramp B	********	********	********	******** *	60.	261.	AG	868.	3.5	.0	30.0		
39. Future 173 WB Ramp C	********	********	********	******** *	72.	273.	AG	868.	3.5	.0	30.0		
40. Route 173 Queue Futu	********	********	********	******** *	1789.	110.	AG	99.	100.0	.0	12.0	1.66	90.9
41. Route 173 Queue Futu	********	********	********	******** *	1789.	103.	AG	99.	100.0	.0	12.0	1.66	90.9
42. CR 161 SB Queue	********	********	********	******** *	12.	212.	AG	22.	100.0	.0	12.0	.12	.6

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION CO FRIDAY PM

DATE : 9/10/10
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ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
40. Route 173 Queue Futu	332	200.	37.00
41. Route 173 Queue Futu	332	200.	37.00
42. CR 161 SB Queue	24	200.	37.00

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION CO FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	.0	.1	.0	.1	.4	.5	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
5.	.0	.1	.0	.1	.4	.5	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
10.	.0	.1	.0	.0	.5	.5	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
15.	.0	.2	.0	.0	.4	.5	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
20.	.0	.2	.0	.0	.3	.6	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
25.	.0	.2	.0	.0	.3	.6	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
30.	.0	.2	.0	.0	.3	.6	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
35.	.0	.2	.0	.0	.4	.6	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
40.	.0	.2	.0	.0	.4	.6	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
45.	.0	.2	.1	.0	.4	.5	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
50.	.0	.2	.1	.0	.4	.4	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
55.	.0	.2	.1	.0	.4	.4	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
60.	.0	.2	.1	.0	.4	.4	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.2	.0	.0
65.	.0	.2	.1	.0	.4	.4	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.5	.2	.0	.0
70.	.0	.2	.1	.0	.4	.4	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.2	.2	.0	.0
75.	.0	.2	.2	.0	.4	.4	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.2	.3	.0	.0
80.	.0	.2	.2	.0	.5	.4	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.3	.3	.0	.0
85.	.0	.2	.2	.0	.6	.6	.0	.0	.0	.0	.0	.3	.2	.2	.2	.2	.3	.3	.0	.0
90.	.0	.2	.2	.0	.6	.6	.0	.0	.0	.0	.0	.4	.2	.3	.2	.2	.3	.0	.0	.0
95.	.0	.1	.2	.1	.7	.6	.1	.1	.0	.0	.0	.3	.2	.3	.2	.1	.3	.1	.0	.0
100.	.0	.0	.3	.1	.6	.5	.1	.3	.1	.1	.0	.2	.1	.3	.1	.0	.3	.2	.1	.1
105.	.0	.0	.4	.2	.4	.5	.2	.3	.2	.2	.1	.1	.1	.1	.1	.0	.4	.3	.1	.1
110.	.1	.0	.5	.4	.4	.3	.5	.5	.4	.3	.2	.1	.0	.1	.0	.0	.4	.3	.3	.2
115.	.1	.0	.5	.5	.2	.1	.6	.7	.5	.4	.2	.0	.0	.0	.0	.0	.4	.3	.4	.3
120.	.2	.0	.5	.5	.1	.1	.7	.6	.5	.3	.3	.0	.0	.0	.0	.0	.4	.3	.4	.3
125.	.2	.0	.5	.4	.0	.0	.6	.6	.4	.3	.2	.0	.0	.0	.0	.0	.4	.6	.4	.3
130.	.2	.0	.5	.4	.0	.0	.6	.5	.3	.2	.1	.0	.0	.0	.0	.0	.4	.6	.4	.3
135.	.2	.0	.5	.4	.0	.0	.6	.4	.2	.3	.1	.0	.0	.0	.0	.0	.3	.4	.4	.2
140.	.2	.0	.5	.4	.0	.0	.6	.3	.2	.1	.1	.0	.0	.0	.0	.0	.3	.4	.4	.2
145.	.2	.0	.6	.4	.0	.0	.6	.3	.1	.1	.1	.0	.0	.0	.0	.0	.3	.4	.3	.2
150.	.2	.0	.6	.4	.0	.0	.5	.3	.1	.1	.1	.0	.0	.0	.0	.0	.3	.4	.3	.2
155.	.2	.0	.4	.4	.0	.0	.5	.3	.1	.1	.1	.0	.0	.0	.0	.0	.3	.4	.3	.2
160.	.2	.0	.4	.3	.0	.0	.5	.2	.2	.1	.1	.0	.0	.0	.0	.0	.2	.4	.3	.2
165.	.2	.0	.4	.3	.0	.0	.5	.2	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.2	.2
170.	.2	.0	.4	.3	.0	.0	.4	.2	.1	.1	.2	.0	.0	.0	.0	.0	.2	.4	.2	.2
175.	.2	.0	.4	.2	.0	.0	.3	.2	.1	.1	.2	.0	.0	.0	.0	.0	.2	.4	.2	.2
180.	.2	.0	.4	.2	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.2	.2
185.	.2	.0	.4	.2	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.2	.2
190.	.2	.0	.4	.2	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.2	.2
195.	.2	.0	.4	.2	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.2	.2
200.	.2	.0	.4	.2	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.2	.2
205.	.2	.0	.4	.2	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.2	.2

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION CO FRIDAY PM

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	.2	.0	.3	.2	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.2	.2
215.	.2	.0	.4	.3	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.2	.2
220.	.2	.0	.4	.3	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.2	.2
225.	.2	.0	.4	.3	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.2	.2
230.	.2	.0	.4	.3	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.3	.2
235.	.2	.0	.4	.3	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.3	.2
240.	.2	.0	.3	.3	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.2	.4	.3	.2
245.	.1	.0	.3	.4	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.3	.4	.3	.2
250.	.1	.0	.2	.5	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.3	.4	.3	.2
255.	.0	.0	.2	.5	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0	.3	.5	.3	.2
260.	.0	.0	.2	.5	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0	.3	.5	.4	.2
265.	.0	.0	.2	.4	.0	.0	.1	.2	.1	.1	.1	.0	.0	.0	.0	.0	.3	.5	.4	.2
270.	.0	.0	.1	.3	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0	.3	.6	.4	.2
275.	.0	.0	.1	.2	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0	.4	.4	.2	.2
280.	.0	.0	.0	.2	.0	.0	.0	.1	.1	.1	.1	.0	.0	.0	.0	.0	.4	.3	.2	.0
285.	.0	.0	.0	.0	.1	.0	.1	.1	.1	.2	.1	.0	.0	.0	.0	.0	.4	.3	.1	.0
290.	.0	.0	.0	.1	.1	.0	.0	.1	.1	.2	.1	.0	.0	.0	.0	.0	.4	.3	.0	.0
295.	.0	.0	.0	.1	.3	.1	.0	.1	.1	.1	.1	.0	.0	.0	.0	.0	.3	.3	.0	.0
300.	.0	.0	.0	.1	.4	.2	.0	.0	.2	.1	.1	.0	.0	.0	.0	.0	.2	.3	.0	.0
305.	.0	.0	.0	.1	.6	.4	.0	.0	.1	.1	.1	.0	.0	.0	.0	.0	.2	.3	.0	.0
310.	.0	.0	.0	.1	.6	.4	.0	.0	.1	.1	.1	.0	.0	.1	.0	.0	.2	.3	.0	.0
315.	.0	.0	.0	.1	.6	.4	.0	.0	.0	.1	.1	.0	.0	.1	.0	.0	.2	.2	.0	.0
320.	.0	.0	.0	.1	.6	.4	.0	.0	.0	.1	.1	.0	.0	.1	.0	.0	.2	.2	.0	.0
325.	.0	.0	.0	.1	.5	.5	.0	.0	.0	.0	.0	.1	.0	.2	.1	.0	.5	.2	.0	.0
330.	.0	.0	.0	.1	.4	.5	.0	.0	.0	.0	.0	.1	.0	.2	.1	.0	.5	.2	.0	.0
335.	.0	.0	.0	.1	.4	.5	.0	.0	.0	.0	.0	.1	.0	.2	.1	.0	.5	.2	.0	.0
340.	.0	.0	.0	.1	.4	.5	.0	.0	.0	.0	.0	.1	.1	.2	.2	.1	.4	.2	.0	.0
345.	.0	.0	.0	.1	.4	.5	.0	.0	.0	.0	.0	.2	.1	.2	.2	.1	.4	.2	.0	.0
350.	.0	.0	.0	.1	.5	.5	.0	.0	.0	.0	.0	.2	.1	.2	.2	.1	.4	.2	.0	.0
355.	.0	.0	.0	.1	.4	.5	.0	.0	.0	.0	.0	.2	.1	.2	.2	.2	.4	.2	.0	.0
MAX	.2	.2	.6	.5	.7	.6	.7	.7	.5	.4	.3	.4	.2	.3	.2	.2	.5	.6	.4	.3
DEGR.	120	15	145	115	95	20	120	115	115	115	120	90	0	90	0	0	65	125	115	115

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION CO FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	.0	.0	.0	.0	.0	.3	.2	.0	.1	.1	.2	.1	.1	.1	.1	.1	.0	.0	.0	.0
5.	.0	.0	.0	.0	.0	.4	.2	.0	.1	.1	.2	.0	.2	.1	.1	.1	.0	.0	.0	.0
10.	.0	.0	.0	.0	.0	.4	.2	.1	.1	.1	.2	.0	.1	.1	.0	.0	.0	.0	.0	.0
15.	.0	.0	.0	.0	.0	.4	.2	.1	.1	.1	.1	.0	.1	.0	.0	.0	.0	.0	.1	.1
20.	.0	.0	.0	.0	.0	.5	.3	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.1	.1
25.	.0	.0	.0	.0	.0	.5	.3	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.1	.1
30.	.0	.0	.0	.0	.0	.5	.3	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.1	.2	.1
35.	.0	.0	.0	.0	.0	.5	.3	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.1	.2	.1
40.	.0	.0	.0	.0	.0	.6	.3	.1	.1	.1	.1	.0	.0	.0	.0	.0	.1	.1	.1	.1
45.	.0	.0	.0	.0	.0	.6	.3	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.1	.1	.1
50.	.0	.0	.0	.0	.0	.6	.3	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.1	.1	.1
55.	.0	.0	.0	.0	.0	.5	.3	.1	.1	.1	.1	.0	.0	.0	.0	.0	.1	.1	.1	.1
60.	.0	.0	.0	.0	.0	.5	.3	.1	.1	.1	.1	.0	.0	.0	.0	.0	.1	.1	.1	.1
65.	.0	.0	.0	.0	.0	.5	.3	.1	.1	.1	.1	.0	.0	.0	.0	.0	.1	.1	.1	.1
70.	.0	.0	.0	.0	.0	.6	.3	.2	.1	.1	.1	.0	.0	.0	.0	.0	.1	.1	.1	.1
75.	.0	.0	.0	.0	.0	.6	.4	.2	.1	.1	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1
80.	.0	.0	.0	.0	.0	.7	.4	.3	.1	.1	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1
85.	.0	.0	.0	.0	.0	.7	.6	.4	.1	.1	.1	.0	.0	.0	.0	.0	.1	.0	.1	.1
90.	.0	.0	.0	.0	.0	.7	.7	.6	.2	.2	.1	.0	.0	.0	.0	.0	.1	.0	.1	.0
95.	.0	.0	.0	.0	.0	.7	.8	.6	.3	.4	.1	.0	.0	.0	.0	.0	.1	.0	.1	.1
100.	.0	.1	.1	.0	.0	.6	.6	.6	.5	.5	.3	.0	.0	.0	.0	.0	.0	.1	.1	.1
105.	.1	.2	.1	.1	.0	.5	.6	.6	.6	.6	.4	.1	.0	.0	.0	.0	.0	.1	.1	.1
110.	.1	.3	.1	.1	.1	.4	.4	.5	.5	.5	.5	.1	.1	.0	.0	.0	.1	.1	.1	.1
115.	.1	.3	.3	.1	.1	.1	.2	.2	.3	.3	.5	.2	.1	.1	.0	.0	.1	.2	.1	.1
120.	.2	.4	.3	.2	.1	.1	.1	.1	.1	.1	.4	.2	.2	.1	.1	.0	.3	.2	.2	.1
125.	.2	.4	.3	.2	.2	.0	.0	.0	.0	.0	.2	.2	.2	.2	.1	.1	.3	.3	.2	.2
130.	.2	.4	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.1	.3	.3	.3	.2
135.	.2	.4	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.3	.3	.3	.3
140.	.2	.3	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.3	.3	.3	.3
145.	.2	.3	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.3	.3	.3	.3
150.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.3	.3	.3	.3
155.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.3	.3	.3	.2
160.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.1	.3	.3	.3	.1
165.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.3	.3	.3	.1
170.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.3	.3	.3	.1
175.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.3	.3	.4	.1
180.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.3	.4	.2	.1
185.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.3	.3	.1	.1
190.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.3	.3	.1	.1
195.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.2	.3	.0	.0
200.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.2	.3	.0	.0
205.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.2	.1	.0	.0

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION CO FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.0	.0	.1	.1	.0	.0
215.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.3	.3	.0	.0	.1	.1	.0	.0
220.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.3	.3	.1	.1	.1	.0	.0	.0
225.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.3	.3	.2	.1	.1	.1	.0	.0	.0
230.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.3	.3	.2	.1	.1	.0	.0	.0	.0
235.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.3	.2	.1	.1	.1	.0	.0	.0	.0
240.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.4	.2	.0	.1	.1	.0	.0	.0	.0
245.	.2	.3	.2	.2	.2	.0	.0	.0	.0	.0	.0	.4	.1	.1	.1	.1	.0	.0	.0	.0
250.	.2	.3	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.1	.1	.0	.1	.0	.0	.0	.0
255.	.2	.3	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.1	.1	.1	.1	.0	.0	.0	.0
260.	.2	.2	.2	.2	.1	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0
265.	.2	.2	.2	.1	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0
270.	.1	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0
275.	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0
280.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0
285.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0
290.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0
295.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0
300.	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0
305.	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0	.1	.0	.1	.1	.1	.0	.0	.0	.0
310.	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0	.1	.0	.1	.1	.1	.0	.0	.0	.0
315.	.0	.0	.0	.0	.0	.4	.1	.2	.0	.0	.0	.1	.0	.1	.1	.1	.0	.0	.0	.0
320.	.0	.0	.0	.0	.0	.4	.2	.2	.0	.0	.0	.1	.1	.1	.1	.0	.0	.0	.0	.0
325.	.0	.0	.0	.0	.0	.4	.1	.2	.1	.0	.0	.1	.1	.1	.1	.0	.0	.0	.0	.0
330.	.0	.0	.0	.0	.0	.3	.1	.2	.2	.2	.0	.1	.1	.0	.1	.1	.0	.0	.0	.0
335.	.0	.0	.0	.0	.0	.3	.1	.1	.2	.2	.0	.1	.1	.0	.1	.1	.0	.0	.0	.0
340.	.0	.0	.0	.0	.0	.3	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1	.0	.0	.0	.0
345.	.0	.0	.0	.0	.0	.3	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1	.0	.0	.0	.0
350.	.0	.0	.0	.0	.0	.2	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1	.0	.0	.0	.0
355.	.0	.0	.0	.0	.0	.2	.2	.1	.1	.1	.2	.1	.1	.1	.2	.2	.0	.0	.0	.0
MAX	.2	.4	.3	.2	.2	.7	.8	.6	.6	.6	.5	.4	.3	.3	.2	.2	.3	.4	.4	.3
DEGR.	120	120	115	120	125	80	95	90	105	105	110	240	215	215	130	135	120	180	175	135

THE HIGHEST CONCENTRATION OF .80 PPM OCCURRED AT RECEPTOR REC27.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION CO FRIDAY PM

DATE : 9/10/10
TIME : 14:40: 6

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	* X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	683.	3.7	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	683.	3.7	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	683.	3.7	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	683.	3.7	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	73.	3.7	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	73.	3.7	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	73.	3.7	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	73.	3.7	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	73.	3.7	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	73.	3.7	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	56.	3.7	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	56.	3.7	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	56.	3.7	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	56.	3.7	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	56.	3.7	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	790.	3.7	.0	42.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	790.	3.7	.0	42.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	790.	3.7	.0	42.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	790.	3.7	.0	42.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	3.	3.5	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	3.	3.5	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	3.	3.5	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	663.	3.4	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	663.	3.4	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	663.	3.4	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	663.	3.4	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	663.	3.4	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	790.	3.4	.0	42.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	790.	3.4	.0	42.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	790.	3.4	.0	42.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	790.	3.4	.0	42.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	3.5	.0	42.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	3.5	.0	42.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	3.5	.0	42.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	3.5	.0	42.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	3.5	.0	42.0		
37. Future 173 WB Ramp A	********	********	********	********	63.	211.	AG	768.	3.5	.0	30.0		
38. Future 173 WB Ramp B	********	********	********	********	60.	261.	AG	768.	3.5	.0	30.0		
39. Future 173 WB Ramp C	********	********	********	********	72.	273.	AG	768.	3.5	.0	30.0		
40. Route 173 Queue Futu	********	********	********	********	5228.	110.	AG	99.	100.0	.0	12.0	3.13	265.6
41. Route 173 Queue Futu	********	********	********	********	5228.	103.	AG	99.	100.0	.0	12.0	3.13	265.6
42. CR 161 SB Queue	********	********	********	********	12.	212.	AG	19.	100.0	.0	12.0	.10	.6

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION CO FRIDAY PM

DATE : 9/10/10
TIME : 14:40: 6

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
40. Route 173 Queue Futu	627	200.	37.00
41. Route 173 Queue Futu	627	200.	37.00
42. CR 161 SB Queue	21	200.	37.00

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION CO FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	.0	.1	.0	.1	.5	.6	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.5	.0	.0
5.	.0	.1	.0	.0	.5	.6	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.5	.0	.0
10.	.0	.1	.0	.0	.4	.6	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.4	.0	.0
15.	.0	.2	.0	.0	.4	.6	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.4	.0	.0
20.	.0	.2	.0	.0	.4	.7	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.5	.0	.0
25.	.0	.2	.0	.0	.4	.7	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.5	.0	.0
30.	.0	.2	.0	.0	.4	.7	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.5	.0	.0
35.	.0	.2	.0	.0	.4	.7	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.5	.0	.0
40.	.0	.2	.0	.0	.4	.8	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.5	.0	.0
45.	.0	.2	.1	.0	.4	.6	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.5	.0	.0
50.	.0	.2	.1	.0	.4	.5	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.5	.0	.0
55.	.0	.2	.1	.0	.4	.4	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.4	.5	.0	.0
60.	.0	.2	.1	.0	.5	.5	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.6	.6	.0	.0
65.	.0	.2	.1	.0	.5	.5	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.6	.6	.0	.0
70.	.0	.2	.1	.0	.5	.5	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.6	.6	.0	.0
75.	.0	.2	.2	.0	.6	.5	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.7	.8	.0	.0
80.	.0	.2	.2	.0	.6	.6	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.7	.8	.0	.0
85.	.0	.2	.2	.0	.8	.6	.0	.0	.0	.0	.0	.3	.2	.3	.2	.2	.9	1.0	.0	.0
90.	.0	.2	.2	.0	1.0	.7	.0	.0	.0	.0	.0	.4	.2	.4	.2	.2	1.1	1.2	.0	.0
95.	.0	.2	.3	.1	1.2	.7	.1	.1	.1	.0	.0	.4	.2	.4	.2	.2	1.4	1.1	.1	.0
100.	.0	.2	.4	.3	1.4	.8	.3	.3	.2	.1	.1	.4	.2	.4	.2	.2	1.5	1.5	.2	.1
105.	.1	.1	.6	.4	1.5	.7	.5	.5	.3	.3	.2	.3	.2	.3	.2	.1	1.6	1.7	.4	.3
110.	.2	.0	.5	.5	1.5	.5	.6	.6	.4	.4	.3	.1	.1	.1	.1	.1	1.6	1.7	.5	.3
115.	.2	.0	.6	.6	1.3	.3	.6	.7	.5	.4	.4	.1	.0	.1	.0	.0	1.4	1.4	.5	.4
120.	.2	.0	.5	.6	1.1	.1	.7	.6	.6	.3	.3	.0	.0	.0	.0	.0	1.1	1.6	.5	.4
125.	.2	.0	.5	.6	.8	.0	.6	.7	.4	.3	.3	.0	.0	.0	.0	.0	.8	1.2	.5	.4
130.	.2	.0	.5	.4	.6	.0	.5	.6	.5	.1	.2	.0	.0	.0	.0	.0	.6	1.0	.4	.3
135.	.2	.0	.5	.4	.5	.0	.6	.5	.3	.2	.1	.0	.0	.0	.0	.0	.5	.8	.4	.3
140.	.2	.0	.5	.4	.4	.0	.6	.4	.3	.2	.1	.0	.0	.0	.0	.0	.4	.7	.4	.2
145.	.2	.0	.5	.4	.4	.0	.6	.4	.3	.1	.1	.0	.0	.0	.0	.0	.4	.7	.4	.2
150.	.2	.0	.6	.4	.3	.0	.5	.4	.2	.1	.1	.0	.0	.0	.0	.0	.3	.6	.3	.2
155.	.2	.0	.6	.4	.3	.0	.5	.4	.2	.2	.2	.0	.0	.0	.0	.0	.3	.6	.3	.2
160.	.2	.0	.5	.4	.3	.0	.5	.4	.1	.2	.2	.0	.0	.0	.0	.0	.3	.6	.3	.2
165.	.2	.0	.4	.4	.2	.0	.5	.3	.1	.2	.2	.0	.0	.0	.0	.0	.2	.5	.3	.2
170.	.2	.0	.4	.4	.2	.0	.3	.3	.1	.2	.2	.0	.0	.0	.0	.0	.2	.5	.3	.2
175.	.2	.0	.4	.3	.2	.0	.2	.3	.1	.2	.1	.0	.0	.0	.0	.0	.2	.5	.3	.2
180.	.2	.0	.4	.3	.2	.0	.1	.3	.1	.2	.1	.0	.0	.0	.0	.0	.2	.5	.3	.2
185.	.2	.0	.4	.3	.2	.0	.1	.2	.1	.2	.1	.0	.0	.0	.0	.0	.2	.5	.3	.2
190.	.2	.0	.4	.3	.2	.0	.2	.2	.2	.2	.1	.0	.0	.0	.0	.0	.2	.4	.3	.2
195.	.2	.0	.4	.3	.2	.0	.3	.2	.2	.2	.1	.0	.0	.0	.0	.0	.2	.4	.3	.2
200.	.2	.0	.4	.3	.2	.0	.3	.2	.2	.2	.1	.0	.0	.0	.0	.0	.2	.5	.3	.2
205.	.2	.0	.4	.3	.2	.0	.3	.2	.2	.2	.1	.0	.0	.0	.0	.0	.2	.5	.3	.2

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION CO FRIDAY PM

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	.2	.0	.3	.3	.2	.0	.2	.2	.2	.2	.1	.0	.0	.0	.0	.0	.2	.5	.3	.2
215.	.2	.0	.3	.3	.2	.0	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.2	.5	.3	.2
220.	.2	.0	.4	.3	.2	.0	.3	.2	.2	.2	.2	.0	.0	.0	.0	.0	.2	.5	.3	.2
225.	.2	.0	.4	.3	.2	.0	.3	.2	.2	.2	.2	.0	.0	.0	.0	.0	.2	.5	.3	.2
230.	.2	.0	.4	.4	.2	.0	.3	.2	.2	.2	.2	.0	.0	.0	.0	.0	.2	.5	.3	.2
235.	.2	.0	.4	.4	.2	.0	.2	.1	.2	.2	.2	.0	.0	.0	.0	.0	.2	.5	.3	.2
240.	.2	.0	.5	.4	.3	.0	.3	.1	.2	.2	.2	.0	.0	.0	.0	.0	.3	.6	.3	.2
245.	.1	.0	.4	.4	.3	.0	.3	.1	.2	.2	.2	.0	.0	.0	.0	.0	.3	.6	.3	.2
250.	.1	.0	.4	.4	.3	.0	.3	.1	.2	.2	.2	.0	.0	.0	.0	.0	.3	.6	.3	.2
255.	.0	.0	.2	.5	.4	.0	.2	.1	.2	.1	.2	.0	.0	.0	.0	.0	.4	.8	.4	.3
260.	.0	.0	.2	.5	.4	.0	.1	.1	.2	.1	.2	.0	.0	.0	.0	.0	.4	.8	.4	.3
265.	.0	.0	.2	.5	.5	.0	.1	.0	.2	.1	.2	.0	.0	.0	.0	.0	.5	.9	.4	.2
270.	.0	.0	.2	.4	.7	.0	.1	.2	.2	.1	.2	.0	.0	.0	.0	.0	.7	1.1	.4	.2
275.	.0	.0	.0	.3	.8	.0	.0	.2	.2	.1	.2	.0	.0	.0	.0	.0	.8	1.2	.4	.2
280.	.0	.0	.0	.1	1.0	.0	.0	.2	.2	.1	.2	.0	.0	.0	.0	.0	1.1	1.3	.2	.1
285.	.0	.0	.0	.1	1.1	.1	.0	.1	.1	.2	.2	.0	.0	.0	.0	.0	1.4	1.5	.2	.0
290.	.0	.0	.0	.0	1.3	.1	.0	.1	.1	.2	.2	.0	.0	.0	.0	.0	1.4	1.6	.0	.0
295.	.0	.0	.0	.1	1.3	.3	.0	.1	.1	.2	.2	.0	.0	.0	.0	.0	1.4	1.6	.0	.0
300.	.0	.0	.0	.1	1.2	.4	.0	.0	.1	.2	.2	.0	.0	.0	.0	.0	1.3	1.4	.0	.0
305.	.0	.0	.0	.1	1.2	.6	.0	.0	.1	.2	.2	.0	.0	.0	.0	.0	1.1	1.2	.0	.0
310.	.0	.0	.0	.1	1.0	.5	.0	.0	.1	.1	.1	.0	.0	.1	.0	.0	.9	1.0	.0	.0
315.	.0	.0	.0	.1	.9	.6	.0	.0	.0	.1	.1	.0	.0	.1	.0	.0	.8	.8	.0	.0
320.	.0	.0	.0	.1	.7	.7	.0	.0	.0	.1	.1	.1	.0	.1	.0	.0	.7	.7	.0	.0
325.	.0	.0	.0	.1	.7	.6	.0	.0	.0	.0	.0	.1	.0	.2	.1	.0	.7	.7	.0	.0
330.	.0	.0	.0	.1	.5	.6	.0	.0	.0	.0	.0	.1	.0	.2	.1	.0	.5	.6	.0	.0
335.	.0	.0	.0	.1	.5	.6	.0	.0	.0	.0	.0	.1	.0	.2	.1	.0	.5	.6	.0	.0
340.	.0	.0	.0	.1	.5	.7	.0	.0	.0	.0	.0	.1	.1	.2	.2	.1	.5	.6	.0	.0
345.	.0	.0	.0	.1	.4	.6	.0	.0	.0	.0	.0	.2	.1	.2	.2	.1	.4	.5	.0	.0
350.	.0	.0	.0	.1	.5	.6	.0	.0	.0	.0	.0	.2	.1	.2	.2	.1	.4	.5	.0	.0
355.	.0	.0	.0	.1	.5	.6	.0	.0	.0	.0	.0	.2	.1	.2	.2	.2	.4	.5	.0	.0
MAX	.2	.2	.6	.6	1.5	.8	.7	.7	.6	.4	.4	.4	.2	.4	.2	.2	1.6	1.7	.5	.4
DEGR.	110	15	105	115	105	40	120	115	120	110	115	90	0	90	0	0	110	110	110	115

(DEGR)	REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.																				
215.																				
220.																				
225.																				
230.																				
235.																				
240.																				
245.																				
250.																				
255.																				
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330.																				
335.																				
340.																				
345.																				
350.																				
355.																				
MAX																				
DEGR.																				

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION CO FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	.0	.0	.0	.0	.0	.4	.3	.1	.2	.1	.2	.2	.2	.2	.2	.2	.0	.0	.0	.0
5.	.0	.0	.0	.0	.0	.4	.3	.1	.2	.1	.2	.1	.2	.2	.2	.1	.0	.0	.0	.0
10.	.0	.0	.0	.0	.0	.5	.3	.2	.2	.2	.2	.0	.2	.2	.0	.1	.0	.0	.0	.0
15.	.0	.0	.0	.0	.0	.5	.4	.2	.2	.2	.2	.0	.0	.1	.0	.0	.0	.0	.0	.1
20.	.0	.0	.0	.0	.0	.6	.4	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.0	.1	.1
25.	.0	.0	.0	.0	.0	.6	.4	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.0	.1	.1
30.	.0	.0	.0	.0	.0	.6	.4	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.0	.2	.1
35.	.0	.0	.0	.0	.0	.7	.4	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.1	.1	.2
40.	.0	.0	.0	.0	.0	.7	.4	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.1	.1	.2
45.	.0	.0	.0	.0	.0	.7	.4	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.1	.1	.2
50.	.0	.0	.0	.0	.0	.6	.4	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.1	.1	.1
55.	.0	.0	.0	.0	.0	.6	.4	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.1	.1	.1
60.	.0	.0	.0	.0	.0	.6	.4	.2	.2	.2	.2	.0	.0	.0	.0	.0	.1	.1	.1	.1
65.	.0	.0	.0	.0	.0	.7	.4	.2	.2	.2	.2	.0	.0	.0	.0	.0	.1	.1	.1	.1
70.	.0	.0	.0	.0	.0	.8	.3	.3	.2	.2	.2	.0	.0	.0	.0	.0	.1	.1	.1	.1
75.	.0	.0	.0	.0	.0	.8	.5	.3	.2	.2	.1	.0	.0	.0	.0	.0	.1	.1	.1	.1
80.	.0	.0	.0	.0	.0	.8	.5	.4	.1	.2	.1	.0	.0	.0	.0	.0	.1	.0	.1	.1
85.	.0	.0	.0	.0	.0	.8	.7	.5	.2	.2	.2	.0	.0	.0	.0	.0	.1	.0	.1	.0
90.	.0	.0	.0	.0	.0	.9	.8	.6	.4	.2	.2	.0	.0	.0	.0	.0	.1	.0	.1	.0
95.	.0	.1	.0	.0	.0	.8	.9	.7	.7	.4	.3	.0	.0	.0	.0	.0	.1	.0	.1	.0
100.	.1	.2	.1	.1	.0	.9	.8	.8	.8	.6	.4	.1	.0	.0	.0	.0	.0	.1	.1	.1
105.	.1	.3	.3	.1	.1	.8	.7	.7	.8	.7	.5	.2	.1	.1	.0	.0	.1	.2	.1	.1
110.	.3	.5	.3	.3	.2	.6	.5	.5	.6	.6	.6	.3	.2	.1	.1	.1	.2	.2	.2	.2
115.	.3	.5	.4	.3	.2	.3	.3	.3	.5	.5	.5	.4	.2	.2	.2	.2	.2	.3	.3	.2
120.	.3	.4	.4	.2	.2	.1	.1	.1	.1	.3	.5	.4	.2	.2	.2	.2	.2	.3	.3	.3
125.	.2	.4	.4	.2	.2	.0	.0	.0	.0	.1	.2	.3	.2	.2	.2	.2	.3	.3	.3	.3
130.	.2	.4	.3	.2	.2	.0	.0	.0	.0	.0	.1	.2	.2	.2	.2	.2	.3	.3	.3	.3
135.	.2	.4	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.3	.3	.3	.3
140.	.2	.4	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.3	.3	.3	.3
145.	.2	.3	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.3	.3	.3	.3
150.	.2	.3	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.3	.3	.3	.3
155.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.3	.3	.3	.2
160.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.1	.3	.3	.3	.1
165.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.3	.3	.3	.1
170.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.3	.3	.3	.1
175.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.3	.3	.3	.1
180.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.3	.2	.2	.1
185.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.3	.3	.1	.1
190.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.2	.3	.1	.1
195.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.2	.3	.0	.0
200.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.2	.3	.0	.0
205.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.0	.2	.1	.0	.0

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION CO FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.0	.0	.1	.1	.0	.0
215.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.3	.2	.3	.0	.1	.1	.1	.0	.0
220.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.3	.3	.3	.1	.1	.1	.0	.0	.0
225.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.3	.4	.3	.2	.2	.1	.0	.0	.0
230.	.2	.2	.2	.2	.2	.0	.0	.0	.0	.0	.0	.4	.4	.2	.2	.2	.0	.0	.0	.0
235.	.2	.3	.2	.2	.2	.0	.0	.0	.0	.0	.0	.4	.3	.1	.1	.2	.0	.0	.0	.0
240.	.2	.3	.2	.2	.2	.0	.0	.0	.0	.0	.0	.4	.3	.1	.1	.2	.0	.0	.0	.0
245.	.2	.3	.2	.2	.2	.0	.0	.0	.0	.0	.0	.3	.2	.2	.1	.2	.0	.0	.0	.0
250.	.2	.3	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.1	.2	.0	.0	.0	.0
255.	.2	.3	.2	.2	.2	.0	.0	.0	.0	.0	.0	.2	.2	.2	.1	.2	.0	.0	.0	.0
260.	.2	.3	.2	.2	.1	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.0	.0	.0	.0
265.	.2	.2	.2	.1	.0	.0	.0	.0	.0	.0	.0	.1	.2	.2	.2	.2	.0	.0	.0	.0
270.	.2	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1	.2	.2	.2	.2	.0	.0	.0	.0
275.	.0	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.0	.0	.0	.0
280.	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.0	.0	.0	.0
285.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.0	.0	.0	.0
290.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.0	.0	.0	.0
295.	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.2	.2	.2	.2	.2	.0	.0	.0	.0
300.	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.2	.1	.2	.2	.2	.0	.0	.0	.0
305.	.0	.0	.0	.0	.0	.4	.1	.0	.0	.0	.0	.2	.1	.2	.2	.2	.0	.0	.0	.0
310.	.0	.0	.0	.0	.0	.4	.3	.1	.0	.0	.0	.2	.0	.2	.2	.2	.0	.0	.0	.0
315.	.0	.0	.0	.0	.0	.4	.2	.2	.0	.0	.0	.2	.0	.2	.2	.1	.0	.0	.0	.0
320.	.0	.0	.0	.0	.0	.5	.3	.2	.1	.1	.0	.2	.1	.2	.2	.0	.0	.0	.0	.0
325.	.0	.0	.0	.0	.0	.5	.2	.2	.2	.1	.0	.2	.1	.1	.2	.0	.0	.0	.0	.0
330.	.0	.0	.0	.0	.0	.5	.2	.2	.2	.2	.1	.2	.1	.1	.2	.0	.0	.0	.0	.0
335.	.0	.0	.0	.0	.0	.4	.2	.2	.3	.2	.1	.2	.1	.1	.2	.1	.0	.0	.0	.0
340.	.0	.0	.0	.0	.0	.4	.2	.2	.2	.3	.2	.2	.1	.2	.2	.2	.0	.0	.0	.0
345.	.0	.0	.0	.0	.0	.4	.2	.2	.2	.3	.2	.2	.2	.1	.2	.2	.0	.0	.0	.0
350.	.0	.0	.0	.0	.0	.3	.3	.1	.2	.2	.2	.2	.2	.1	.2	.2	.0	.0	.0	.0
355.	.0	.0	.0	.0	.0	.3	.3	.0	.2	.2	.2	.2	.2	.2	.1	.2	.0	.0	.0	.0
MAX	.3	.5	.4	.3	.2	.9	.9	.8	.8	.7	.6	.4	.4	.3	.2	.2	.3	.3	.3	.3
DEGR.	110	110	115	110	110	90	95	100	100	105	110	115	225	215	0	0	125	115	115	120

THE HIGHEST CONCENTRATION OF 1.70 PPM OCCURRED AT RECEPTOR REC18.

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 NOX EXISTING 1-HR FRIDAY PM

DATE : 8/17/10
TIME : 14:52:51

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	441.	0.8	0.0	43.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	163.	0.8	0.0	43.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	409.	0.8	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	38.	0.8	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	38.	1.3	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1600.0	*	122.	180.	AG	371.	1.3	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 NOX EXISTING 1-HR FRIDAY PM

DATE : 8/17/10
TIME : 14:52:51

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 NOX EXISTING 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	2.	2.	3.	3.	20.	22.	29.	34.	40.	45.	46.	41.	43.	49.	50.	21.	14.	9.
5.	1.	1.	3.	3.	4.	4.	22.	23.	26.	29.	32.	35.	35.	31.	51.	59.	60.	25.	17.	11.
10.	2.	2.	4.	4.	5.	5.	24.	25.	24.	25.	26.	26.	26.	23.	56.	66.	67.	31.	22.	15.
15.	3.	4.	7.	7.	9.	9.	28.	28.	23.	22.	22.	21.	19.	16.	56.	68.	71.	40.	30.	21.
20.	8.	10.	12.	13.	15.	15.	31.	29.	22.	20.	18.	17.	14.	12.	50.	64.	69.	48.	38.	28.
25.	15.	17.	20.	21.	23.	23.	31.	28.	19.	17.	15.	13.	10.	8.	42.	58.	64.	52.	43.	33.
30.	22.	26.	29.	29.	31.	31.	26.	23.	15.	13.	10.	9.	6.	5.	34.	50.	57.	52.	44.	35.
35.	28.	31.	34.	33.	34.	34.	18.	16.	9.	8.	7.	6.	3.	3.	27.	43.	50.	46.	39.	32.
40.	29.	33.	35.	33.	33.	33.	11.	8.	5.	5.	4.	4.	2.	2.	22.	38.	44.	39.	33.	26.
45.	29.	33.	34.	31.	30.	29.	6.	4.	3.	4.	3.	3.	1.	1.	18.	34.	40.	34.	28.	22.
50.	28.	32.	32.	28.	26.	26.	3.	2.	2.	3.	3.	3.	1.	1.	16.	31.	37.	31.	24.	20.
55.	26.	31.	31.	26.	23.	22.	2.	1.	2.	2.	2.	2.	1.	1.	15.	28.	35.	30.	23.	17.
60.	24.	31.	31.	25.	21.	20.	2.	1.	1.	2.	2.	2.	1.	1.	14.	25.	33.	29.	23.	16.
65.	22.	31.	32.	25.	20.	19.	2.	1.	1.	1.	1.	1.	0.	0.	13.	23.	31.	28.	22.	14.
70.	21.	30.	32.	25.	18.	17.	1.	1.	0.	1.	1.	1.	0.	0.	12.	20.	30.	27.	22.	12.
75.	20.	30.	32.	25.	17.	15.	1.	1.	0.	0.	0.	0.	0.	0.	12.	18.	30.	26.	21.	11.
80.	19.	29.	32.	26.	18.	15.	1.	1.	0.	0.	0.	0.	0.	0.	12.	16.	30.	26.	21.	10.
85.	18.	28.	32.	28.	18.	14.	1.	1.	0.	0.	0.	0.	0.	0.	13.	15.	32.	26.	20.	8.
90.	17.	28.	32.	29.	19.	14.	1.	0.	0.	0.	0.	0.	0.	0.	13.	14.	33.	26.	20.	7.
95.	16.	27.	31.	30.	20.	13.	1.	0.	0.	0.	0.	0.	0.	0.	13.	13.	32.	26.	19.	7.
100.	14.	26.	31.	31.	21.	13.	0.	0.	0.	0.	0.	0.	0.	0.	12.	12.	30.	25.	19.	7.
105.	13.	26.	32.	33.	22.	13.	0.	0.	0.	0.	0.	0.	0.	0.	12.	12.	30.	25.	18.	6.
110.	11.	25.	32.	34.	24.	13.	0.	0.	1.	1.	1.	0.	0.	0.	12.	12.	30.	25.	16.	6.
115.	11.	24.	33.	36.	25.	13.	0.	0.	1.	1.	1.	1.	0.	0.	13.	13.	31.	26.	15.	6.
120.	11.	22.	33.	37.	28.	13.	0.	1.	2.	2.	2.	1.	1.	1.	13.	13.	32.	26.	13.	6.
125.	11.	21.	33.	37.	30.	13.	0.	1.	2.	2.	2.	2.	1.	1.	14.	14.	32.	26.	12.	7.
130.	10.	20.	34.	37.	33.	14.	0.	1.	3.	3.	3.	2.	1.	1.	15.	15.	33.	25.	11.	7.
135.	10.	18.	34.	38.	36.	15.	0.	1.	3.	3.	3.	2.	1.	1.	16.	16.	33.	24.	11.	7.
140.	11.	17.	34.	39.	39.	17.	0.	2.	3.	3.	3.	2.	1.	1.	17.	17.	33.	23.	10.	8.
145.	11.	15.	32.	40.	42.	20.	1.	2.	3.	3.	3.	3.	1.	1.	18.	18.	33.	21.	11.	8.
150.	12.	15.	30.	42.	47.	24.	1.	2.	4.	4.	4.	3.	2.	2.	20.	20.	34.	20.	11.	9.
155.	13.	15.	28.	42.	52.	30.	1.	4.	5.	5.	4.	4.	2.	2.	22.	22.	35.	19.	12.	9.
160.	13.	15.	27.	42.	56.	38.	2.	6.	7.	7.	6.	5.	3.	3.	25.	25.	37.	18.	13.	10.
165.	14.	16.	26.	40.	59.	48.	4.	12.	12.	11.	10.	8.	6.	6.	29.	29.	40.	19.	14.	10.
170.	13.	16.	24.	39.	59.	59.	8.	21.	21.	20.	18.	15.	12.	12.	32.	32.	42.	18.	14.	9.
175.	11.	14.	22.	35.	55.	64.	15.	35.	34.	32.	29.	25.	20.	19.	31.	32.	41.	16.	12.	7.
180.	10.	12.	18.	29.	46.	63.	25.	49.	48.	46.	41.	35.	27.	27.	27.	27.	35.	12.	8.	5.
185.	9.	10.	16.	24.	37.	56.	34.	58.	58.	55.	49.	41.	32.	31.	19.	20.	25.	7.	5.	3.
190.	9.	10.	14.	20.	30.	46.	40.	62.	62.	58.	51.	42.	32.	32.	12.	12.	15.	4.	3.	2.
195.	10.	10.	15.	20.	26.	38.	43.	62.	61.	58.	50.	40.	29.	29.	6.	6.	9.	3.	3.	3.
200.	11.	11.	15.	20.	24.	32.	44.	58.	58.	55.	48.	37.	25.	25.	4.	4.	6.	4.	4.	5.
205.	11.	11.	15.	19.	23.	28.	46.	57.	55.	53.	47.	36.	23.	22.	3.	3.	5.	7.	7.	8.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 NOX EXISTING 1-HR FRIDAY PM

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	9.	9.	13.	17.	21.	24.	48.	57.	54.	52.	47.	35.	21.	21.	3.	4.	6.	10.	10.	11.
215.	6.	6.	10.	12.	16.	18.	47.	57.	52.	51.	46.	36.	21.	20.	4.	5.	7.	12.	12.	12.
220.	4.	4.	6.	8.	11.	12.	44.	55.	51.	49.	46.	37.	20.	20.	5.	6.	8.	12.	12.	12.
225.	2.	2.	3.	5.	7.	7.	41.	52.	49.	46.	43.	37.	19.	19.	5.	6.	8.	11.	11.	11.
230.	1.	1.	2.	3.	4.	5.	36.	48.	48.	45.	42.	37.	19.	18.	5.	6.	8.	9.	9.	10.
235.	1.	1.	1.	2.	3.	3.	32.	45.	46.	43.	40.	36.	18.	17.	5.	5.	7.	8.	8.	8.
240.	0.	0.	0.	2.	2.	3.	29.	41.	44.	40.	38.	35.	16.	16.	4.	5.	6.	7.	7.	7.
245.	0.	0.	0.	2.	2.	2.	26.	38.	43.	39.	36.	34.	16.	15.	4.	4.	5.	7.	7.	7.
250.	0.	0.	0.	2.	2.	2.	23.	35.	42.	39.	36.	34.	15.	15.	3.	4.	5.	6.	6.	6.
255.	0.	0.	0.	2.	2.	2.	20.	32.	42.	39.	36.	33.	15.	15.	3.	3.	4.	6.	6.	6.
260.	0.	0.	0.	2.	2.	2.	18.	29.	42.	39.	36.	33.	15.	15.	3.	3.	4.	6.	6.	6.
265.	0.	0.	0.	1.	2.	2.	16.	27.	43.	41.	38.	34.	16.	15.	3.	3.	4.	5.	5.	5.
270.	0.	0.	0.	1.	1.	1.	14.	26.	44.	42.	40.	35.	16.	16.	3.	3.	4.	5.	5.	5.
275.	0.	0.	0.	1.	1.	1.	13.	25.	42.	41.	39.	34.	17.	15.	3.	3.	4.	5.	5.	5.
280.	0.	0.	0.	1.	1.	1.	12.	25.	41.	39.	38.	34.	19.	14.	3.	3.	3.	5.	5.	5.
285.	0.	0.	0.	0.	1.	1.	12.	24.	40.	39.	38.	34.	20.	14.	3.	3.	4.	5.	5.	5.
290.	0.	0.	0.	0.	0.	0.	12.	24.	40.	39.	39.	34.	23.	15.	3.	3.	4.	5.	5.	5.
295.	0.	0.	0.	0.	0.	0.	13.	24.	41.	40.	40.	36.	25.	15.	3.	3.	5.	5.	5.	5.
300.	0.	0.	0.	0.	0.	0.	13.	24.	40.	41.	42.	39.	28.	16.	3.	4.	5.	6.	5.	5.
305.	0.	0.	0.	0.	0.	0.	13.	22.	40.	43.	44.	42.	31.	17.	4.	4.	6.	6.	5.	5.
310.	0.	0.	0.	0.	0.	0.	12.	21.	40.	44.	46.	45.	34.	19.	4.	4.	7.	7.	5.	5.
315.	0.	0.	0.	0.	1.	1.	12.	20.	39.	46.	47.	47.	38.	21.	4.	4.	9.	7.	5.	5.
320.	0.	0.	0.	1.	1.	1.	12.	20.	39.	48.	50.	50.	42.	24.	4.	5.	10.	9.	5.	5.
325.	0.	0.	1.	1.	1.	1.	13.	19.	38.	48.	52.	53.	46.	29.	4.	6.	11.	10.	5.	5.
330.	0.	0.	1.	1.	1.	1.	13.	20.	37.	48.	53.	55.	50.	34.	5.	7.	13.	11.	5.	5.
335.	0.	0.	1.	1.	2.	2.	14.	20.	36.	47.	54.	58.	55.	40.	7.	9.	15.	12.	6.	5.
340.	0.	0.	1.	2.	2.	2.	15.	20.	35.	46.	55.	60.	59.	46.	10.	12.	17.	13.	7.	6.
345.	0.	0.	2.	2.	2.	2.	16.	20.	34.	44.	55.	62.	62.	51.	14.	18.	22.	15.	8.	6.
350.	0.	0.	2.	2.	2.	2.	17.	21.	33.	42.	52.	59.	61.	52.	22.	26.	28.	16.	9.	7.
355.	0.	0.	2.	2.	2.	2.	18.	21.	31.	38.	47.	53.	55.	48.	32.	37.	38.	18.	11.	8.
MAX	29.	33.	35.	42.	59.	64.	48.	62.	62.	58.	55.	62.	62.	52.	56.	68.	71.	52.	44.	35.
DEGR.	40	40	40	155	170	175	210	190	190	190	340	345	345	350	10	15	15	25	30	30

THE HIGHEST CONCENTRATION OF 71. ug/m**3 OCCURRED AT RECEPTOR REC17.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX BUILD 1-HOUR FRIDAY PM

DATE : 9/10/10
TIME : 10:33:57

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	1325.	.3	.0	67.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	1196.	.3	.0	67.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	1030.	.3	.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	42.	.3	.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	42.	.5	.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1400.0	*	322.	180.	AG	988.	.5	.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX BUILD 1-HOUR FRIDAY PM

DATE : 9/10/10
TIME : 10:33:57

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0
21. RECEPTOR NO. 7-21	668.0	1533.0	6.0
22. RECEPTOR NO. 7-22	700.0	1533.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX BUILD 1-HOUR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	4.	4.	5.	5.	6.	6.	22.	26.	35.	41.	46.	51.	55.	58.	60.	58.	56.	25.	22.	21.
5.	6.	5.	7.	7.	8.	8.	24.	27.	32.	36.	38.	40.	42.	44.	72.	69.	67.	29.	26.	24.
10.	8.	8.	10.	10.	12.	12.	27.	29.	31.	32.	31.	31.	32.	32.	78.	77.	75.	35.	31.	28.
15.	12.	13.	15.	15.	17.	17.	32.	33.	33.	30.	27.	26.	25.	24.	80.	80.	79.	44.	39.	34.
20.	20.	19.	22.	22.	24.	24.	36.	36.	33.	28.	24.	21.	19.	18.	75.	76.	78.	53.	48.	41.
25.	29.	28.	31.	31.	32.	31.	38.	37.	30.	24.	19.	16.	14.	13.	67.	70.	73.	60.	55.	48.
30.	37.	36.	38.	37.	37.	37.	36.	35.	24.	18.	14.	11.	10.	9.	59.	61.	65.	61.	57.	50.
35.	41.	40.	40.	39.	38.	38.	29.	28.	16.	12.	9.	7.	6.	5.	51.	53.	56.	57.	53.	47.
40.	42.	40.	39.	37.	36.	36.	21.	19.	9.	7.	5.	5.	4.	4.	46.	46.	48.	50.	47.	40.
45.	40.	39.	37.	34.	32.	31.	14.	12.	5.	5.	4.	4.	4.	3.	42.	42.	43.	43.	40.	33.
50.	39.	37.	35.	31.	28.	28.	9.	8.	3.	3.	3.	3.	3.	3.	40.	40.	40.	37.	33.	28.
55.	37.	36.	35.	29.	25.	24.	7.	6.	3.	2.	2.	2.	2.	2.	37.	37.	38.	34.	30.	24.
60.	35.	36.	36.	28.	22.	22.	5.	4.	2.	2.	2.	2.	2.	2.	35.	35.	35.	32.	28.	22.
65.	34.	37.	36.	27.	20.	20.	4.	4.	2.	1.	1.	1.	1.	1.	33.	33.	33.	30.	26.	21.
70.	31.	37.	36.	26.	18.	17.	3.	3.	1.	1.	1.	1.	1.	1.	33.	32.	32.	29.	25.	20.
75.	29.	36.	36.	26.	17.	16.	4.	3.	1.	0.	0.	0.	0.	0.	32.	32.	32.	28.	25.	21.
80.	29.	35.	36.	27.	18.	15.	3.	3.	1.	0.	0.	0.	0.	0.	33.	33.	33.	27.	23.	20.
85.	28.	34.	36.	29.	19.	14.	3.	2.	1.	0.	0.	0.	0.	0.	34.	34.	34.	27.	23.	19.
90.	28.	34.	35.	31.	20.	14.	2.	2.	1.	0.	0.	0.	0.	0.	35.	35.	35.	27.	23.	19.
95.	27.	34.	35.	33.	21.	14.	2.	2.	0.	0.	0.	0.	0.	0.	34.	34.	34.	26.	23.	19.
100.	27.	34.	34.	34.	22.	13.	2.	2.	0.	0.	0.	0.	0.	0.	33.	33.	33.	26.	23.	19.
105.	26.	34.	34.	36.	23.	13.	2.	1.	0.	0.	0.	0.	0.	0.	32.	32.	32.	26.	23.	19.
110.	26.	32.	34.	37.	24.	13.	2.	1.	1.	1.	1.	1.	1.	1.	33.	33.	33.	28.	24.	19.
115.	27.	31.	34.	38.	26.	13.	2.	2.	1.	1.	1.	1.	1.	1.	33.	33.	33.	29.	24.	20.
120.	27.	31.	34.	39.	29.	13.	3.	2.	2.	2.	2.	2.	2.	2.	35.	35.	35.	30.	25.	20.
125.	28.	31.	34.	39.	31.	13.	2.	2.	2.	2.	2.	2.	2.	2.	37.	37.	37.	31.	25.	21.
130.	28.	32.	35.	39.	34.	14.	2.	2.	3.	3.	3.	3.	3.	3.	40.	40.	40.	31.	25.	21.
135.	28.	34.	37.	41.	38.	16.	2.	3.	3.	3.	3.	3.	3.	3.	42.	42.	42.	31.	27.	21.
140.	29.	35.	41.	42.	41.	18.	2.	3.	3.	3.	3.	3.	3.	3.	45.	45.	45.	33.	28.	21.
145.	29.	36.	43.	44.	45.	21.	2.	3.	4.	4.	4.	4.	4.	4.	48.	48.	48.	34.	30.	21.
150.	29.	37.	44.	47.	50.	26.	2.	4.	5.	4.	4.	4.	4.	4.	52.	52.	52.	36.	32.	21.
155.	28.	38.	45.	49.	56.	32.	3.	6.	6.	6.	6.	5.	5.	5.	57.	57.	57.	38.	31.	20.
160.	27.	38.	45.	52.	62.	41.	4.	10.	9.	9.	9.	8.	8.	8.	62.	63.	64.	40.	31.	19.
165.	25.	36.	45.	56.	69.	54.	7.	17.	16.	15.	15.	14.	14.	13.	69.	71.	72.	41.	30.	17.
170.	24.	34.	42.	55.	71.	67.	13.	29.	28.	27.	27.	26.	25.	24.	71.	73.	75.	38.	26.	14.
175.	24.	31.	37.	49.	68.	76.	23.	47.	46.	45.	44.	43.	41.	40.	67.	70.	72.	32.	21.	11.
180.	23.	28.	31.	41.	59.	77.	37.	66.	65.	63.	62.	60.	58.	56.	56.	58.	60.	24.	15.	9.
185.	23.	25.	28.	34.	47.	69.	49.	78.	77.	75.	73.	72.	70.	67.	40.	41.	43.	17.	12.	9.
190.	25.	26.	28.	31.	38.	57.	58.	82.	80.	78.	76.	75.	73.	71.	24.	25.	26.	13.	11.	11.
195.	29.	29.	30.	32.	35.	47.	62.	81.	77.	75.	73.	72.	71.	69.	14.	14.	15.	14.	14.	14.
200.	32.	32.	33.	35.	36.	43.	64.	79.	72.	68.	66.	65.	64.	63.	9.	10.	11.	20.	20.	21.
205.	34.	34.	35.	37.	38.	41.	67.	80.	71.	66.	62.	61.	59.	58.	8.	10.	12.	27.	27.	28.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX BUILD 1-HOUR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20	REC21	REC22
210.	32.	32.	33.	35.	36.	38.	67.	80.	73.	66.	61.	59.	57.	55.	10.	12.	16.	33.	33.	33.		
215.	26.	26.	27.	30.	31.	32.	64.	78.	75.	67.	62.	58.	56.	54.	13.	16.	21.	35.	34.	34.		
220.	18.	19.	20.	23.	23.	24.	57.	72.	73.	66.	61.	58.	55.	54.	16.	18.	23.	32.	32.	32.		
225.	12.	12.	13.	16.	16.	16.	50.	65.	68.	63.	58.	55.	53.	52.	17.	19.	23.	29.	29.	28.		
230.	8.	8.	8.	11.	11.	11.	43.	59.	64.	60.	56.	53.	52.	50.	16.	18.	22.	25.	25.	25.		
235.	5.	6.	6.	8.	8.	8.	37.	53.	59.	56.	52.	50.	48.	47.	14.	16.	19.	22.	23.	22.		
240.	4.	4.	4.	6.	6.	6.	33.	48.	55.	52.	49.	47.	46.	45.	13.	15.	18.	21.	21.	20.		
245.	3.	3.	2.	4.	5.	5.	29.	43.	52.	50.	46.	44.	43.	42.	12.	14.	16.	20.	19.	18.		
250.	3.	3.	2.	4.	4.	4.	25.	38.	50.	48.	45.	43.	42.	41.	11.	13.	15.	19.	16.	16.		
255.	3.	3.	2.	4.	5.	5.	21.	34.	49.	47.	44.	42.	41.	40.	10.	12.	13.	17.	14.	14.		
260.	3.	3.	1.	3.	4.	4.	19.	31.	48.	47.	45.	42.	41.	40.	10.	11.	13.	17.	14.	14.		
265.	2.	2.	0.	3.	3.	3.	17.	30.	49.	48.	46.	43.	42.	41.	9.	11.	12.	16.	14.	13.		
270.	2.	2.	0.	2.	3.	3.	15.	29.	49.	49.	47.	45.	44.	43.	9.	11.	12.	15.	13.	13.		
275.	2.	2.	0.	2.	3.	3.	15.	28.	48.	47.	46.	43.	42.	41.	9.	10.	11.	14.	13.	12.		
280.	2.	2.	1.	2.	3.	3.	14.	27.	46.	45.	44.	42.	41.	40.	9.	10.	11.	14.	13.	12.		
285.	1.	1.	1.	2.	3.	3.	14.	27.	46.	44.	44.	41.	40.	39.	9.	10.	11.	13.	12.	12.		
290.	1.	1.	2.	2.	3.	3.	13.	26.	46.	45.	44.	41.	40.	40.	9.	10.	11.	12.	12.	12.		
295.	2.	2.	2.	3.	4.	4.	13.	25.	47.	46.	45.	43.	41.	41.	10.	11.	12.	12.	12.	12.		
300.	2.	2.	3.	3.	4.	4.	13.	25.	46.	47.	47.	45.	43.	42.	10.	12.	13.	12.	12.	12.		
305.	1.	1.	3.	3.	4.	4.	13.	24.	46.	49.	49.	48.	46.	45.	11.	12.	14.	12.	12.	12.		
310.	1.	0.	3.	3.	3.	3.	13.	23.	45.	50.	50.	50.	48.	47.	11.	12.	14.	12.	12.	12.		
315.	1.	0.	3.	3.	3.	3.	14.	23.	44.	51.	52.	52.	50.	49.	12.	13.	15.	16.	12.	12.		
320.	2.	0.	2.	3.	3.	3.	14.	22.	44.	53.	55.	55.	54.	53.	12.	13.	16.	16.	12.	12.		
325.	2.	1.	2.	3.	3.	3.	14.	22.	43.	54.	58.	58.	57.	56.	13.	14.	16.	16.	12.	12.		
330.	2.	1.	3.	3.	3.	3.	15.	22.	42.	54.	60.	61.	61.	60.	14.	15.	18.	17.	13.	13.		
335.	2.	1.	3.	4.	3.	3.	15.	22.	41.	54.	62.	64.	65.	64.	15.	17.	19.	17.	15.	13.		
340.	3.	2.	3.	4.	4.	4.	16.	22.	40.	52.	62.	67.	68.	69.	18.	19.	21.	18.	17.	14.		
345.	3.	2.	3.	3.	5.	5.	16.	22.	39.	51.	62.	68.	72.	74.	23.	24.	25.	20.	19.	14.		
350.	3.	2.	4.	4.	4.	4.	18.	23.	38.	48.	59.	66.	70.	73.	32.	32.	32.	21.	20.	16.		
355.	3.	3.	4.	4.	5.	5.	20.	25.	37.	45.	53.	60.	64.	68.	45.	44.	43.	22.	21.	18.		
MAX	42.	40.	45.	56.	71.	77.	67.	82.	80.	78.	76.	75.	73.	74.	80.	80.	79.	61.	57.	50.		
DEGR.	40	40	160	165	170	180	210	190	190	190	190	190	190	345	15	15	15	30	30	30		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX BUILD 1-HOUR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
0.	61.	60.
5.	73.	45.
10.	80.	32.
15.	81.	23.
20.	74.	17.
25.	66.	12.
30.	57.	8.
35.	51.	5.
40.	46.	4.
45.	42.	3.
50.	40.	3.
55.	37.	2.
60.	35.	2.
65.	33.	1.
70.	33.	1.
75.	32.	0.
80.	33.	0.
85.	34.	0.
90.	35.	0.
95.	34.	0.
100.	33.	0.
105.	32.	0.
110.	32.	1.
115.	33.	1.
120.	35.	2.
125.	37.	2.
130.	40.	3.
135.	41.	3.
140.	45.	3.
145.	48.	4.
150.	52.	4.
155.	56.	5.
160.	61.	8.
165.	67.	13.
170.	68.	23.
175.	64.	38.
180.	54.	54.
185.	38.	64.
190.	23.	68.
195.	13.	67.
200.	8.	62.
205.	7.	57.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX BUILD 1-HOUR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
210.	8.	54.
215.	11.	53.
220.	13.	52.
225.	15.	51.
230.	14.	49.
235.	13.	47.
240.	12.	44.
245.	11.	42.
250.	10.	40.
255.	9.	40.
260.	9.	40.
265.	8.	41.
270.	8.	42.
275.	8.	41.
280.	8.	39.
285.	8.	39.
290.	9.	39.
295.	9.	40.
300.	10.	42.
305.	10.	44.
310.	10.	46.
315.	11.	48.
320.	11.	52.
325.	12.	55.
330.	13.	59.
335.	14.	64.
340.	17.	70.
345.	22.	76.
350.	32.	76.
355.	46.	70.
MAX	81.	76.
DEGR.	15	350

THE HIGHEST CONCENTRATION OF 82. ug/m**3 OCCURRED AT RECEPTOR REC8 .

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX NO-BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:33:34

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	596.	.3	.0	43.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	311.	.3	.0	43.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	506.	.3	.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	42.	.3	.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	42.	.5	.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1600.0	*	122.	180.	AG	464.	.5	.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX NO-BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:33:34

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX NO-BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	1.	1.	2.	2.	11.	12.	15.	18.	21.	23.	24.	22.	22.	26.	26.	12.	8.	6.
5.	1.	1.	1.	2.	2.	2.	12.	13.	14.	15.	17.	18.	19.	16.	27.	31.	31.	14.	10.	8.
10.	1.	1.	2.	2.	3.	3.	14.	14.	13.	13.	14.	14.	14.	12.	29.	34.	35.	17.	13.	10.
15.	2.	2.	4.	4.	5.	5.	16.	15.	13.	12.	12.	11.	10.	9.	29.	35.	37.	22.	17.	13.
20.	5.	5.	7.	7.	8.	8.	17.	16.	12.	11.	10.	9.	8.	7.	26.	33.	36.	26.	21.	17.
25.	9.	10.	11.	12.	13.	13.	17.	16.	11.	9.	8.	7.	6.	4.	22.	30.	34.	28.	24.	20.
30.	13.	14.	16.	16.	17.	17.	15.	13.	8.	7.	6.	5.	3.	3.	18.	26.	30.	28.	24.	20.
35.	16.	17.	19.	18.	19.	19.	10.	9.	5.	5.	4.	3.	2.	1.	14.	22.	26.	24.	21.	18.
40.	17.	19.	19.	18.	18.	18.	6.	5.	3.	3.	2.	2.	1.	1.	11.	19.	23.	21.	18.	15.
45.	17.	18.	18.	17.	16.	16.	3.	2.	1.	2.	2.	2.	1.	1.	9.	17.	20.	18.	15.	12.
50.	16.	18.	18.	16.	14.	14.	2.	1.	1.	1.	1.	1.	1.	1.	8.	16.	19.	16.	13.	10.
55.	15.	17.	17.	14.	13.	12.	1.	1.	1.	1.	1.	1.	0.	0.	8.	14.	18.	15.	12.	9.
60.	14.	17.	17.	14.	12.	11.	1.	1.	1.	1.	1.	1.	0.	0.	7.	13.	17.	15.	12.	8.
65.	13.	17.	17.	14.	11.	10.	1.	1.	0.	1.	1.	1.	0.	0.	6.	12.	16.	14.	12.	7.
70.	12.	17.	17.	14.	10.	10.	1.	1.	0.	0.	0.	0.	0.	0.	6.	11.	16.	13.	11.	7.
75.	12.	16.	17.	14.	9.	9.	1.	1.	0.	0.	0.	0.	0.	0.	6.	9.	15.	13.	11.	6.
80.	11.	16.	17.	14.	10.	8.	1.	0.	0.	0.	0.	0.	0.	0.	6.	8.	16.	13.	11.	5.
85.	11.	16.	17.	15.	10.	8.	1.	0.	0.	0.	0.	0.	0.	0.	7.	8.	16.	13.	11.	4.
90.	10.	15.	17.	15.	10.	8.	1.	0.	0.	0.	0.	0.	0.	0.	7.	7.	17.	13.	10.	4.
95.	9.	15.	17.	16.	11.	7.	0.	0.	0.	0.	0.	0.	0.	0.	7.	7.	16.	13.	10.	4.
100.	8.	15.	17.	17.	11.	7.	0.	0.	0.	0.	0.	0.	0.	0.	6.	6.	16.	13.	10.	3.
105.	8.	14.	17.	17.	12.	7.	0.	0.	0.	0.	0.	0.	0.	0.	6.	6.	16.	13.	9.	3.
110.	7.	14.	17.	18.	13.	7.	0.	0.	0.	0.	0.	0.	0.	0.	6.	6.	16.	13.	9.	3.
115.	7.	13.	18.	19.	14.	7.	0.	0.	1.	1.	1.	0.	0.	0.	6.	6.	16.	13.	8.	3.
120.	7.	13.	18.	19.	15.	7.	0.	0.	1.	1.	1.	1.	0.	0.	7.	7.	16.	13.	7.	3.
125.	7.	12.	18.	20.	16.	7.	0.	0.	1.	1.	1.	1.	0.	0.	7.	7.	17.	13.	6.	3.
130.	7.	11.	18.	19.	17.	8.	0.	1.	1.	1.	1.	1.	1.	1.	8.	8.	17.	13.	6.	4.
135.	7.	11.	18.	20.	19.	8.	0.	1.	2.	2.	2.	1.	1.	1.	8.	8.	17.	13.	5.	4.
140.	7.	10.	18.	21.	20.	9.	0.	1.	2.	2.	2.	1.	1.	1.	9.	9.	17.	12.	5.	4.
145.	7.	9.	17.	21.	22.	11.	0.	1.	2.	2.	2.	1.	1.	1.	9.	9.	17.	11.	5.	4.
150.	7.	9.	16.	22.	25.	13.	1.	1.	2.	2.	2.	1.	1.	1.	10.	10.	17.	10.	6.	5.
155.	8.	9.	15.	22.	27.	16.	1.	2.	3.	3.	2.	2.	1.	1.	11.	11.	18.	10.	6.	5.
160.	8.	9.	15.	22.	29.	20.	1.	3.	4.	4.	3.	3.	2.	2.	13.	13.	19.	10.	7.	5.
165.	8.	10.	15.	21.	31.	26.	2.	6.	6.	6.	5.	4.	3.	3.	15.	15.	21.	10.	7.	5.
170.	8.	10.	14.	21.	31.	31.	4.	11.	11.	10.	9.	8.	6.	6.	16.	16.	21.	9.	7.	5.
175.	8.	9.	13.	19.	29.	34.	8.	18.	18.	17.	15.	13.	10.	10.	16.	16.	21.	8.	6.	4.
180.	7.	8.	11.	16.	25.	33.	13.	25.	25.	23.	21.	18.	14.	14.	14.	14.	18.	6.	4.	3.
185.	7.	7.	10.	14.	20.	30.	17.	30.	30.	28.	25.	21.	16.	16.	10.	10.	13.	4.	3.	2.
190.	7.	7.	10.	12.	17.	25.	21.	32.	32.	30.	26.	21.	16.	16.	6.	6.	8.	3.	2.	2.
195.	8.	8.	10.	12.	15.	21.	23.	32.	31.	30.	26.	21.	15.	15.	3.	3.	5.	2.	2.	2.
200.	9.	9.	11.	13.	15.	19.	24.	31.	30.	28.	25.	19.	13.	13.	2.	2.	3.	4.	4.	4.
205.	9.	9.	11.	12.	15.	17.	25.	31.	29.	28.	25.	19.	12.	12.	2.	2.	3.	6.	6.	6.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX NO-BUILD 1-HR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	7.	7.	9.	11.	13.	14.	27.	31.	29.	28.	25.	19.	11.	11.	2.	3.	4.	8.	8.	9.
215.	5.	5.	7.	8.	10.	11.	26.	31.	29.	27.	25.	19.	11.	11.	3.	4.	5.	9.	9.	10.
220.	3.	3.	4.	5.	7.	7.	25.	30.	28.	27.	25.	20.	11.	11.	4.	4.	6.	9.	9.	9.
225.	1.	2.	2.	3.	4.	4.	23.	28.	27.	25.	24.	20.	11.	11.	4.	4.	6.	8.	8.	9.
230.	1.	1.	1.	2.	3.	3.	20.	26.	26.	24.	23.	20.	11.	10.	4.	4.	5.	7.	7.	7.
235.	1.	1.	1.	1.	2.	2.	18.	24.	25.	23.	22.	19.	10.	10.	3.	4.	5.	6.	6.	6.
240.	0.	0.	0.	1.	1.	2.	16.	22.	24.	22.	20.	19.	9.	9.	3.	3.	4.	6.	6.	6.
245.	0.	0.	0.	1.	1.	1.	14.	20.	23.	21.	20.	19.	9.	9.	3.	3.	4.	5.	5.	5.
250.	0.	0.	0.	1.	1.	1.	13.	19.	23.	21.	19.	18.	9.	8.	3.	3.	3.	5.	5.	5.
255.	0.	0.	0.	1.	1.	1.	11.	17.	22.	21.	19.	18.	9.	8.	2.	3.	3.	5.	5.	5.
260.	0.	0.	0.	1.	1.	1.	10.	16.	22.	21.	19.	18.	9.	8.	2.	3.	3.	4.	4.	4.
265.	0.	0.	0.	1.	1.	1.	9.	15.	23.	21.	20.	18.	9.	8.	2.	2.	3.	4.	4.	4.
270.	0.	0.	0.	1.	1.	1.	8.	14.	23.	22.	21.	19.	9.	9.	2.	2.	3.	4.	4.	4.
275.	0.	0.	0.	1.	1.	1.	7.	13.	22.	21.	21.	18.	10.	8.	2.	2.	3.	4.	4.	4.
280.	0.	0.	0.	0.	1.	1.	7.	13.	21.	21.	20.	18.	10.	8.	2.	2.	3.	4.	4.	4.
285.	0.	0.	0.	0.	0.	0.	7.	13.	21.	20.	20.	18.	11.	8.	2.	2.	3.	4.	4.	4.
290.	0.	0.	0.	0.	0.	0.	7.	13.	21.	20.	21.	18.	12.	8.	2.	2.	3.	4.	4.	4.
295.	0.	0.	0.	0.	0.	0.	7.	13.	21.	21.	21.	19.	14.	8.	2.	3.	3.	4.	4.	4.
300.	0.	0.	0.	0.	0.	0.	7.	13.	21.	22.	22.	21.	15.	9.	2.	3.	4.	4.	4.	4.
305.	0.	0.	0.	0.	0.	0.	7.	12.	21.	23.	23.	22.	17.	9.	2.	3.	4.	4.	4.	4.
310.	0.	0.	0.	0.	0.	0.	7.	11.	21.	23.	24.	23.	18.	10.	3.	3.	4.	5.	4.	4.
315.	0.	0.	0.	0.	0.	0.	7.	11.	21.	24.	25.	25.	20.	11.	3.	3.	5.	5.	4.	4.
320.	0.	0.	0.	0.	1.	1.	7.	11.	20.	25.	26.	26.	22.	13.	3.	3.	6.	6.	4.	4.
325.	0.	0.	0.	1.	1.	1.	7.	10.	20.	25.	27.	27.	24.	15.	3.	4.	6.	6.	4.	4.
330.	0.	0.	1.	1.	1.	1.	7.	11.	20.	25.	28.	29.	26.	18.	3.	5.	7.	7.	4.	4.
335.	0.	0.	1.	1.	1.	1.	8.	11.	19.	25.	28.	30.	28.	21.	4.	5.	8.	7.	4.	4.
340.	0.	0.	1.	1.	1.	1.	8.	11.	19.	24.	29.	31.	30.	24.	5.	7.	9.	8.	5.	4.
345.	0.	0.	1.	1.	1.	1.	9.	11.	18.	23.	29.	32.	32.	27.	8.	10.	11.	8.	6.	4.
350.	0.	0.	1.	1.	1.	1.	9.	11.	17.	22.	27.	31.	32.	27.	12.	14.	15.	9.	6.	5.
355.	0.	0.	1.	1.	1.	1.	10.	12.	16.	20.	25.	28.	29.	25.	17.	19.	20.	10.	7.	6.
MAX	17.	19.	19.	22.	31.	34.	27.	32.	32.	30.	29.	32.	32.	27.	29.	35.	37.	28.	24.	20.
DEGR.	40	40	40	160	170	175	210	190	190	190	340	345	345	350	15	15	15	25	25	30

THE HIGHEST CONCENTRATION OF 37. ug/m**3 OCCURRED AT RECEPTOR REC17.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX CUMULATIVE BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:34:34

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	1588.	0.3	0.0	67.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	1393.	0.3	0.0	67.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	1001.	0.3	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	42.	0.3	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	42.	0.5	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1400.0	*	322.	180.	AG	959.	0.5	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX CUMULATIVE BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:34:34

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0
21. RECEPTOR NO. 7-21	668.0	1533.0	6.0
22. RECEPTOR NO. 7-22	700.0	1533.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX CUMULATIVE BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	5.	4.	6.	6.	7.	7.	26.	30.	38.	44.	48.	52.	55.	58.	61.	59.	58.	29.	26.	24.
5.	6.	6.	8.	9.	10.	10.	29.	31.	36.	39.	40.	42.	44.	45.	72.	71.	69.	33.	30.	28.
10.	9.	10.	12.	12.	14.	14.	33.	34.	36.	36.	34.	34.	34.	34.	79.	78.	77.	40.	36.	32.
15.	14.	15.	18.	18.	20.	20.	38.	39.	38.	35.	30.	28.	27.	26.	81.	82.	82.	50.	45.	39.
20.	23.	23.	27.	27.	28.	28.	43.	43.	39.	32.	27.	24.	22.	20.	76.	78.	81.	60.	54.	47.
25.	34.	34.	37.	37.	38.	38.	45.	45.	36.	28.	22.	18.	16.	14.	68.	71.	75.	67.	62.	54.
30.	43.	42.	45.	44.	44.	44.	43.	42.	28.	20.	15.	12.	11.	9.	59.	61.	66.	67.	63.	56.
35.	48.	47.	48.	46.	46.	46.	35.	33.	18.	13.	9.	8.	6.	6.	51.	52.	56.	61.	58.	52.
40.	48.	47.	46.	44.	43.	43.	25.	23.	11.	7.	6.	5.	4.	4.	45.	46.	47.	53.	50.	44.
45.	46.	45.	43.	40.	38.	38.	17.	14.	6.	5.	4.	4.	3.	3.	41.	41.	42.	44.	42.	36.
50.	43.	42.	40.	36.	34.	33.	11.	9.	4.	3.	3.	3.	3.	3.	38.	38.	39.	38.	35.	29.
55.	40.	40.	39.	34.	30.	29.	8.	7.	3.	2.	2.	2.	2.	2.	36.	36.	37.	35.	31.	25.
60.	38.	40.	40.	32.	27.	26.	6.	5.	2.	2.	2.	2.	2.	2.	34.	34.	34.	32.	28.	22.
65.	36.	40.	40.	31.	24.	23.	5.	4.	2.	1.	1.	1.	1.	1.	32.	32.	32.	30.	27.	21.
70.	34.	40.	40.	29.	22.	21.	4.	4.	2.	1.	1.	1.	1.	1.	32.	31.	31.	28.	25.	20.
75.	31.	39.	38.	29.	20.	19.	5.	4.	1.	0.	0.	0.	0.	0.	31.	31.	31.	27.	25.	21.
80.	31.	38.	39.	30.	21.	18.	4.	3.	1.	0.	0.	0.	0.	0.	32.	32.	32.	27.	23.	20.
85.	30.	37.	38.	32.	21.	17.	3.	3.	1.	0.	0.	0.	0.	0.	33.	33.	33.	26.	23.	19.
90.	29.	36.	38.	33.	22.	17.	3.	3.	1.	0.	0.	0.	0.	0.	34.	34.	34.	26.	23.	19.
95.	29.	36.	37.	35.	23.	16.	2.	2.	0.	0.	0.	0.	0.	0.	33.	33.	33.	25.	22.	19.
100.	28.	36.	37.	36.	24.	16.	2.	2.	0.	0.	0.	0.	0.	0.	32.	32.	32.	25.	22.	19.
105.	28.	36.	36.	38.	25.	16.	2.	2.	0.	0.	0.	0.	0.	0.	31.	31.	31.	25.	23.	19.
110.	27.	34.	36.	39.	27.	15.	2.	2.	1.	1.	1.	1.	1.	1.	32.	32.	32.	28.	23.	19.
115.	28.	32.	36.	40.	28.	15.	3.	2.	1.	1.	1.	1.	1.	1.	32.	32.	32.	29.	24.	20.
120.	29.	32.	36.	40.	31.	16.	3.	3.	2.	2.	2.	2.	2.	2.	34.	34.	34.	30.	25.	20.
125.	29.	32.	36.	41.	33.	16.	3.	2.	2.	2.	2.	2.	2.	2.	36.	36.	36.	30.	25.	20.
130.	29.	34.	37.	41.	36.	17.	2.	2.	3.	3.	3.	3.	3.	3.	38.	38.	38.	31.	25.	21.
135.	30.	35.	39.	43.	39.	18.	2.	3.	3.	3.	3.	3.	3.	3.	40.	40.	40.	30.	27.	21.
140.	30.	36.	43.	44.	43.	20.	2.	3.	4.	3.	3.	3.	3.	3.	43.	43.	43.	32.	28.	21.
145.	31.	38.	45.	46.	47.	23.	2.	4.	4.	4.	4.	4.	4.	4.	47.	47.	47.	34.	30.	21.
150.	30.	39.	46.	48.	52.	28.	3.	5.	4.	4.	4.	4.	4.	4.	50.	50.	50.	36.	31.	21.
155.	30.	40.	47.	51.	58.	34.	3.	6.	6.	5.	5.	5.	5.	5.	55.	56.	56.	38.	31.	20.
160.	28.	40.	48.	54.	64.	44.	5.	10.	9.	8.	8.	8.	8.	8.	61.	62.	62.	39.	31.	19.
165.	27.	38.	48.	58.	70.	56.	8.	17.	15.	14.	14.	14.	14.	13.	67.	69.	70.	40.	30.	18.
170.	27.	37.	45.	57.	73.	69.	13.	29.	28.	26.	26.	25.	24.	24.	69.	71.	73.	37.	26.	14.
175.	27.	35.	40.	52.	70.	79.	23.	46.	45.	43.	42.	41.	40.	38.	65.	68.	70.	31.	21.	12.
180.	26.	31.	35.	44.	62.	80.	36.	64.	63.	61.	60.	58.	57.	55.	55.	57.	58.	24.	16.	10.
185.	26.	29.	32.	38.	51.	72.	49.	76.	75.	73.	71.	70.	68.	65.	38.	40.	41.	17.	12.	10.
190.	29.	30.	32.	36.	43.	61.	58.	81.	78.	76.	74.	73.	71.	69.	24.	24.	26.	14.	12.	12.
195.	34.	34.	35.	37.	40.	52.	63.	82.	76.	73.	71.	70.	69.	67.	13.	14.	15.	16.	16.	17.
200.	37.	38.	39.	41.	42.	49.	66.	80.	71.	67.	64.	63.	62.	61.	9.	10.	12.	23.	23.	24.
205.	39.	40.	41.	43.	44.	48.	71.	83.	72.	65.	61.	59.	58.	57.	8.	10.	13.	32.	32.	32.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX CUMULATIVE BUILD 1-HR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20	REC21	REC22
210.	37.	38.	39.	42.	43.	45.	73.	85.	75.	67.	61.	58.	56.	54.	11.	14.	18.	38.	38.	39.		
215.	30.	31.	32.	35.	36.	37.	70.	83.	78.	69.	62.	59.	56.	54.	14.	18.	23.	40.	40.	40.		
220.	21.	22.	23.	26.	28.	28.	63.	77.	77.	68.	62.	58.	56.	54.	18.	21.	26.	38.	38.	37.		
225.	14.	14.	15.	19.	19.	19.	55.	70.	72.	65.	60.	56.	54.	52.	19.	21.	27.	33.	33.	33.		
230.	9.	9.	10.	13.	13.	13.	48.	62.	67.	62.	57.	54.	52.	51.	18.	20.	25.	29.	29.	29.		
235.	6.	7.	7.	9.	10.	10.	42.	56.	62.	58.	53.	51.	49.	48.	16.	19.	22.	26.	26.	26.		
240.	5.	5.	4.	7.	7.	7.	37.	51.	58.	54.	50.	48.	46.	45.	15.	17.	20.	25.	24.	23.		
245.	4.	4.	3.	5.	6.	5.	33.	47.	54.	51.	47.	45.	44.	43.	14.	16.	18.	24.	22.	21.		
250.	3.	3.	2.	4.	5.	5.	28.	42.	53.	50.	46.	44.	42.	42.	13.	14.	17.	22.	19.	18.		
255.	4.	3.	2.	5.	6.	6.	24.	36.	51.	49.	45.	43.	42.	41.	12.	14.	15.	20.	17.	16.		
260.	3.	3.	1.	4.	5.	5.	22.	34.	51.	49.	46.	43.	42.	41.	11.	13.	15.	19.	16.	16.		
265.	3.	3.	0.	3.	4.	4.	20.	32.	51.	50.	46.	44.	43.	42.	11.	12.	14.	18.	16.	15.		
270.	2.	2.	0.	3.	4.	4.	18.	31.	51.	50.	48.	45.	44.	43.	11.	12.	14.	18.	16.	15.		
275.	2.	2.	0.	2.	3.	3.	17.	31.	49.	48.	46.	44.	43.	42.	11.	12.	13.	17.	15.	14.		
280.	2.	2.	0.	2.	3.	3.	17.	30.	48.	47.	45.	42.	41.	40.	10.	11.	12.	16.	15.	14.		
285.	2.	2.	2.	2.	3.	3.	16.	29.	47.	46.	45.	41.	40.	40.	10.	11.	13.	15.	14.	14.		
290.	1.	1.	2.	3.	4.	4.	16.	29.	48.	46.	45.	42.	40.	40.	10.	12.	13.	14.	14.	14.		
295.	2.	3.	3.	3.	4.	4.	16.	28.	48.	47.	46.	43.	41.	41.	11.	12.	14.	14.	14.	14.		
300.	2.	2.	4.	4.	5.	5.	16.	27.	48.	49.	48.	46.	43.	42.	12.	13.	15.	14.	14.	14.		
305.	1.	2.	4.	4.	4.	4.	16.	26.	48.	50.	50.	48.	46.	45.	12.	13.	16.	14.	14.	14.		
310.	1.	0.	4.	3.	4.	4.	16.	26.	47.	52.	51.	50.	48.	47.	12.	14.	16.	15.	14.	14.		
315.	1.	0.	4.	3.	3.	3.	16.	25.	46.	52.	53.	52.	51.	49.	13.	14.	17.	18.	14.	14.		
320.	2.	0.	2.	3.	3.	3.	16.	25.	45.	54.	56.	56.	54.	53.	14.	15.	18.	19.	14.	14.		
325.	2.	0.	3.	4.	3.	3.	17.	24.	44.	55.	58.	59.	57.	56.	14.	16.	18.	19.	14.	14.		
330.	2.	1.	3.	4.	4.	4.	17.	25.	44.	56.	61.	62.	61.	60.	15.	17.	19.	19.	15.	15.		
335.	3.	2.	3.	5.	4.	4.	18.	25.	43.	55.	63.	65.	65.	64.	17.	18.	21.	20.	17.	15.		
340.	3.	2.	4.	4.	5.	5.	19.	25.	43.	54.	63.	67.	68.	69.	19.	21.	24.	21.	20.	16.		
345.	4.	2.	4.	4.	6.	6.	19.	25.	42.	52.	63.	69.	72.	74.	24.	25.	28.	23.	22.	16.		
350.	3.	3.	4.	4.	5.	5.	22.	27.	41.	50.	60.	66.	70.	74.	33.	34.	35.	24.	23.	18.		
355.	4.	3.	5.	5.	6.	6.	24.	29.	40.	48.	55.	61.	65.	68.	46.	45.	45.	26.	24.	21.		
MAX	48.	47.	48.	58.	73.	80.	73.	85.	78.	76.	74.	73.	72.	74.	81.	82.	82.	67.	63.	56.		
DEGR.	35	35	160	165	170	180	210	210	190	190	190	190	345	345	15	15	15	30	30	30		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX CUMULATIVE BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
0.	62.	60.
5.	74.	46.
10.	80.	34.
15.	81.	25.
20.	74.	18.
25.	66.	13.
30.	57.	8.
35.	50.	5.
40.	44.	4.
45.	40.	3.
50.	38.	3.
55.	36.	2.
60.	34.	2.
65.	32.	1.
70.	32.	1.
75.	31.	0.
80.	32.	0.
85.	33.	0.
90.	34.	0.
95.	33.	0.
100.	32.	0.
105.	31.	0.
110.	31.	1.
115.	32.	1.
120.	34.	2.
125.	36.	2.
130.	38.	3.
135.	40.	3.
140.	43.	3.
145.	46.	4.
150.	50.	4.
155.	54.	5.
160.	60.	8.
165.	65.	13.
170.	66.	22.
175.	62.	37.
180.	52.	52.
185.	37.	62.
190.	22.	66.
195.	13.	65.
200.	8.	60.
205.	7.	56.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 NOX CUMULATIVE BUILD 1-HR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
210.	9.	53.
215.	12.	52.
220.	15.	52.
225.	16.	51.
230.	16.	50.
235.	15.	47.
240.	14.	44.
245.	12.	42.
250.	11.	41.
255.	11.	40.
260.	10.	40.
265.	10.	41.
270.	10.	42.
275.	10.	41.
280.	9.	40.
285.	10.	39.
290.	10.	39.
295.	10.	40.
300.	11.	42.
305.	11.	44.
310.	12.	46.
315.	12.	48.
320.	13.	52.
325.	13.	55.
330.	14.	59.
335.	16.	64.
340.	18.	70.
345.	24.	75.
350.	33.	75.
355.	47.	70.
MAX	81.	75.
DEGR.	15	350

THE HIGHEST CONCENTRATION OF 85. ug/m**3 OCCURRED AT RECEPTOR REC8 .

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 NOX BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 11:38:41

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	1596.0	3465.0	1596.0	4465.0	*	1000.	360.	AG	763.	0.3	0.0	55.7		
2. RTE 161 S FREE FLOW	*	1608.0	3465.0	1608.0	2465.0	*	1000.	180.	AG	1201.	0.3	0.0	79.7		
3. SITE DRIVE FRE FLOW	*	1600.0	3455.0	2100.0	3455.0	*	500.	90.	AG	2060.	0.3	0.0	79.7		
4. SITE DRIVE FRE FLOW	*	2100.0	3455.0	2453.6	3101.4	*	500.	135.	AG	2060.	0.3	0.0	43.7		
5. RT 161 NB RGT QUEUE	*	1632.0	3425.0	1632.0	-807.5	*	4232.	180.	AG	3.	100.0	0.0	12.0	2.04	215.0
6. RT 161 NB THR QUEUE	*	1614.0	3425.0	1614.0	3328.0	*	97.	180.	AG	6.	100.0	0.0	24.0	0.73	4.9
7. RT 161 SB LFT QUEUE	*	1596.0	3497.0	1596.0	3559.8	*	63.	360.	AG	3.	100.0	0.0	12.0	0.53	3.2
8. RT 161 SB THR QUEUE	*	1584.0	3497.0	1584.0	3551.5	*	55.	360.	AG	2.	100.0	0.0	12.0	0.30	2.8
9. SITE DR. LEFT QUEUE	*	1646.0	3461.0	1772.3	3461.0	*	126.	90.	AG	4.	100.0	0.0	24.0	0.72	6.4
10. SITE DR. RIGHT QUEUE	*	1646.0	3473.0	1702.3	3473.0	*	56.	90.	AG	2.	100.0	0.0	12.0	0.32	2.9

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 NOX BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 11:38:41

5. RT 161 NB RGT QUEUE *	90	65	2.0	761	1600	1.50	2	3
6. RT 161 NB THR QUEUE *	90	65	2.0	547	1600	1.50	2	3
7. RT 161 SB LFT QUEUE *	90	68	2.0	169	1600	1.50	2	3
8. RT 161 SB THR QUEUE *	90	43	2.0	232	1600	1.50	2	3
9. SITE DR. LEFT QUEUE *	90	50	2.0	924	1600	1.50	2	3
10. SITE DR. RIGHT QUEUE*	90	50	2.0	206	1600	1.50	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 9-1	1568.0	3305.0	6.0
2. RECEPTOR NO. 9-2	1568.0	3385.0	6.0
3. RECEPTOR NO. 9-3	1568.0	3465.0	6.0
4. RECEPTOR NO. 9-4	1568.0	3505.0	6.0
5. RECEPTOR NO. 9-5	1568.0	3545.0	6.0
6. RECEPTOR NO. 9-6	1568.0	3585.0	6.0
7. RECEPTOR NO. 9-7	1568.0	3625.0	6.0
8. RECEPTOR NO. 9-8	1568.0	3665.0	6.0
9. RECEPTOR NO. 9-9	1624.0	3665.0	6.0
10. RECEPTOR NO. 9-10	1624.0	3585.0	6.0
11. RECEPTOR NO. 9-11	1624.0	3545.0	6.0
12. RECEPTOR NO. 9-12	1624.0	3513.0	6.0
13. RECEPTOR NO. 9-13	1624.0	3495.0	6.0
14. RECEPTOR NO. 9-14	1658.0	3495.0	6.0
15. RECEPTOR NO. 9-15	1698.0	3495.0	6.0
16. RECEPTOR NO. 9-16	1738.0	3495.0	6.0
17. RECEPTOR NO. 9-17	1778.0	3495.0	6.0
18. RECEPTOR NO. 9-18	1778.0	3415.0	6.0
19. RECEPTOR NO. 9-19	1698.0	3415.0	6.0
20. RECEPTOR NO. 9-20	1648.0	3415.0	6.0
21. RECEPTOR NO. 9-21	1648.0	3385.0	6.0
22. RECEPTOR NO. 9-22	1648.0	3345.0	6.0
23. RECEPTOR NO. 9-23	1648.0	3305.0	6.0
24. RECEPTOR NO. 9-24	1648.0	3265.0	6.0
25. RECEPTOR NO. 9-25	1648.0	3150.0	6.0
26. RECEPTOR NO. 9-26	1900.0	3495.0	6.0
27. RECEPTOR NO. 9-27	2000.0	3495.0	6.0
28. RECEPTOR NO. 9-28	1568.0	3800.0	6.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 NOX BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	22.	21.	20.	17.	16.	16.	16.	16.	16.	16.	16.	16.	17.	5.	2.	1.	1.	26.	38.	43.
5.	29.	26.	25.	22.	19.	19.	19.	19.	11.	11.	11.	11.	11.	3.	1.	0.	0.	24.	35.	39.
10.	34.	28.	28.	24.	20.	20.	20.	20.	6.	6.	6.	6.	6.	1.	0.	0.	0.	22.	33.	37.
15.	38.	27.	29.	24.	18.	18.	18.	18.	3.	3.	3.	3.	4.	1.	0.	0.	0.	21.	32.	36.
20.	42.	27.	28.	24.	16.	16.	16.	16.	2.	2.	2.	2.	3.	1.	1.	1.	1.	21.	32.	36.
25.	46.	27.	26.	25.	14.	14.	14.	14.	1.	1.	1.	1.	2.	1.	1.	1.	1.	21.	32.	37.
30.	50.	29.	24.	26.	13.	13.	13.	13.	1.	1.	1.	1.	2.	2.	2.	2.	2.	22.	33.	37.
35.	52.	32.	21.	26.	12.	12.	12.	12.	1.	1.	1.	1.	3.	2.	2.	2.	2.	23.	34.	38.
40.	53.	37.	19.	26.	12.	11.	11.	11.	1.	1.	1.	1.	3.	2.	2.	2.	2.	25.	35.	39.
45.	51.	42.	17.	25.	12.	10.	10.	10.	1.	1.	1.	1.	3.	2.	2.	2.	2.	26.	36.	40.
50.	48.	48.	17.	25.	12.	10.	10.	10.	1.	1.	1.	1.	3.	2.	2.	2.	2.	28.	38.	41.
55.	44.	53.	17.	24.	13.	9.	9.	9.	1.	1.	1.	1.	3.	2.	2.	2.	2.	29.	38.	43.
60.	40.	57.	19.	23.	14.	9.	9.	9.	0.	0.	0.	0.	3.	3.	3.	3.	3.	31.	38.	44.
65.	37.	60.	22.	23.	16.	8.	8.	8.	0.	0.	0.	0.	3.	3.	3.	3.	3.	34.	39.	45.
70.	33.	60.	28.	22.	17.	8.	8.	8.	0.	0.	0.	1.	4.	4.	4.	4.	4.	37.	40.	46.
75.	29.	58.	37.	24.	19.	8.	8.	8.	0.	0.	0.	1.	6.	6.	6.	6.	6.	40.	42.	47.
80.	26.	55.	49.	27.	21.	8.	8.	8.	0.	0.	0.	3.	12.	12.	11.	11.	10.	40.	42.	46.
85.	24.	50.	61.	34.	23.	9.	9.	9.	0.	0.	2.	7.	22.	21.	19.	19.	18.	37.	39.	42.
90.	23.	45.	69.	45.	28.	11.	10.	9.	0.	2.	5.	14.	36.	33.	31.	29.	28.	31.	33.	34.
95.	22.	40.	69.	56.	34.	14.	11.	9.	0.	4.	10.	24.	49.	45.	41.	38.	36.	24.	24.	25.
100.	20.	37.	63.	64.	41.	18.	13.	10.	2.	8.	17.	34.	59.	54.	48.	44.	43.	18.	17.	18.
105.	18.	34.	55.	67.	48.	24.	17.	13.	4.	14.	24.	42.	65.	59.	52.	47.	46.	14.	13.	12.
110.	17.	33.	45.	63.	53.	29.	22.	18.	8.	19.	28.	46.	64.	59.	52.	46.	45.	11.	9.	9.
115.	17.	32.	39.	56.	55.	32.	26.	22.	13.	21.	29.	46.	61.	58.	50.	43.	42.	8.	6.	6.
120.	17.	32.	35.	48.	54.	34.	27.	24.	16.	22.	29.	45.	56.	54.	47.	39.	38.	5.	4.	5.
125.	18.	32.	35.	42.	52.	34.	27.	24.	16.	20.	29.	42.	50.	52.	44.	36.	33.	4.	3.	4.
130.	19.	32.	35.	39.	50.	36.	27.	24.	14.	20.	28.	40.	46.	49.	42.	34.	29.	3.	2.	4.
135.	20.	31.	36.	37.	49.	37.	28.	24.	13.	20.	28.	38.	41.	46.	39.	34.	26.	2.	2.	4.
140.	21.	30.	38.	37.	47.	38.	29.	26.	13.	20.	28.	36.	37.	44.	38.	34.	25.	2.	2.	3.
145.	23.	30.	40.	38.	47.	40.	31.	27.	13.	20.	28.	34.	34.	43.	37.	34.	23.	2.	2.	3.
150.	24.	29.	40.	40.	48.	43.	33.	29.	14.	21.	28.	32.	33.	42.	36.	34.	22.	2.	2.	3.
155.	27.	29.	41.	42.	49.	47.	37.	32.	15.	23.	28.	31.	33.	41.	35.	33.	21.	1.	1.	3.
160.	30.	31.	41.	44.	50.	51.	42.	36.	17.	24.	29.	33.	37.	41.	35.	33.	21.	1.	1.	4.
165.	34.	34.	42.	46.	51.	54.	48.	43.	22.	28.	33.	39.	45.	42.	36.	33.	21.	0.	1.	6.
170.	36.	36.	41.	44.	49.	53.	50.	46.	29.	37.	43.	51.	58.	47.	39.	34.	22.	1.	2.	14.
175.	34.	35.	38.	40.	43.	46.	46.	44.	39.	47.	54.	64.	72.	57.	45.	38.	26.	2.	6.	26.
180.	28.	28.	30.	30.	32.	35.	36.	35.	46.	54.	61.	72.	82.	69.	53.	43.	31.	5.	12.	40.
185.	17.	18.	18.	19.	20.	21.	22.	21.	45.	52.	59.	70.	80.	76.	58.	46.	35.	8.	18.	49.
190.	9.	9.	9.	9.	10.	10.	11.	11.	38.	44.	49.	60.	69.	78.	61.	48.	38.	11.	21.	52.
195.	4.	4.	4.	4.	4.	4.	4.	4.	29.	36.	38.	47.	56.	74.	62.	49.	41.	12.	21.	52.
200.	2.	2.	2.	2.	2.	2.	2.	2.	22.	31.	29.	36.	45.	68.	62.	49.	43.	13.	20.	50.
205.	2.	2.	2.	1.	1.	1.	1.	1.	18.	28.	24.	28.	37.	61.	64.	50.	44.	13.	20.	50.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 NOX BUILD 1-HR FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28													
210. *	2.	2.	2.	1.	1.	1.	1.	1.	14.	25.	22.	23.	31.	53.	65.	51.	46.	13.	20.	49.
215. *	1.	1.	1.	1.	1.	1.	1.	1.	13.	23.	22.	20.	27.	46.	65.	53.	48.	13.	21.	48.
220. *	1.	1.	1.	1.	1.	1.	1.	1.	11.	21.	22.	18.	24.	39.	64.	56.	50.	12.	22.	46.
225. *	1.	1.	1.	1.	1.	1.	1.	1.	10.	18.	22.	16.	23.	35.	61.	58.	53.	13.	23.	45.
230. *	1.	1.	1.	0.	1.	1.	1.	1.	10.	16.	22.	15.	21.	31.	57.	59.	56.	12.	25.	42.
235. *	1.	1.	1.	1.	1.	1.	1.	1.	9.	13.	21.	15.	20.	28.	52.	59.	58.	13.	26.	42.
240. *	1.	1.	1.	0.	0.	0.	0.	0.	9.	11.	20.	15.	18.	25.	47.	58.	58.	14.	26.	41.
245. *	1.	1.	1.	0.	0.	0.	0.	0.	8.	10.	20.	16.	17.	23.	41.	55.	58.	16.	26.	40.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	8.	9.	19.	17.	17.	22.	36.	50.	56.	17.	26.	40.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	8.	8.	19.	18.	16.	21.	31.	44.	51.	19.	26.	40.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	8.	8.	19.	18.	16.	20.	27.	37.	44.	22.	27.	40.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	9.	9.	20.	19.	17.	20.	24.	31.	36.	26.	29.	42.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	9.	9.	19.	20.	18.	19.	21.	25.	28.	31.	32.	44.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	9.	9.	18.	20.	17.	17.	17.	19.	20.	36.	33.	44.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	8.	8.	17.	20.	18.	16.	15.	14.	14.	40.	33.	43.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	8.	8.	16.	20.	18.	15.	14.	12.	11.	44.	32.	41.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	8.	8.	14.	20.	18.	16.	13.	10.	8.	47.	33.	39.
295. *	1.	1.	0.	0.	0.	0.	0.	0.	8.	8.	13.	20.	19.	16.	12.	9.	7.	50.	34.	37.
300. *	1.	1.	0.	0.	0.	0.	0.	0.	9.	9.	12.	20.	20.	16.	10.	8.	6.	50.	36.	36.
305. *	1.	1.	1.	1.	1.	1.	1.	1.	9.	9.	12.	20.	21.	15.	9.	7.	6.	49.	39.	35.
310. *	1.	1.	1.	1.	1.	1.	1.	1.	10.	10.	11.	21.	22.	14.	8.	7.	6.	47.	42.	35.
315. *	1.	1.	1.	1.	1.	1.	1.	1.	10.	10.	11.	20.	22.	13.	8.	7.	6.	43.	43.	37.
320. *	1.	1.	1.	1.	1.	1.	1.	1.	11.	11.	12.	20.	22.	12.	8.	6.	6.	41.	45.	38.
325. *	1.	1.	1.	1.	1.	1.	1.	1.	12.	12.	12.	19.	22.	11.	8.	6.	6.	38.	45.	40.
330. *	1.	1.	1.	1.	1.	1.	1.	1.	13.	13.	13.	18.	22.	10.	8.	6.	6.	36.	44.	42.
335. *	2.	2.	1.	1.	1.	1.	1.	1.	14.	14.	14.	18.	21.	10.	8.	6.	6.	35.	43.	44.
340. *	2.	2.	2.	2.	2.	2.	2.	2.	16.	16.	16.	18.	21.	10.	8.	6.	5.	34.	42.	44.
345. *	4.	4.	4.	3.	3.	3.	3.	3.	18.	18.	18.	20.	21.	10.	7.	5.	4.	32.	42.	45.
350. *	8.	8.	7.	6.	6.	6.	6.	6.	20.	20.	20.	20.	22.	10.	6.	4.	3.	30.	41.	45.
355. *	14.	14.	13.	12.	11.	11.	11.	11.	19.	19.	19.	20.	20.	8.	4.	2.	1.	28.	40.	44.
MAX *	53.	60.	69.	67.	55.	54.	50.	46.	46.	54.	61.	72.	82.	78.	65.	59.	58.	50.	45.	52.
DEGR. *	40	70	95	105	115	165	170	170	180	180	180	180	180	190	215	235	240	300	320	190

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 NOX BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
0.	38.	38.	39.	41.	41.	0.	0.	15.
5.	33.	30.	31.	31.	30.	0.	0.	18.
10.	30.	26.	24.	23.	21.	0.	0.	19.
15.	29.	24.	21.	19.	15.	0.	0.	18.
20.	28.	23.	19.	16.	12.	1.	1.	16.
25.	29.	23.	18.	15.	10.	1.	1.	14.
30.	30.	22.	17.	14.	10.	2.	2.	13.
35.	30.	22.	16.	13.	9.	2.	2.	12.
40.	30.	20.	15.	13.	9.	2.	2.	11.
45.	30.	20.	15.	12.	9.	2.	2.	10.
50.	30.	19.	15.	12.	9.	2.	2.	10.
55.	29.	18.	14.	12.	8.	2.	2.	9.
60.	29.	18.	14.	12.	7.	3.	2.	9.
65.	28.	18.	14.	11.	6.	3.	3.	8.
70.	27.	17.	12.	9.	5.	4.	3.	8.
75.	25.	15.	10.	7.	5.	5.	4.	8.
80.	22.	12.	8.	6.	4.	8.	6.	8.
85.	17.	9.	6.	5.	4.	14.	9.	9.
90.	13.	7.	6.	5.	3.	22.	14.	9.
95.	9.	6.	5.	5.	2.	29.	19.	9.
100.	7.	6.	4.	4.	1.	36.	23.	8.
105.	6.	4.	3.	2.	1.	41.	28.	9.
110.	4.	3.	2.	1.	1.	44.	34.	10.
115.	3.	2.	1.	1.	1.	45.	41.	12.
120.	2.	1.	1.	1.	1.	43.	47.	16.
125.	1.	1.	1.	1.	1.	39.	50.	20.
130.	1.	1.	1.	1.	1.	34.	47.	21.
135.	1.	1.	1.	1.	1.	29.	40.	20.
140.	1.	1.	1.	1.	1.	26.	33.	20.
145.	1.	1.	1.	1.	1.	24.	26.	20.
150.	2.	2.	2.	2.	2.	22.	23.	22.
155.	2.	2.	2.	2.	2.	21.	21.	25.
160.	3.	3.	3.	3.	3.	21.	21.	28.
165.	6.	6.	6.	6.	6.	20.	20.	34.
170.	14.	14.	14.	14.	13.	21.	21.	38.
175.	26.	26.	26.	26.	25.	22.	22.	38.
180.	39.	39.	38.	38.	37.	25.	24.	32.
185.	47.	46.	46.	46.	44.	26.	24.	20.
190.	48.	47.	47.	46.	46.	26.	24.	10.
195.	46.	43.	43.	43.	43.	27.	25.	4.
200.	43.	38.	38.	38.	38.	28.	26.	2.
205.	42.	34.	34.	34.	34.	29.	27.	1.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 NOX BUILD 1-HR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
210.	42.	31.	31.	31.	31.	30.	28.	1.
215.	42.	29.	29.	29.	29.	31.	30.	1.
220.	42.	28.	27.	27.	27.	32.	31.	1.
225.	42.	28.	26.	26.	26.	33.	32.	1.
230.	41.	28.	24.	24.	24.	35.	33.	1.
235.	40.	28.	23.	23.	23.	38.	35.	1.
240.	39.	29.	22.	22.	22.	41.	38.	0.
245.	38.	31.	22.	22.	22.	46.	42.	0.
250.	38.	32.	21.	21.	21.	49.	46.	0.
255.	37.	34.	21.	21.	21.	52.	50.	0.
260.	37.	35.	21.	21.	21.	50.	50.	0.
265.	37.	37.	21.	21.	21.	44.	45.	0.
270.	38.	38.	22.	22.	22.	34.	36.	0.
275.	37.	37.	22.	21.	21.	23.	24.	0.
280.	37.	37.	22.	21.	21.	14.	15.	0.
285.	37.	37.	22.	21.	21.	9.	9.	0.
290.	38.	38.	24.	21.	21.	7.	6.	0.
295.	39.	38.	26.	22.	22.	6.	5.	0.
300.	41.	39.	28.	22.	22.	5.	5.	0.
305.	42.	40.	31.	24.	23.	5.	4.	1.
310.	43.	41.	34.	25.	24.	5.	4.	1.
315.	44.	44.	39.	27.	26.	5.	4.	1.
320.	44.	47.	43.	31.	27.	5.	4.	1.
325.	45.	50.	48.	35.	29.	5.	4.	1.
330.	46.	52.	52.	41.	32.	4.	4.	1.
335.	46.	54.	55.	47.	36.	4.	3.	1.
340.	46.	54.	58.	53.	41.	3.	2.	2.
345.	46.	53.	58.	57.	48.	2.	1.	3.
350.	44.	50.	55.	56.	51.	1.	0.	6.
355.	42.	44.	48.	51.	50.	0.	0.	10.
MAX	48.	54.	58.	57.	51.	52.	50.	38.
DEGR.	190	340	340	345	350	255	125	175

THE HIGHEST CONCENTRATION OF 82. ug/m**3 OCCURRED AT RECEPTOR REC13.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 NOX CUMULATIVE BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 11:38:58

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	1596.0	3465.0	1596.0	4465.0	*	1000.	360.	AG	1019.	0.3	0.0	55.7		
2. RTE 161 S FREE FLOW	*	1608.0	3465.0	1608.0	2465.0	*	1000.	180.	AG	1398.	0.3	0.0	79.7		
3. SITE DRIVE FRE FLOW	*	1600.0	3455.0	2100.0	3455.0	*	500.	90.	AG	2060.	0.3	0.0	79.7		
4. SITE DRIVE FRE FLOW	*	2100.0	3455.0	2453.6	3101.4	*	500.	135.	AG	2060.	0.3	0.0	43.7		
5. RT 161 NB RGT QUEUE	*	1632.0	3425.0	1632.0	-838.6	*	4264.	180.	AG	3.	100.0	0.0	12.0	2.05	216.6
6. RT 161 NB THR QUEUE	*	1614.0	3425.0	1614.0	2848.4	*	577.	180.	AG	6.	100.0	0.0	24.0	1.10	29.3
7. RT 161 SB LFT QUEUE	*	1596.0	3497.0	1596.0	3558.7	*	62.	360.	AG	3.	100.0	0.0	12.0	0.52	3.1
8. RT 161 SB THR QUEUE	*	1584.0	3497.0	1584.0	3607.0	*	110.	360.	AG	2.	100.0	0.0	12.0	0.61	5.6
9. SITE DR. LEFT QUEUE	*	1646.0	3461.0	1772.9	3461.0	*	127.	90.	AG	4.	100.0	0.0	24.0	0.73	6.4
10. SITE DR. RIGHT QUEUE	*	1646.0	3473.0	1701.0	3473.0	*	55.	90.	AG	2.	100.0	0.0	12.0	0.31	2.8

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 NOX CUMULATIVE BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 11:38:58

5. RT 161 NB RGT QUEUE *	90	65	2.0	764	1600	1.50	2	3
6. RT 161 NB THR QUEUE *	90	65	2.0	818	1600	1.50	2	3
7. RT 161 SB LFT QUEUE *	90	68	2.0	166	1600	1.50	2	3
8. RT 161 SB THR QUEUE *	90	43	2.0	468	1600	1.50	2	3
9. SITE DR. LEFT QUEUE *	90	50	2.0	929	1600	1.50	2	3
10. SITE DR. RIGHT QUEUE*	90	50	2.0	201	1600	1.50	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 9-1	1568.0	3305.0	6.0
2. RECEPTOR NO. 9-2	1568.0	3385.0	6.0
3. RECEPTOR NO. 9-3	1568.0	3465.0	6.0
4. RECEPTOR NO. 9-4	1568.0	3505.0	6.0
5. RECEPTOR NO. 9-5	1568.0	3545.0	6.0
6. RECEPTOR NO. 9-6	1568.0	3585.0	6.0
7. RECEPTOR NO. 9-7	1568.0	3625.0	6.0
8. RECEPTOR NO. 9-8	1568.0	3665.0	6.0
9. RECEPTOR NO. 9-9	1624.0	3665.0	6.0
10. RECEPTOR NO. 9-10	1624.0	3585.0	6.0
11. RECEPTOR NO. 9-11	1624.0	3545.0	6.0
12. RECEPTOR NO. 9-12	1624.0	3513.0	6.0
13. RECEPTOR NO. 9-13	1624.0	3495.0	6.0
14. RECEPTOR NO. 9-14	1658.0	3495.0	6.0
15. RECEPTOR NO. 9-15	1698.0	3495.0	6.0
16. RECEPTOR NO. 9-16	1738.0	3495.0	6.0
17. RECEPTOR NO. 9-17	1778.0	3495.0	6.0
18. RECEPTOR NO. 9-18	1778.0	3415.0	6.0
19. RECEPTOR NO. 9-19	1698.0	3415.0	6.0
20. RECEPTOR NO. 9-20	1648.0	3415.0	6.0
21. RECEPTOR NO. 9-21	1648.0	3385.0	6.0
22. RECEPTOR NO. 9-22	1648.0	3345.0	6.0
23. RECEPTOR NO. 9-23	1648.0	3305.0	6.0
24. RECEPTOR NO. 9-24	1648.0	3265.0	6.0
25. RECEPTOR NO. 9-25	1648.0	3150.0	6.0
26. RECEPTOR NO. 9-26	1900.0	3495.0	6.0
27. RECEPTOR NO. 9-27	2000.0	3495.0	6.0
28. RECEPTOR NO. 9-28	1568.0	3800.0	6.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 NOX CUMULATIVE BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	27.	27.	27.	25.	23.	21.	21.	21.	21.	21.	22.	22.	22.	7.	3.	2.	1.	27.	39.	46.
5.	34.	32.	34.	31.	29.	26.	26.	25.	14.	15.	15.	15.	15.	4.	1.	0.	0.	24.	35.	41.
10.	39.	34.	37.	34.	31.	27.	26.	26.	8.	8.	8.	8.	9.	1.	0.	0.	0.	22.	33.	38.
15.	42.	33.	37.	34.	30.	25.	24.	24.	4.	4.	4.	4.	5.	1.	0.	0.	0.	21.	32.	36.
20.	46.	31.	34.	33.	28.	23.	21.	21.	2.	2.	2.	2.	3.	1.	1.	1.	1.	21.	32.	36.
25.	50.	31.	31.	32.	26.	21.	19.	19.	2.	2.	2.	2.	3.	1.	1.	1.	1.	21.	32.	37.
30.	53.	32.	28.	31.	25.	20.	17.	17.	1.	1.	1.	1.	3.	2.	2.	2.	2.	22.	33.	37.
35.	55.	35.	25.	31.	24.	20.	16.	16.	1.	1.	1.	1.	3.	2.	2.	2.	2.	23.	34.	38.
40.	56.	39.	23.	30.	23.	20.	15.	15.	1.	1.	1.	1.	3.	2.	2.	2.	2.	25.	35.	39.
45.	55.	45.	21.	29.	22.	19.	14.	14.	1.	1.	1.	1.	4.	2.	2.	2.	2.	26.	36.	40.
50.	53.	50.	20.	28.	21.	19.	13.	13.	1.	1.	1.	1.	3.	2.	2.	2.	2.	28.	38.	41.
55.	50.	55.	20.	27.	21.	19.	13.	13.	1.	1.	1.	1.	3.	2.	2.	2.	2.	29.	38.	43.
60.	48.	59.	22.	26.	21.	18.	12.	12.	1.	1.	1.	1.	3.	3.	3.	3.	3.	31.	38.	44.
65.	47.	62.	25.	25.	22.	18.	11.	11.	0.	0.	0.	1.	4.	3.	3.	3.	3.	34.	39.	45.
70.	45.	62.	31.	25.	22.	17.	11.	11.	0.	0.	0.	1.	4.	4.	4.	4.	4.	37.	40.	46.
75.	43.	60.	40.	26.	23.	17.	11.	11.	0.	0.	0.	1.	7.	6.	6.	6.	6.	40.	42.	47.
80.	40.	57.	51.	30.	25.	17.	11.	11.	0.	0.	0.	3.	12.	12.	11.	11.	10.	40.	42.	46.
85.	39.	52.	63.	37.	27.	18.	12.	12.	0.	0.	2.	7.	22.	21.	19.	19.	18.	37.	39.	42.
90.	39.	47.	71.	48.	31.	20.	13.	12.	0.	2.	5.	14.	36.	33.	31.	29.	28.	31.	33.	34.
95.	38.	42.	72.	59.	37.	22.	14.	12.	0.	4.	10.	24.	49.	45.	41.	38.	36.	24.	24.	25.
100.	36.	39.	66.	66.	44.	27.	16.	13.	2.	8.	17.	34.	59.	53.	48.	44.	43.	18.	17.	18.
105.	34.	37.	57.	70.	51.	33.	20.	16.	4.	14.	24.	42.	65.	58.	52.	47.	46.	14.	13.	12.
110.	33.	35.	47.	66.	56.	38.	25.	20.	8.	19.	28.	46.	64.	59.	52.	46.	45.	11.	9.	9.
115.	33.	34.	41.	60.	58.	41.	29.	25.	13.	22.	30.	47.	61.	58.	50.	43.	42.	8.	6.	6.
120.	33.	34.	38.	52.	57.	43.	31.	27.	16.	22.	30.	45.	56.	54.	47.	39.	38.	5.	4.	5.
125.	35.	35.	37.	46.	55.	44.	31.	28.	16.	21.	29.	42.	50.	51.	44.	36.	33.	4.	3.	4.
130.	36.	36.	38.	42.	54.	45.	32.	27.	14.	20.	28.	40.	46.	49.	42.	35.	29.	3.	2.	4.
135.	38.	38.	39.	41.	53.	47.	34.	27.	13.	20.	29.	38.	41.	46.	39.	34.	26.	2.	2.	4.
140.	40.	40.	41.	41.	51.	48.	37.	30.	13.	20.	28.	36.	37.	44.	38.	34.	25.	2.	2.	4.
145.	43.	43.	44.	43.	52.	50.	40.	31.	14.	21.	29.	34.	35.	43.	36.	34.	23.	2.	2.	3.
150.	46.	46.	46.	46.	53.	54.	44.	34.	14.	22.	29.	32.	34.	42.	35.	34.	22.	2.	2.	3.
155.	50.	50.	50.	50.	56.	58.	50.	39.	16.	23.	29.	32.	34.	41.	35.	33.	21.	1.	1.	4.
160.	54.	54.	54.	55.	60.	63.	57.	46.	18.	26.	30.	35.	40.	41.	34.	33.	21.	1.	1.	5.
165.	58.	59.	60.	61.	65.	68.	66.	56.	24.	32.	37.	44.	50.	43.	35.	33.	21.	0.	1.	8.
170.	58.	60.	61.	62.	66.	69.	69.	63.	35.	44.	51.	60.	68.	50.	39.	34.	22.	1.	3.	19.
175.	52.	54.	56.	57.	60.	63.	64.	61.	49.	59.	68.	79.	88.	64.	46.	38.	26.	2.	8.	37.
180.	40.	42.	43.	44.	45.	48.	50.	49.	59.	69.	78.	91.	102.	81.	57.	45.	32.	5.	17.	58.
185.	24.	25.	26.	27.	27.	29.	30.	30.	59.	67.	75.	89.	99.	92.	67.	51.	37.	10.	26.	73.
190.	12.	12.	13.	13.	13.	14.	15.	15.	50.	57.	62.	74.	85.	95.	73.	56.	43.	14.	33.	77.
195.	5.	5.	6.	5.	5.	6.	6.	6.	39.	45.	47.	57.	67.	89.	76.	59.	48.	18.	36.	75.
200.	3.	3.	3.	2.	3.	3.	3.	3.	31.	37.	35.	42.	51.	77.	75.	60.	52.	21.	36.	68.
205.	2.	2.	2.	1.	2.	2.	2.	2.	25.	33.	29.	33.	41.	67.	74.	60.	54.	22.	35.	62.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 NOX CUMULATIVE BUILD 1-HR FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28													
210. *	2.	2.	2.	1.	1.	1.	1.	1.	21.	30.	26.	27.	35.	57.	72.	60.	55.	22.	34.	57.
215. *	2.	2.	2.	1.	1.	1.	1.	1.	19.	28.	26.	23.	31.	48.	70.	60.	56.	22.	32.	53.
220. *	2.	2.	2.	1.	1.	1.	1.	1.	16.	26.	26.	21.	28.	41.	67.	60.	57.	22.	31.	50.
225. *	2.	2.	2.	1.	1.	1.	1.	1.	15.	23.	25.	19.	26.	36.	63.	61.	58.	21.	30.	48.
230. *	1.	1.	1.	1.	1.	1.	1.	1.	14.	21.	25.	18.	24.	33.	59.	61.	60.	20.	29.	45.
235. *	1.	1.	1.	1.	1.	1.	1.	1.	13.	19.	24.	18.	23.	29.	54.	61.	60.	20.	29.	44.
240. *	1.	1.	1.	1.	1.	1.	1.	1.	12.	17.	23.	18.	21.	27.	48.	59.	60.	19.	28.	43.
245. *	1.	1.	1.	0.	0.	0.	0.	0.	11.	16.	22.	19.	20.	25.	42.	56.	59.	20.	28.	42.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	11.	15.	22.	20.	19.	24.	37.	51.	56.	20.	27.	42.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	11.	15.	22.	20.	19.	23.	32.	45.	52.	21.	27.	42.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	11.	15.	22.	21.	19.	22.	28.	38.	45.	23.	29.	42.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	12.	16.	23.	22.	20.	22.	25.	32.	37.	27.	31.	44.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	12.	16.	23.	23.	21.	21.	22.	26.	29.	32.	33.	47.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	12.	15.	22.	23.	20.	19.	19.	20.	21.	37.	34.	46.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	11.	15.	22.	22.	20.	18.	16.	16.	16.	40.	34.	45.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	11.	14.	21.	22.	21.	17.	15.	14.	12.	45.	34.	43.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	11.	14.	20.	22.	21.	18.	15.	12.	10.	48.	34.	41.
295. *	1.	1.	0.	0.	0.	0.	0.	0.	11.	14.	19.	23.	22.	18.	14.	11.	9.	51.	35.	40.
300. *	1.	1.	1.	1.	1.	1.	1.	1.	12.	14.	19.	24.	23.	18.	13.	10.	8.	52.	37.	38.
305. *	1.	1.	1.	1.	1.	1.	1.	1.	13.	14.	19.	24.	25.	18.	12.	9.	8.	51.	40.	38.
310. *	1.	1.	1.	1.	1.	1.	1.	1.	13.	14.	19.	25.	26.	17.	11.	9.	7.	49.	44.	38.
315. *	2.	2.	1.	1.	1.	1.	1.	1.	14.	14.	18.	26.	26.	17.	11.	8.	7.	45.	46.	40.
320. *	2.	2.	1.	1.	1.	1.	1.	1.	15.	15.	19.	26.	28.	16.	10.	8.	7.	42.	48.	42.
325. *	2.	2.	1.	1.	1.	1.	1.	1.	16.	16.	19.	26.	28.	15.	10.	8.	7.	40.	48.	44.
330. *	2.	2.	1.	1.	1.	1.	1.	1.	17.	17.	19.	25.	28.	14.	10.	8.	7.	38.	47.	46.
335. *	2.	2.	2.	2.	2.	2.	2.	2.	19.	19.	20.	25.	29.	14.	10.	8.	7.	37.	45.	49.
340. *	3.	3.	3.	3.	2.	2.	2.	2.	21.	21.	22.	26.	29.	14.	10.	8.	6.	36.	44.	50.
345. *	5.	5.	5.	5.	4.	4.	4.	4.	24.	24.	25.	27.	29.	14.	9.	7.	5.	34.	44.	51.
350. *	10.	10.	10.	9.	9.	8.	8.	8.	26.	26.	27.	28.	29.	13.	8.	5.	4.	31.	43.	50.
355. *	18.	18.	18.	17.	15.	15.	14.	14.	25.	26.	26.	26.	27.	11.	6.	3.	2.	29.	41.	49.
MAX *	58.	62.	72.	70.	66.	69.	69.	63.	59.	69.	78.	91.	102.	95.	76.	61.	60.	52.	48.	77.
DEGR. *	170	70	95	105	170	170	170	170	180	180	180	180	180	190	195	225	235	300	325	190

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 NOX CUMULATIVE BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
0.	41.	42.	43.	46.	51.	0.	0.	20.
5.	35.	33.	33.	34.	35.	0.	0.	24.
10.	31.	27.	25.	24.	23.	0.	0.	26.
15.	29.	24.	22.	19.	16.	0.	0.	24.
20.	29.	23.	20.	17.	12.	1.	1.	21.
25.	29.	23.	18.	15.	11.	1.	1.	19.
30.	30.	23.	17.	14.	10.	2.	2.	17.
35.	30.	22.	16.	13.	9.	2.	2.	16.
40.	30.	21.	15.	13.	9.	2.	2.	15.
45.	30.	21.	15.	12.	9.	2.	2.	14.
50.	30.	20.	15.	12.	9.	2.	2.	13.
55.	30.	19.	14.	12.	8.	2.	2.	13.
60.	29.	18.	14.	12.	7.	3.	2.	12.
65.	28.	18.	14.	11.	6.	3.	3.	11.
70.	27.	17.	12.	9.	5.	4.	3.	11.
75.	25.	15.	10.	7.	5.	5.	4.	11.
80.	22.	12.	8.	6.	4.	8.	6.	11.
85.	17.	9.	6.	5.	4.	14.	9.	12.
90.	13.	7.	6.	5.	3.	22.	14.	12.
95.	9.	6.	5.	5.	2.	29.	19.	12.
100.	7.	6.	4.	4.	1.	36.	23.	11.
105.	6.	4.	3.	2.	1.	41.	28.	11.
110.	4.	3.	2.	1.	1.	44.	34.	12.
115.	3.	2.	1.	1.	1.	45.	41.	15.
120.	2.	1.	1.	1.	1.	43.	47.	19.
125.	1.	1.	1.	1.	1.	39.	50.	23.
130.	1.	1.	1.	1.	1.	34.	47.	24.
135.	2.	2.	2.	2.	2.	29.	40.	24.
140.	2.	2.	2.	2.	2.	26.	33.	23.
145.	2.	2.	2.	2.	2.	24.	26.	24.
150.	2.	2.	2.	2.	2.	22.	23.	26.
155.	2.	2.	2.	2.	2.	21.	21.	30.
160.	4.	4.	4.	4.	4.	21.	21.	35.
165.	8.	8.	8.	8.	7.	20.	20.	43.
170.	18.	18.	18.	18.	16.	21.	21.	50.
175.	36.	36.	35.	34.	32.	22.	22.	52.
180.	57.	56.	55.	54.	50.	25.	24.	43.
185.	72.	71.	70.	69.	64.	26.	24.	28.
190.	77.	76.	75.	74.	70.	27.	24.	14.
195.	74.	74.	73.	73.	70.	29.	25.	6.
200.	67.	67.	67.	66.	65.	31.	27.	3.
205.	61.	61.	61.	61.	60.	34.	29.	2.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 NOX CUMULATIVE BUILD 1-HR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
210.	56.	56.	56.	56.	56.	36.	31.	1.
215.	52.	52.	52.	52.	52.	37.	34.	1.
220.	49.	49.	49.	49.	49.	38.	36.	1.
225.	47.	47.	47.	47.	47.	39.	37.	1.
230.	44.	44.	44.	44.	44.	40.	38.	1.
235.	42.	42.	42.	42.	42.	42.	40.	1.
240.	41.	41.	41.	41.	41.	45.	42.	1.
245.	40.	40.	40.	40.	40.	48.	45.	0.
250.	40.	40.	40.	40.	40.	50.	48.	0.
255.	39.	39.	39.	39.	39.	53.	51.	0.
260.	39.	39.	39.	39.	39.	51.	50.	0.
265.	39.	39.	39.	39.	39.	44.	46.	0.
270.	40.	40.	40.	40.	40.	35.	36.	0.
275.	39.	39.	39.	39.	39.	24.	25.	0.
280.	39.	39.	39.	39.	39.	16.	16.	0.
285.	39.	39.	39.	39.	39.	11.	10.	0.
290.	40.	40.	40.	40.	40.	8.	7.	0.
295.	41.	40.	40.	40.	40.	7.	6.	0.
300.	43.	41.	41.	41.	41.	6.	5.	1.
305.	44.	42.	42.	42.	42.	6.	5.	1.
310.	45.	44.	44.	44.	44.	6.	5.	1.
315.	46.	47.	46.	46.	46.	6.	5.	1.
320.	48.	50.	49.	49.	49.	6.	5.	1.
325.	49.	53.	52.	52.	52.	6.	5.	1.
330.	50.	56.	56.	56.	56.	5.	4.	1.
335.	51.	58.	60.	60.	61.	5.	4.	2.
340.	52.	59.	63.	64.	66.	4.	2.	2.
345.	52.	59.	64.	66.	71.	2.	1.	4.
350.	50.	56.	60.	64.	71.	1.	0.	8.
355.	46.	49.	53.	57.	64.	0.	0.	14.
MAX	77.	76.	75.	74.	71.	53.	51.	52.
DEGR.	190	190	190	190	345	255	255	175

THE HIGHEST CONCENTRATION OF 102. ug/m**3 OCCURRED AT RECEPTOR REC13.

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION N02 FRIDAY PM

DATE : 8/17/10
TIME : 14:53:54

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	******** *	224.	148.	AG	125.	.8	.0	30.0		
2. Route 173 EB 2	********	********	********	******** *	190.	127.	AG	125.	.8	.0	30.0		
3. Route 173 EB 3	********	********	********	******** *	228.	108.	AG	125.	.8	.0	30.0		
4. Route 173 EB 4	********	********	********	******** *	80.	101.	AG	125.	.8	.0	30.0		
5. Route 173 EB 5	********	********	********	******** *	80.	98.	AG	59.	.8	.0	30.0		
6. Route 173 EB 6	********	********	********	******** *	151.	86.	AG	59.	.8	.0	30.0		
7. Route 173 EB 7	********	********	********	******** *	356.	60.	AG	59.	.8	.0	30.0		
8. Route 173 EB 8	********	********	********	******** *	177.	63.	AG	59.	.8	.0	30.0		
9. Route 173 EB 9	********	********	********	******** *	174.	79.	AG	59.	.8	.0	30.0		
10. Route 173 EB 10	********	********	********	******** *	276.	88.	AG	59.	.8	.0	30.0		
11. Route 173 WB 1	********	********	********	******** *	276.	268.	AG	45.	.8	.0	30.0		
12. Route 173 WB 2	********	********	********	******** *	174.	258.	AG	45.	.8	.0	30.0		
13. Route 173 WB 3	********	********	********	******** *	531.	240.	AG	45.	.8	.0	30.0		
14. Route 173 WB 4	********	********	********	******** *	151.	265.	AG	45.	.8	.0	30.0		
15. Route 173 WB 5	********	********	********	******** *	80.	281.	AG	45.	.8	.0	30.0		
16. Route 173 WB 6	********	********	********	******** *	149.	284.	AG	51.	.8	.0	30.0		
17. Route 173 WB 7	********	********	********	******** *	154.	290.	AG	51.	.8	.0	30.0		
18. Route 173 WB 8	********	********	********	******** *	177.	309.	AG	51.	.8	.0	30.0		
19. Route 173 WB 8	********	********	********	******** *	212.	326.	AG	51.	.8	.0	30.0		
20. Country Road NB 1A	********	********	********	******** *	273.	4.	AG	1.	.8	.0	20.0		
21. Country Road NB 1B	********	********	********	******** *	185.	6.	AG	1.	.8	.0	20.0		
22. Country Road NB 1C	********	********	********	******** *	236.	11.	AG	1.	.8	.0	20.0		
23. Country Road NB 2A	********	********	********	******** *	128.	21.	AG	101.	.8	.0	20.0		
24. Country Road NB 2B	********	********	********	******** *	135.	26.	AG	101.	.8	.0	20.0		
25. Country Road NB 2C	********	********	********	******** *	102.	31.	AG	101.	.8	.0	20.0		
26. Country Road NB 2D	********	********	********	******** *	148.	18.	AG	101.	.8	.0	20.0		
27. Country Road NB 2E	********	********	********	******** *	258.	12.	AG	101.	.8	.0	20.0		
28. Country Road SB 1A	********	********	********	******** *	242.	193.	AG	153.	.8	.0	30.0		
29. Country Road SB 1B	********	********	********	******** *	166.	196.	AG	153.	.8	.0	30.0		
30. Country Road SB 1C	********	********	********	******** *	106.	210.	AG	48.	.8	.0	30.0		
31. Country Road SB 1D	********	********	********	******** *	210.	204.	AG	48.	.8	.0	30.0		
32. Country Road SB 2A	********	********	********	******** *	127.	192.	AG	5.	.8	.0	30.0		
33. Country Road SB 2B	********	********	********	******** *	91.	193.	AG	5.	.8	.0	30.0		
34. Country Road SB 2C	********	********	********	******** *	64.	186.	AG	5.	.8	.0	30.0		
35. Country Road SB 2D	********	********	********	******** *	107.	187.	AG	5.	.8	.0	30.0		
36. Country Road SB 2E	********	********	********	******** *	351.	185.	AG	5.	.8	.0	30.0		
37. Existing On Ramp 1	********	********	********	******** *	181.	240.	AG	105.	.8	.0	30.0		
38. Existing On Ramp 2	********	********	********	******** *	199.	278.	AG	105.	.8	.0	30.0		
39. Existing On Ramp 3	********	********	********	******** *	181.	314.	AG	105.	.8	.0	30.0		
40. Existing On Ramp 4	********	********	********	******** *	170.	344.	AG	105.	.8	.0	30.0		
41. CR 161 SB Queue	********	********	********	******** *	12.	212.	AG	5.	100.0	.0	12.0	.24	.6
42. RTE 173 Queue Ex	********	********	********	******** *	33.	90.	AG	10.	100.0	.0	12.0	.63	1.7

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION N02 FRIDAY PM

DATE : 8/17/10
TIME : 14:53:54

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
41. CR 161 SB Queue	48	200.	3.60
42. RTE 173 Queue Ex	125	200.	3.60

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION N02 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	3.	3.	2.	5.	8.	17.	2.	2.	3.	3.	3.	7.	5.	5.	3.	3.	5.	5.	4.	3.
5.	2.	3.	2.	5.	8.	14.	2.	2.	3.	2.	3.	7.	5.	6.	4.	4.	5.	4.	3.	2.
10.	1.	3.	2.	6.	8.	12.	2.	2.	3.	2.	3.	6.	5.	6.	6.	5.	5.	3.	3.	2.
15.	0.	4.	3.	5.	8.	23.	2.	2.	3.	2.	3.	8.	6.	5.	4.	3.	4.	3.	3.	2.
20.	0.	4.	3.	4.	6.	24.	2.	2.	3.	2.	3.	8.	6.	4.	3.	2.	3.	3.	3.	2.
25.	0.	4.	4.	2.	4.	24.	3.	2.	3.	2.	3.	8.	5.	3.	2.	2.	2.	3.	3.	3.
30.	0.	3.	5.	1.	3.	22.	3.	3.	3.	2.	3.	7.	4.	2.	2.	1.	2.	3.	3.	3.
35.	0.	2.	6.	0.	3.	19.	4.	3.	3.	2.	2.	5.	3.	1.	1.	1.	2.	3.	3.	3.
40.	0.	1.	5.	0.	2.	15.	5.	3.	3.	2.	3.	3.	2.	2.	1.	1.	3.	4.	3.	3.
45.	0.	1.	5.	0.	3.	11.	5.	4.	4.	3.	3.	2.	2.	2.	2.	1.	3.	4.	3.	3.
50.	0.	1.	4.	0.	3.	8.	6.	4.	4.	3.	3.	2.	2.	2.	2.	1.	4.	4.	3.	3.
55.	0.	2.	3.	0.	4.	7.	6.	4.	4.	3.	3.	3.	2.	3.	2.	1.	5.	4.	3.	3.
60.	0.	1.	3.	1.	5.	6.	5.	5.	4.	3.	3.	3.	2.	2.	1.	1.	5.	3.	2.	2.
65.	0.	1.	3.	1.	5.	6.	4.	5.	5.	3.	4.	3.	2.	2.	1.	0.	5.	2.	2.	1.
70.	1.	0.	3.	2.	5.	6.	4.	5.	5.	4.	4.	2.	1.	1.	0.	0.	3.	1.	1.	1.
75.	1.	0.	4.	2.	4.	6.	3.	6.	6.	4.	4.	2.	0.	0.	0.	0.	2.	0.	0.	0.
80.	2.	0.	4.	2.	2.	5.	3.	6.	8.	4.	4.	1.	0.	0.	0.	0.	1.	0.	0.	0.
85.	2.	0.	5.	2.	1.	4.	3.	6.	8.	5.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	2.	0.	5.	2.	1.	3.	4.	6.	8.	7.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	1.	0.	5.	2.	0.	1.	3.	5.	7.	6.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	1.	0.	6.	3.	0.	1.	4.	4.	5.	6.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	1.	0.	5.	3.	0.	0.	3.	3.	4.	6.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	1.	0.	5.	3.	0.	0.	4.	4.	4.	6.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	1.	0.	5.	3.	0.	0.	8.	4.	4.	5.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	1.	0.	5.	3.	0.	0.	7.	5.	4.	4.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	1.	0.	6.	3.	0.	0.	5.	5.	4.	4.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	1.	0.	8.	2.	0.	0.	5.	5.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	1.	0.	11.	2.	0.	0.	4.	5.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	1.	0.	13.	2.	0.	0.	4.	5.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	1.	0.	14.	2.	0.	0.	4.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	1.	0.	14.	2.	0.	0.	4.	4.	4.	5.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	1.	0.	13.	2.	0.	0.	4.	4.	4.	5.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	1.	0.	10.	2.	0.	0.	3.	4.	4.	5.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	1.	0.	8.	2.	0.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	1.	0.	6.	2.	0.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	1.	0.	4.	2.	0.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	1.	0.	3.	2.	0.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	1.	0.	4.	2.	0.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	1.	0.	5.	2.	0.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	1.	0.	3.	2.	0.	0.	3.	3.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	1.	0.	3.	2.	0.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	1.	0.	3.	2.	0.	0.	3.	3.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION N02 FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	2.	0.	3.	2.	0.	0.	3.	3.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215. *	2.	0.	3.	3.	0.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220. *	3.	0.	3.	4.	0.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225. *	3.	0.	3.	5.	0.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230. *	4.	0.	3.	7.	0.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235. *	4.	0.	3.	10.	0.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240. *	4.	0.	3.	12.	0.	0.	4.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245. *	4.	0.	3.	13.	0.	0.	4.	4.	4.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	1.
250. *	4.	0.	3.	13.	0.	0.	4.	4.	4.	4.	4.	0.	0.	0.	0.	0.	1.	0.	0.	2.
255. *	4.	0.	4.	11.	0.	0.	4.	4.	4.	4.	4.	0.	0.	0.	0.	0.	1.	1.	1.	3.
260. *	5.	0.	4.	10.	0.	0.	4.	4.	4.	4.	4.	0.	0.	0.	0.	0.	2.	2.	3.	5.
265. *	5.	0.	4.	8.	0.	0.	4.	4.	4.	4.	4.	0.	0.	0.	0.	0.	4.	3.	5.	6.
270. *	5.	0.	3.	7.	1.	0.	4.	4.	4.	4.	4.	0.	0.	0.	0.	0.	5.	4.	6.	7.
275. *	5.	0.	3.	8.	1.	0.	3.	4.	4.	4.	4.	0.	0.	0.	0.	0.	5.	5.	8.	7.
280. *	4.	0.	3.	6.	2.	1.	3.	4.	5.	4.	4.	0.	0.	0.	0.	0.	6.	6.	9.	7.
285. *	3.	0.	4.	6.	3.	2.	4.	4.	5.	4.	4.	0.	0.	0.	0.	0.	7.	7.	9.	7.
290. *	3.	0.	4.	7.	5.	3.	4.	4.	4.	4.	4.	0.	0.	0.	0.	0.	8.	8.	8.	5.
295. *	2.	0.	4.	7.	16.	6.	4.	4.	4.	4.	4.	0.	0.	1.	0.	0.	8.	7.	7.	5.
300. *	2.	0.	4.	8.	17.	7.	5.	4.	4.	4.	4.	1.	0.	2.	0.	0.	8.	7.	5.	4.
305. *	2.	0.	4.	8.	16.	8.	5.	4.	3.	4.	4.	2.	0.	3.	1.	0.	7.	6.	5.	4.
310. *	2.	0.	4.	8.	13.	9.	4.	5.	3.	3.	3.	3.	1.	5.	2.	1.	7.	5.	4.	3.
315. *	2.	0.	3.	7.	10.	8.	4.	5.	3.	3.	3.	4.	2.	6.	3.	1.	6.	5.	4.	3.
320. *	2.	1.	2.	7.	8.	7.	3.	5.	3.	2.	2.	5.	3.	7.	4.	2.	6.	4.	4.	3.
325. *	2.	1.	2.	6.	6.	7.	3.	5.	4.	2.	1.	4.	3.	8.	4.	3.	5.	4.	3.	3.
330. *	3.	2.	2.	5.	6.	6.	2.	4.	4.	2.	1.	4.	3.	8.	5.	3.	5.	4.	4.	4.
335. *	3.	3.	2.	5.	6.	6.	2.	3.	4.	3.	0.	4.	3.	7.	5.	4.	5.	4.	4.	4.
340. *	3.	3.	2.	4.	6.	7.	2.	3.	4.	4.	1.	3.	3.	6.	5.	4.	5.	4.	4.	4.
345. *	4.	2.	2.	4.	6.	9.	2.	2.	4.	4.	1.	4.	3.	5.	4.	3.	4.	4.	5.	4.
350. *	4.	2.	2.	4.	7.	11.	2.	2.	3.	4.	2.	5.	4.	4.	4.	3.	5.	4.	4.	4.
355. *	4.	3.	2.	4.	7.	14.	2.	2.	3.	3.	3.	6.	4.	4.	3.	3.	5.	4.	4.	3.
MAX *	5.	4.	14.	13.	17.	24.	8.	6.	8.	7.	7.	8.	6.	8.	6.	5.	8.	8.	9.	7.
DEGR. *	270	20	145	245	300	20	115	85	85	90	115	20	15	325	10	10	295	290	285	275

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION N02 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	2.	4.	2.	1.	0.	5.	5.	6.	6.	7.	6.	6.	6.	10.	8.	7.	0.	0.	0.	0.
5.	2.	3.	1.	0.	0.	5.	5.	6.	6.	7.	6.	7.	8.	10.	7.	5.	0.	0.	1.	1.
10.	2.	2.	0.	0.	0.	5.	5.	6.	6.	6.	7.	7.	9.	9.	6.	4.	0.	1.	2.	2.
15.	2.	1.	0.	0.	0.	5.	5.	6.	5.	6.	6.	7.	8.	6.	4.	2.	1.	2.	3.	3.
20.	3.	1.	0.	0.	0.	6.	5.	5.	5.	5.	6.	6.	6.	4.	2.	1.	2.	3.	5.	5.
25.	3.	0.	0.	0.	0.	7.	5.	5.	5.	5.	6.	4.	4.	2.	1.	0.	3.	5.	6.	6.
30.	3.	0.	0.	0.	0.	8.	6.	6.	5.	5.	6.	2.	2.	1.	0.	0.	4.	6.	7.	7.
35.	3.	0.	0.	0.	0.	8.	7.	6.	6.	5.	6.	1.	1.	0.	0.	0.	4.	6.	7.	8.
40.	3.	0.	0.	0.	0.	8.	7.	7.	6.	6.	6.	0.	0.	0.	0.	0.	5.	6.	7.	7.
45.	3.	0.	0.	0.	0.	8.	8.	7.	6.	6.	6.	0.	0.	0.	0.	0.	4.	6.	7.	7.
50.	3.	0.	1.	1.	0.	8.	8.	8.	7.	6.	6.	0.	0.	0.	0.	0.	4.	6.	7.	7.
55.	3.	1.	2.	2.	1.	9.	8.	8.	7.	6.	6.	0.	0.	0.	0.	0.	4.	5.	6.	6.
60.	2.	2.	3.	3.	2.	10.	7.	8.	7.	7.	7.	0.	0.	0.	0.	0.	3.	5.	6.	6.
65.	2.	2.	4.	4.	4.	13.	7.	8.	8.	7.	7.	0.	0.	0.	0.	0.	3.	5.	6.	6.
70.	1.	3.	5.	5.	4.	15.	8.	8.	8.	8.	7.	1.	0.	0.	0.	0.	3.	4.	6.	6.
75.	0.	3.	5.	5.	5.	16.	9.	9.	9.	8.	7.	1.	1.	0.	0.	0.	3.	4.	6.	6.
80.	0.	3.	4.	5.	5.	16.	11.	10.	10.	9.	8.	2.	1.	1.	0.	0.	3.	4.	5.	6.
85.	0.	3.	4.	4.	4.	14.	12.	11.	10.	10.	10.	2.	1.	1.	0.	0.	3.	4.	6.	5.
90.	0.	3.	4.	4.	4.	11.	11.	11.	11.	10.	10.	1.	1.	1.	1.	0.	4.	4.	6.	6.
95.	0.	3.	3.	3.	3.	8.	10.	9.	11.	10.	10.	1.	1.	1.	1.	1.	4.	4.	6.	6.
100.	0.	3.	3.	3.	3.	5.	7.	8.	10.	10.	11.	1.	1.	1.	1.	1.	4.	4.	6.	6.
105.	0.	3.	3.	3.	3.	2.	4.	5.	9.	10.	11.	1.	1.	1.	1.	1.	4.	3.	6.	6.
110.	0.	3.	3.	3.	3.	1.	2.	3.	6.	9.	11.	1.	1.	1.	1.	1.	5.	3.	6.	6.
115.	0.	3.	3.	3.	3.	0.	1.	1.	4.	7.	11.	1.	1.	1.	1.	1.	5.	3.	6.	6.
120.	0.	3.	3.	3.	3.	0.	0.	0.	2.	5.	9.	1.	1.	1.	1.	1.	5.	3.	6.	6.
125.	0.	3.	3.	3.	3.	0.	0.	0.	1.	3.	7.	1.	1.	1.	1.	1.	5.	3.	6.	6.
130.	0.	3.	3.	3.	3.	0.	0.	0.	0.	1.	5.	1.	1.	1.	1.	1.	5.	3.	6.	6.
135.	0.	3.	3.	3.	2.	0.	0.	0.	0.	1.	3.	1.	1.	1.	1.	1.	5.	3.	6.	6.
140.	0.	3.	3.	3.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	5.	3.	6.	6.
145.	0.	3.	3.	3.	2.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	5.	3.	6.	7.
150.	0.	3.	3.	3.	2.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	6.	3.	6.	7.
155.	0.	2.	3.	3.	2.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	6.	3.	6.	7.
160.	0.	2.	3.	3.	2.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	6.	4.	6.	7.
165.	0.	2.	2.	3.	2.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	7.	4.	6.	8.
170.	0.	2.	3.	3.	2.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	8.	4.	6.	8.
175.	0.	2.	3.	3.	3.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	8.	5.	6.	8.
180.	0.	2.	3.	3.	3.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	8.	6.	6.	8.
185.	0.	2.	3.	3.	3.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	8.	6.	5.	7.
190.	0.	2.	3.	3.	3.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	7.	6.	5.	6.
195.	0.	2.	3.	3.	3.	0.	0.	0.	0.	0.	0.	3.	3.	2.	2.	3.	6.	6.	6.	6.
200.	0.	3.	3.	3.	3.	0.	0.	0.	0.	0.	0.	5.	4.	3.	3.	4.	5.	5.	5.	4.
205.	0.	3.	3.	3.	3.	0.	0.	0.	0.	0.	0.	7.	5.	4.	5.	6.	4.	4.	4.	3.

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION N02 FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	3.	3.	3.	3.	0.	0.	0.	0.	0.	0.	9.	6.	5.	6.	8.	4.	4.	3.	3.
215.	0.	3.	3.	4.	4.	0.	0.	0.	0.	0.	0.	10.	7.	6.	7.	9.	4.	4.	3.	2.
220.	0.	3.	3.	4.	4.	0.	0.	0.	0.	0.	0.	10.	6.	6.	8.	9.	4.	3.	2.	2.
225.	0.	3.	3.	3.	4.	0.	0.	0.	0.	0.	0.	8.	6.	7.	9.	9.	4.	3.	2.	2.
230.	0.	3.	3.	3.	4.	0.	0.	0.	0.	0.	0.	7.	6.	7.	8.	9.	4.	2.	2.	1.
235.	0.	4.	3.	3.	4.	0.	0.	0.	0.	0.	0.	6.	6.	8.	8.	8.	3.	2.	2.	2.
240.	1.	4.	4.	4.	3.	0.	0.	0.	0.	0.	0.	6.	6.	8.	8.	8.	3.	2.	2.	2.
245.	2.	6.	5.	4.	3.	0.	0.	0.	0.	0.	0.	6.	6.	9.	7.	7.	3.	2.	2.	1.
250.	4.	7.	5.	4.	3.	0.	0.	0.	0.	0.	0.	6.	7.	8.	7.	7.	3.	2.	1.	1.
255.	5.	7.	5.	4.	3.	0.	0.	0.	0.	0.	0.	6.	8.	7.	7.	7.	3.	2.	2.	1.
260.	6.	7.	5.	4.	3.	0.	0.	0.	0.	0.	0.	6.	8.	6.	7.	6.	2.	2.	1.	1.
265.	6.	7.	5.	4.	3.	0.	0.	0.	0.	0.	0.	6.	9.	5.	7.	6.	2.	2.	1.	1.
270.	6.	6.	4.	4.	3.	0.	0.	0.	0.	0.	0.	7.	8.	5.	6.	6.	2.	1.	1.	0.
275.	6.	6.	4.	4.	3.	0.	0.	0.	0.	0.	0.	8.	8.	5.	6.	6.	2.	1.	1.	0.
280.	6.	6.	4.	4.	3.	1.	0.	0.	0.	0.	0.	8.	7.	4.	6.	5.	1.	1.	0.	0.
285.	6.	6.	4.	3.	2.	2.	1.	0.	0.	0.	0.	8.	6.	4.	5.	5.	1.	0.	0.	0.
290.	5.	6.	4.	3.	2.	3.	1.	0.	0.	0.	0.	7.	6.	4.	5.	5.	1.	0.	0.	0.
295.	4.	5.	3.	2.	2.	5.	3.	1.	0.	0.	0.	6.	5.	3.	5.	5.	0.	0.	0.	0.
300.	4.	4.	3.	2.	1.	7.	4.	1.	0.	0.	0.	6.	5.	3.	5.	5.	0.	0.	0.	0.
305.	4.	3.	2.	1.	1.	9.	6.	3.	1.	0.	0.	5.	5.	3.	5.	5.	0.	0.	0.	0.
310.	3.	3.	2.	1.	2.	9.	8.	5.	2.	1.	0.	5.	4.	3.	6.	5.	0.	0.	0.	0.
315.	3.	2.	2.	1.	2.	9.	9.	7.	4.	2.	0.	5.	4.	4.	6.	6.	0.	0.	0.	0.
320.	4.	2.	2.	1.	2.	8.	9.	8.	5.	3.	1.	5.	4.	4.	5.	6.	0.	0.	0.	0.
325.	4.	2.	2.	2.	2.	8.	8.	9.	7.	5.	2.	5.	4.	4.	6.	6.	0.	0.	0.	0.
330.	4.	2.	2.	2.	2.	7.	8.	8.	7.	7.	3.	5.	3.	5.	6.	6.	0.	0.	0.	0.
335.	4.	2.	2.	2.	2.	6.	7.	8.	7.	8.	4.	5.	3.	6.	6.	7.	0.	0.	0.	0.
340.	4.	2.	2.	2.	2.	6.	6.	8.	7.	8.	5.	5.	3.	6.	7.	7.	0.	0.	0.	0.
345.	3.	2.	3.	2.	1.	6.	6.	7.	7.	8.	6.	5.	4.	7.	7.	7.	0.	0.	0.	0.
350.	3.	3.	3.	2.	1.	6.	6.	7.	7.	7.	6.	5.	4.	8.	8.	8.	0.	0.	0.	0.
355.	2.	3.	3.	1.	0.	5.	5.	6.	6.	7.	6.	6.	5.	9.	8.	8.	0.	0.	0.	0.
MAX	6.	7.	5.	5.	5.	16.	11.	11.	11.	10.	11.	10.	9.	10.	9.	9.	8.	6.	7.	8.
DEGR.	270	255	260	75	75	75	85	85	95	100	110	215	10	0	225	220	180	195	35	175

THE HIGHEST CONCENTRATION OF 24. ug/m**3 OCCURRED AT RECEPTOR REC6 .

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION N02 FRIDAY PM

DATE : 9/10/10
TIME : 15:30:50

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	193.	.3	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	193.	.3	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	193.	.3	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	193.	.3	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	65.	.3	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	65.	.3	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	65.	.3	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	65.	.3	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	65.	.3	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	65.	.3	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	50.	.3	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	50.	.3	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	50.	.3	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	50.	.3	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	50.	.3	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	59.	.3	.0	30.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	59.	.3	.0	30.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	59.	.3	.0	30.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	59.	.3	.0	30.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	1.	.3	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	1.	.3	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	1.	.3	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	166.	.3	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	166.	.3	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	166.	.3	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	166.	.3	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	166.	.3	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	53.	.3	.0	30.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	53.	.3	.0	30.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	53.	.3	.0	30.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	53.	.3	.0	30.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.3	.0	30.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.3	.0	30.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.3	.0	30.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.3	.0	30.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.3	.0	30.0		
37. Existing On Ramp 1	********	********	********	********	181.	240.	AG	181.	.3	.0	30.0		
38. Existing On Ramp 2	********	********	********	********	199.	278.	AG	181.	.3	.0	30.0		
39. Existing On Ramp 3	********	********	********	********	181.	314.	AG	181.	.3	.0	30.0		
40. Existing On Ramp 4	********	********	********	********	170.	344.	AG	181.	.3	.0	30.0		
41. CR 161 SB Queue	********	********	********	********	12.	212.	AG	2.	100.0	.0	12.0	.26	.6
42. RTE 173 Queue Ex	********	********	********	********	36.	112.	AG	4.	100.0	.0	12.0	.64	1.8

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION N02 FRIDAY PM

DATE : 9/10/10
TIME : 15:30:50

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
41. CR 161 SB Queue	53	200.	1.50
42. RTE 173 Queue Ex	193	300.	1.50

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION N02 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	1.	1.	1.	3.	4.	4.	1.	1.	2.	2.	2.	2.	1.	4.	3.	2.	2.	2.	2.	1.
5.	1.	1.	1.	3.	4.	4.	1.	1.	2.	2.	2.	2.	2.	4.	3.	2.	2.	2.	1.	1.
10.	1.	1.	1.	3.	4.	6.	1.	1.	2.	2.	2.	3.	2.	4.	3.	2.	2.	1.	1.	1.
15.	0.	2.	2.	2.	4.	10.	1.	1.	2.	2.	2.	5.	3.	2.	2.	2.	2.	1.	1.	1.
20.	0.	3.	2.	2.	3.	11.	1.	1.	2.	2.	2.	6.	4.	2.	2.	1.	1.	1.	1.	1.
25.	0.	2.	2.	1.	2.	12.	2.	2.	2.	2.	2.	6.	4.	1.	1.	1.	1.	1.	1.	1.
30.	0.	2.	3.	1.	1.	13.	2.	2.	2.	2.	2.	6.	3.	1.	0.	0.	1.	1.	1.	1.
35.	0.	2.	3.	0.	1.	13.	2.	2.	2.	2.	2.	4.	2.	1.	1.	0.	1.	1.	1.	1.
40.	0.	1.	3.	0.	1.	12.	3.	2.	2.	2.	2.	3.	1.	1.	1.	1.	1.	2.	1.	1.
45.	0.	1.	3.	0.	1.	11.	3.	2.	2.	2.	2.	2.	1.	1.	1.	0.	1.	2.	2.	1.
50.	0.	1.	2.	0.	1.	9.	3.	2.	2.	2.	2.	1.	1.	1.	1.	1.	2.	2.	1.	1.
55.	0.	1.	2.	0.	2.	8.	4.	3.	2.	2.	2.	1.	1.	1.	1.	0.	2.	2.	1.	1.
60.	0.	0.	2.	0.	2.	6.	3.	3.	3.	2.	2.	1.	1.	1.	0.	0.	2.	2.	1.	1.
65.	0.	0.	1.	0.	2.	5.	3.	3.	3.	2.	2.	1.	1.	1.	0.	0.	2.	1.	1.	1.
70.	0.	0.	2.	1.	2.	4.	2.	4.	4.	2.	2.	1.	0.	0.	0.	0.	2.	1.	0.	0.
75.	1.	0.	2.	1.	2.	3.	2.	3.	4.	2.	2.	1.	0.	0.	0.	0.	1.	0.	0.	0.
80.	1.	0.	2.	1.	1.	2.	2.	4.	5.	3.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	1.	0.	2.	1.	1.	2.	1.	3.	5.	4.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	1.	0.	3.	1.	0.	1.	3.	3.	5.	4.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	1.	0.	3.	1.	0.	1.	3.	3.	4.	4.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	1.	0.	3.	1.	0.	0.	2.	2.	3.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	1.	0.	3.	1.	0.	0.	2.	2.	2.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	1.	0.	3.	1.	0.	0.	2.	2.	2.	4.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	1.	0.	2.	1.	0.	0.	2.	2.	2.	3.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	1.	0.	2.	1.	0.	0.	2.	3.	2.	3.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	1.	0.	2.	1.	0.	0.	3.	3.	3.	3.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	2.	1.	0.	0.	3.	4.	3.	3.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	2.	1.	0.	0.	4.	4.	3.	3.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	2.	1.	0.	0.	4.	4.	3.	3.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	1.	0.	2.	1.	0.	0.	4.	3.	3.	3.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	1.	0.	3.	1.	0.	0.	4.	3.	2.	3.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	4.	1.	0.	0.	3.	2.	2.	3.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	5.	1.	0.	0.	2.	2.	2.	3.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	6.	1.	0.	0.	2.	2.	2.	3.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	6.	1.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	1.	0.	6.	1.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	6.	1.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	1.	0.	5.	1.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	4.	1.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	2.	1.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	2.	1.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	2.	1.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION N02 FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	1.	0.	2.	1.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215. *	1.	0.	2.	1.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220. *	1.	0.	2.	1.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225. *	1.	0.	2.	1.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230. *	2.	0.	2.	2.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235. *	2.	0.	2.	3.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240. *	3.	0.	2.	4.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245. *	3.	0.	2.	5.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250. *	3.	0.	2.	6.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	1.
255. *	3.	0.	2.	7.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	1.
260. *	3.	0.	2.	7.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	1.	0.	1.	2.
265. *	3.	0.	2.	7.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	1.	1.	2.	3.
270. *	3.	0.	2.	6.	0.	0.	2.	2.	3.	2.	2.	0.	0.	0.	0.	0.	2.	2.	3.	4.
275. *	3.	0.	2.	5.	2.	0.	2.	2.	3.	2.	2.	0.	0.	0.	0.	0.	3.	3.	4.	4.
280. *	3.	0.	2.	4.	1.	0.	2.	2.	3.	2.	2.	0.	0.	0.	0.	0.	4.	3.	4.	4.
285. *	2.	0.	2.	4.	2.	1.	2.	2.	3.	2.	2.	0.	0.	0.	0.	0.	4.	4.	5.	4.
290. *	2.	0.	3.	4.	3.	2.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	5.	4.	4.	3.
295. *	1.	0.	3.	4.	4.	3.	3.	2.	2.	2.	3.	0.	0.	0.	0.	0.	5.	4.	4.	2.
300. *	1.	0.	3.	5.	5.	4.	3.	2.	2.	2.	3.	1.	0.	1.	0.	0.	6.	5.	3.	2.
305. *	1.	0.	3.	5.	6.	5.	3.	3.	2.	2.	2.	1.	0.	2.	0.	0.	5.	4.	3.	2.
310. *	1.	0.	2.	5.	6.	5.	3.	3.	2.	2.	2.	2.	0.	2.	1.	0.	5.	4.	3.	2.
315. *	1.	0.	2.	4.	6.	5.	3.	3.	2.	2.	1.	2.	1.	3.	2.	1.	5.	3.	3.	2.
320. *	1.	0.	2.	4.	7.	4.	2.	4.	2.	1.	1.	3.	2.	3.	2.	1.	4.	3.	2.	2.
325. *	1.	1.	2.	4.	7.	4.	2.	3.	3.	1.	0.	3.	2.	2.	2.	2.	4.	2.	2.	2.
330. *	1.	1.	1.	3.	7.	3.	2.	3.	3.	2.	0.	2.	2.	2.	2.	2.	3.	2.	2.	1.
335. *	1.	1.	1.	3.	7.	3.	1.	2.	3.	2.	0.	2.	2.	2.	2.	1.	3.	2.	2.	2.
340. *	1.	2.	1.	3.	6.	3.	1.	2.	3.	3.	0.	2.	2.	3.	2.	1.	3.	2.	2.	2.
345. *	1.	1.	1.	3.	5.	3.	1.	2.	3.	3.	1.	2.	1.	3.	2.	1.	2.	2.	2.	2.
350. *	1.	1.	1.	3.	4.	3.	1.	2.	2.	3.	1.	2.	1.	4.	2.	1.	2.	2.	2.	1.
355. *	1.	1.	1.	3.	4.	3.	1.	1.	2.	2.	2.	2.	1.	4.	2.	2.	2.	2.	2.	1.
MAX *	3.	3.	6.	7.	7.	13.	4.	4.	5.	4.	4.	6.	4.	4.	3.	2.	6.	5.	5.	4.
DEGR. *	265	20	170	260	325	30	140	135	85	95	115	25	25	0	5	5	300	300	285	275

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION N02 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	1.	1.	1.	0.	0.	3.	3.	4.	4.	4.	4.	3.	3.	4.	3.	3.	0.	0.	0.	0.
5.	1.	1.	1.	0.	0.	3.	3.	3.	4.	4.	4.	4.	3.	4.	3.	2.	0.	0.	0.	0.
10.	1.	1.	0.	0.	0.	3.	3.	3.	4.	4.	4.	3.	4.	4.	3.	2.	0.	0.	0.	0.
15.	1.	1.	0.	0.	0.	3.	3.	3.	3.	4.	4.	3.	3.	3.	2.	1.	0.	1.	1.	1.
20.	1.	0.	0.	0.	0.	3.	3.	3.	3.	3.	4.	3.	3.	2.	1.	0.	1.	1.	1.	1.
25.	1.	0.	0.	0.	0.	4.	3.	3.	3.	3.	4.	2.	2.	1.	0.	0.	1.	1.	2.	2.
30.	1.	0.	0.	0.	0.	4.	3.	3.	3.	3.	4.	1.	1.	0.	0.	0.	1.	2.	2.	2.
35.	1.	0.	0.	0.	0.	4.	4.	4.	3.	3.	4.	1.	0.	0.	0.	0.	1.	2.	2.	2.
40.	1.	0.	0.	0.	0.	5.	4.	4.	3.	3.	3.	0.	0.	0.	0.	0.	2.	2.	2.	2.
45.	2.	0.	0.	0.	0.	5.	5.	4.	4.	3.	3.	0.	0.	0.	0.	0.	1.	2.	2.	2.
50.	1.	0.	0.	0.	0.	5.	5.	4.	4.	4.	4.	0.	0.	0.	0.	0.	1.	2.	2.	2.
55.	1.	0.	1.	1.	0.	5.	4.	5.	4.	4.	4.	0.	0.	0.	0.	0.	2.	2.	2.	2.
60.	1.	1.	1.	1.	1.	5.	4.	5.	4.	4.	4.	0.	0.	0.	0.	0.	2.	2.	2.	2.
65.	1.	1.	2.	2.	2.	5.	4.	5.	5.	4.	4.	0.	0.	0.	0.	0.	2.	2.	2.	2.
70.	0.	1.	2.	2.	2.	6.	4.	4.	5.	4.	4.	0.	0.	0.	0.	0.	2.	1.	2.	2.
75.	0.	2.	2.	2.	2.	7.	5.	5.	5.	4.	4.	1.	0.	0.	0.	0.	2.	2.	2.	2.
80.	0.	1.	2.	2.	2.	8.	5.	5.	5.	5.	4.	1.	1.	0.	0.	0.	2.	2.	2.	2.
85.	0.	1.	2.	2.	2.	8.	6.	5.	5.	6.	5.	1.	1.	1.	0.	0.	2.	2.	2.	2.
90.	0.	1.	2.	2.	2.	7.	6.	6.	6.	6.	6.	1.	1.	1.	0.	0.	2.	2.	2.	2.
95.	0.	1.	1.	2.	1.	6.	5.	5.	7.	6.	6.	1.	0.	1.	1.	0.	2.	2.	2.	2.
100.	0.	1.	1.	1.	1.	4.	4.	4.	6.	6.	6.	1.	1.	0.	1.	0.	2.	2.	2.	2.
105.	0.	1.	1.	1.	1.	2.	2.	3.	5.	6.	7.	1.	0.	0.	0.	0.	3.	2.	2.	2.
110.	0.	1.	1.	1.	1.	1.	1.	2.	4.	5.	7.	1.	0.	0.	0.	0.	3.	2.	2.	2.
115.	0.	1.	1.	1.	1.	1.	1.	1.	2.	4.	6.	0.	0.	0.	0.	0.	3.	2.	2.	2.
120.	0.	1.	1.	1.	1.	1.	1.	1.	2.	3.	6.	1.	0.	0.	0.	0.	3.	2.	2.	2.
125.	0.	1.	1.	1.	1.	2.	1.	1.	1.	2.	4.	1.	0.	0.	0.	0.	3.	2.	2.	2.
130.	0.	1.	1.	1.	1.	0.	2.	1.	1.	1.	3.	0.	0.	0.	0.	0.	3.	2.	2.	2.
135.	0.	1.	1.	1.	1.	0.	2.	1.	1.	1.	2.	1.	0.	0.	0.	0.	3.	2.	2.	2.
140.	0.	1.	1.	1.	1.	0.	1.	1.	0.	1.	1.	0.	0.	0.	0.	0.	3.	2.	2.	2.
145.	0.	1.	1.	1.	1.	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	3.	2.	2.	2.
150.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	3.	2.	2.	2.
155.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	3.	2.	2.	2.
160.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	4.	2.	2.	2.
165.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	4.	2.	2.	2.
170.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.	2.	2.	2.
175.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	4.	3.	2.	2.
180.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	4.	3.	2.	2.
185.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	4.	3.	3.	2.
190.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	4.	3.	3.	2.
195.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	4.	4.	3.	3.
200.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	2.	4.	3.	3.	2.
205.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	2.	1.	2.	3.	4.	3.	3.	2.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION N02 FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	3.	3.	2.	4.	4.	4.	3.	2.	2.
215.	0.	1.	1.	2.	2.	0.	0.	0.	0.	0.	0.	4.	4.	3.	4.	5.	3.	3.	2.	2.
220.	0.	1.	1.	2.	2.	0.	0.	0.	0.	0.	0.	5.	4.	4.	5.	5.	3.	2.	2.	1.
225.	0.	1.	1.	1.	2.	0.	0.	0.	0.	0.	0.	5.	5.	5.	5.	5.	3.	2.	1.	1.
230.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	5.	4.	5.	5.	4.	2.	2.	1.	1.
235.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	5.	4.	5.	5.	4.	2.	1.	1.	1.
240.	0.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	5.	4.	5.	4.	3.	2.	1.	1.	1.
245.	1.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	4.	4.	5.	4.	3.	2.	1.	1.	1.
250.	1.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	4.	5.	5.	4.	3.	2.	1.	1.	1.
255.	2.	3.	2.	2.	2.	0.	0.	0.	0.	0.	0.	4.	5.	4.	3.	3.	2.	1.	1.	1.
260.	3.	4.	3.	2.	2.	0.	0.	0.	0.	0.	0.	4.	5.	4.	3.	3.	1.	1.	1.	1.
265.	3.	4.	3.	2.	2.	0.	0.	0.	0.	0.	0.	4.	5.	3.	3.	3.	1.	1.	1.	0.
270.	4.	4.	3.	3.	2.	0.	0.	0.	0.	0.	0.	4.	5.	3.	3.	2.	1.	1.	1.	0.
275.	4.	4.	3.	2.	2.	0.	0.	0.	0.	0.	0.	5.	5.	3.	2.	2.	1.	1.	0.	0.
280.	3.	3.	3.	3.	2.	0.	0.	0.	0.	0.	0.	5.	5.	3.	2.	2.	1.	0.	0.	0.
285.	3.	3.	3.	2.	1.	1.	0.	0.	0.	0.	0.	5.	4.	2.	2.	2.	1.	0.	0.	0.
290.	2.	3.	2.	2.	1.	2.	1.	0.	0.	0.	0.	4.	4.	2.	2.	2.	0.	0.	0.	0.
295.	2.	3.	2.	1.	1.	3.	2.	0.	0.	0.	0.	4.	3.	2.	2.	2.	0.	0.	0.	0.
300.	2.	3.	2.	1.	1.	4.	3.	1.	0.	0.	0.	3.	3.	2.	2.	2.	0.	0.	0.	0.
305.	2.	3.	1.	1.	1.	5.	4.	2.	1.	0.	0.	3.	3.	2.	2.	2.	0.	0.	0.	0.
310.	1.	2.	1.	1.	1.	5.	5.	3.	1.	1.	0.	3.	3.	2.	2.	2.	0.	0.	0.	0.
315.	2.	2.	1.	1.	1.	5.	5.	4.	2.	1.	0.	3.	2.	2.	2.	2.	0.	0.	0.	0.
320.	1.	1.	1.	1.	1.	5.	5.	5.	3.	2.	1.	3.	2.	2.	2.	2.	0.	0.	0.	0.
325.	2.	1.	1.	1.	1.	5.	5.	5.	4.	3.	1.	3.	2.	2.	2.	2.	0.	0.	0.	0.
330.	2.	1.	1.	1.	1.	4.	5.	5.	4.	4.	2.	3.	2.	2.	2.	2.	0.	0.	0.	0.
335.	2.	1.	1.	1.	1.	4.	4.	5.	4.	5.	2.	3.	2.	2.	2.	2.	0.	0.	0.	0.
340.	1.	1.	1.	1.	1.	4.	4.	5.	4.	5.	3.	3.	2.	2.	3.	3.	0.	0.	0.	0.
345.	1.	1.	1.	1.	0.	3.	4.	4.	4.	5.	4.	3.	2.	3.	3.	3.	0.	0.	0.	0.
350.	1.	1.	1.	1.	0.	3.	3.	4.	4.	4.	4.	3.	2.	3.	3.	3.	0.	0.	0.	0.
355.	1.	1.	1.	0.	0.	3.	3.	4.	4.	4.	4.	3.	2.	3.	3.	3.	0.	0.	0.	0.
MAX	4.	4.	3.	3.	2.	8.	6.	6.	6.	6.	7.	5.	5.	5.	5.	5.	4.	4.	3.	3.
DEGR.	275	265	265	270	265	85	85	90	95	100	110	230	265	240	225	215	190	195	195	195

THE HIGHEST CONCENTRATION OF 13. ug/m**3 OCCURRED AT RECEPTOR REC6 .

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION N02 FRIDAY PM

DATE : 9/10/10
TIME : 15:31: 9

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	388.	.3	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	388.	.3	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	388.	.3	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	388.	.3	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	76.	.3	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	76.	.3	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	76.	.3	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	76.	.3	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	76.	.3	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	76.	.3	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	59.	.3	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	59.	.3	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	59.	.3	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	59.	.3	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	59.	.3	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	891.	.3	.0	42.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	891.	.3	.0	42.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	891.	.3	.0	42.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	891.	.3	.0	42.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	3.	.3	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	3.	.3	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	3.	.3	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	371.	.3	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	371.	.3	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	371.	.3	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	371.	.3	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	371.	.3	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	893.	.3	.0	42.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	893.	.3	.0	42.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	893.	.3	.0	42.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	893.	.3	.0	42.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.3	.0	42.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.3	.0	42.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.3	.0	42.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.3	.0	42.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.3	.0	42.0		
37. Future 173 WB Ramp A	********	********	********	********	63.	211.	AG	868.	.3	.0	30.0		
38. Future 173 WB Ramp B	********	********	********	********	60.	261.	AG	868.	.3	.0	30.0		
39. Future 173 WB Ramp C	********	********	********	********	72.	273.	AG	868.	.3	.0	30.0		
40. Route 173 Queue Futu	********	********	********	********	1789.	110.	AG	4.	100.0	.0	12.0	1.66	90.9
41. Route 173 Queue Futu	********	********	********	********	1789.	103.	AG	4.	100.0	.0	12.0	1.66	90.9
42. CR 161 SB Queue	********	********	********	********	12.	212.	AG	1.	100.0	.0	12.0	.12	.6

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION N02 FRIDAY PM

DATE : 9/10/10
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ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
40. Route 173 Queue Futu	332	200.	1.50
41. Route 173 Queue Futu	332	200.	1.50
42. CR 161 SB Queue	24	200.	1.50

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION N02 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	7.	8.	0.	13.	31.	31.	0.	0.	0.	0.	0.	18.	13.	21.	16.	13.	26.	14.	4.	2.
5.	5.	10.	0.	14.	32.	33.	0.	0.	0.	0.	0.	20.	15.	22.	17.	14.	26.	13.	2.	1.
10.	2.	12.	1.	15.	31.	36.	0.	0.	0.	0.	0.	22.	17.	21.	17.	14.	25.	11.	2.	1.
15.	1.	14.	2.	13.	30.	40.	0.	0.	0.	0.	0.	26.	20.	19.	15.	13.	22.	10.	1.	1.
20.	0.	16.	3.	10.	26.	45.	1.	0.	0.	0.	0.	28.	21.	17.	12.	10.	21.	10.	1.	1.
25.	0.	15.	6.	6.	22.	49.	1.	0.	0.	0.	0.	28.	19.	13.	10.	8.	20.	10.	1.	1.
30.	0.	12.	9.	2.	19.	49.	3.	1.	0.	0.	0.	25.	16.	11.	8.	7.	19.	10.	2.	1.
35.	0.	9.	12.	1.	18.	46.	4.	2.	1.	0.	0.	19.	12.	10.	7.	6.	19.	10.	2.	1.
40.	0.	7.	13.	0.	18.	40.	5.	3.	1.	0.	0.	15.	9.	10.	8.	6.	20.	11.	2.	2.
45.	0.	6.	14.	0.	18.	35.	6.	4.	2.	1.	0.	12.	8.	10.	8.	6.	21.	11.	2.	2.
50.	0.	6.	14.	0.	18.	31.	7.	4.	3.	2.	1.	11.	8.	10.	8.	6.	21.	11.	2.	2.
55.	0.	7.	13.	0.	20.	28.	7.	5.	3.	2.	1.	11.	8.	11.	8.	7.	22.	12.	2.	1.
60.	0.	6.	14.	0.	21.	26.	7.	5.	4.	3.	2.	11.	9.	11.	8.	7.	24.	12.	1.	1.
65.	0.	7.	14.	1.	22.	25.	6.	5.	4.	3.	2.	12.	9.	11.	8.	7.	25.	12.	1.	1.
70.	0.	7.	15.	1.	23.	25.	7.	5.	4.	3.	3.	12.	9.	11.	8.	7.	13.	12.	0.	0.
75.	1.	7.	16.	1.	23.	25.	7.	5.	4.	3.	3.	12.	9.	12.	9.	7.	13.	12.	0.	0.
80.	1.	7.	17.	1.	24.	26.	8.	5.	4.	3.	3.	13.	10.	13.	10.	8.	13.	13.	0.	0.
85.	1.	7.	17.	1.	26.	27.	9.	6.	4.	3.	3.	14.	10.	14.	10.	8.	14.	14.	0.	0.
90.	1.	6.	18.	2.	28.	29.	10.	7.	5.	4.	3.	14.	10.	14.	10.	7.	15.	2.	1.	0.
95.	1.	5.	20.	4.	29.	29.	13.	12.	8.	5.	4.	14.	9.	13.	8.	5.	17.	5.	2.	1.
100.	1.	3.	25.	9.	28.	27.	19.	19.	14.	9.	6.	11.	6.	11.	6.	3.	13.	11.	6.	3.
105.	2.	1.	27.	12.	23.	22.	24.	26.	20.	16.	10.	8.	3.	7.	3.	1.	19.	15.	8.	6.
110.	4.	0.	36.	20.	15.	14.	34.	38.	31.	22.	15.	4.	1.	4.	1.	0.	19.	14.	15.	10.
115.	6.	0.	39.	24.	8.	7.	40.	44.	36.	27.	19.	1.	0.	1.	0.	0.	20.	14.	19.	13.
120.	8.	0.	39.	24.	3.	3.	42.	44.	35.	27.	21.	0.	0.	0.	0.	0.	20.	14.	20.	14.
125.	9.	0.	37.	23.	1.	1.	42.	41.	32.	25.	20.	0.	0.	0.	0.	0.	19.	27.	19.	14.
130.	9.	0.	35.	21.	0.	0.	41.	36.	27.	23.	18.	0.	0.	0.	0.	0.	16.	24.	18.	14.
135.	9.	0.	34.	19.	0.	0.	39.	32.	22.	20.	16.	0.	0.	0.	0.	0.	15.	22.	16.	13.
140.	9.	0.	33.	18.	0.	0.	37.	29.	19.	19.	16.	0.	0.	0.	0.	0.	14.	21.	15.	12.
145.	8.	0.	33.	17.	0.	0.	36.	26.	17.	19.	15.	0.	0.	0.	0.	0.	13.	20.	15.	11.
150.	8.	0.	33.	17.	0.	0.	34.	24.	15.	18.	15.	0.	0.	0.	0.	0.	12.	19.	14.	11.
155.	7.	0.	32.	16.	0.	0.	31.	22.	15.	18.	15.	0.	0.	0.	0.	0.	12.	18.	13.	10.
160.	7.	0.	32.	15.	0.	0.	29.	20.	14.	17.	15.	0.	0.	0.	0.	0.	11.	17.	13.	10.
165.	7.	0.	32.	15.	0.	0.	27.	18.	14.	16.	15.	0.	0.	0.	0.	0.	11.	17.	12.	10.
170.	7.	0.	31.	15.	0.	0.	25.	17.	14.	15.	15.	0.	0.	0.	0.	0.	10.	17.	12.	10.
175.	7.	0.	31.	14.	0.	0.	23.	15.	14.	15.	15.	0.	0.	0.	0.	0.	10.	16.	12.	10.
180.	7.	0.	30.	14.	0.	0.	21.	14.	13.	14.	14.	0.	0.	0.	0.	0.	10.	16.	12.	9.
185.	7.	0.	30.	14.	0.	0.	20.	12.	13.	13.	14.	0.	0.	0.	0.	0.	10.	16.	12.	9.
190.	7.	0.	30.	14.	0.	0.	19.	12.	13.	13.	14.	0.	0.	0.	0.	0.	10.	16.	12.	9.
195.	7.	0.	31.	14.	0.	0.	18.	12.	12.	12.	13.	0.	0.	0.	0.	0.	10.	16.	12.	9.
200.	7.	0.	31.	14.	0.	0.	18.	12.	12.	12.	13.	0.	0.	0.	0.	0.	10.	16.	12.	9.
205.	7.	0.	31.	14.	0.	0.	17.	12.	12.	12.	13.	0.	0.	0.	0.	0.	10.	16.	12.	9.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION N02 FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210.	7.	0.	31.	14.	0.	0.	17.	11.	12.	12.	12.	0.	0.	0.	0.	0.	10.	16.	12.	9.
215.	7.	0.	32.	15.	0.	0.	17.	11.	12.	12.	12.	0.	0.	0.	0.	0.	10.	16.	12.	9.
220.	8.	0.	32.	15.	0.	0.	18.	12.	12.	12.	12.	0.	0.	0.	0.	0.	10.	16.	12.	10.
225.	10.	0.	31.	16.	0.	0.	18.	12.	12.	12.	12.	0.	0.	0.	0.	0.	10.	17.	12.	10.
230.	12.	0.	31.	17.	0.	0.	18.	12.	12.	12.	12.	0.	0.	0.	0.	0.	10.	17.	13.	10.
235.	16.	0.	30.	19.	0.	0.	17.	13.	12.	12.	12.	0.	0.	0.	0.	0.	11.	18.	13.	10.
240.	18.	0.	29.	22.	0.	0.	17.	13.	12.	12.	12.	0.	0.	0.	0.	0.	11.	18.	14.	11.
245.	19.	0.	28.	25.	0.	0.	16.	13.	13.	13.	12.	0.	0.	0.	0.	0.	12.	19.	14.	11.
250.	18.	0.	26.	28.	0.	0.	15.	13.	13.	13.	12.	0.	0.	0.	0.	0.	12.	20.	15.	12.
255.	15.	0.	23.	31.	0.	0.	15.	13.	14.	14.	12.	0.	0.	0.	0.	0.	13.	22.	16.	14.
260.	13.	0.	20.	34.	0.	0.	14.	14.	14.	14.	12.	0.	0.	0.	0.	0.	14.	23.	18.	16.
265.	11.	0.	18.	36.	0.	0.	14.	13.	15.	14.	13.	0.	0.	0.	0.	0.	15.	25.	21.	18.
270.	9.	0.	15.	38.	0.	0.	13.	13.	15.	15.	13.	0.	0.	0.	0.	0.	18.	27.	23.	19.
275.	8.	0.	12.	37.	2.	1.	12.	13.	16.	15.	14.	0.	0.	0.	0.	0.	22.	28.	24.	18.
280.	8.	0.	10.	33.	5.	2.	11.	13.	17.	15.	14.	0.	0.	0.	0.	0.	29.	28.	22.	15.
285.	7.	0.	8.	29.	11.	5.	10.	13.	17.	15.	15.	0.	0.	0.	0.	0.	31.	28.	19.	12.
290.	6.	0.	7.	25.	20.	11.	9.	13.	17.	15.	16.	0.	0.	1.	0.	0.	35.	30.	14.	9.
295.	6.	0.	5.	21.	30.	18.	8.	12.	16.	15.	16.	1.	0.	2.	0.	0.	34.	29.	11.	7.
300.	6.	0.	4.	19.	39.	27.	6.	10.	15.	15.	17.	3.	0.	5.	1.	0.	31.	26.	7.	5.
305.	6.	0.	2.	17.	43.	33.	4.	8.	13.	14.	16.	5.	1.	9.	2.	1.	26.	22.	6.	5.
310.	6.	0.	1.	16.	42.	37.	2.	6.	10.	13.	15.	9.	2.	13.	5.	1.	23.	20.	5.	4.
315.	6.	1.	0.	15.	40.	37.	1.	3.	7.	10.	12.	12.	4.	16.	7.	3.	21.	18.	5.	5.
320.	6.	2.	0.	14.	37.	37.	0.	2.	4.	7.	8.	13.	7.	18.	9.	5.	20.	16.	5.	5.
325.	6.	3.	0.	14.	35.	36.	0.	1.	2.	4.	5.	13.	8.	18.	11.	6.	31.	16.	5.	5.
330.	7.	5.	0.	13.	33.	35.	0.	0.	1.	2.	3.	14.	8.	18.	11.	7.	30.	15.	5.	5.
335.	7.	5.	0.	12.	32.	34.	0.	0.	0.	1.	1.	14.	8.	19.	12.	8.	28.	15.	6.	5.
340.	8.	5.	0.	12.	31.	33.	0.	0.	0.	0.	0.	15.	9.	19.	13.	9.	27.	15.	6.	5.
345.	8.	6.	0.	12.	31.	33.	0.	0.	0.	0.	0.	16.	10.	19.	14.	10.	27.	15.	6.	5.
350.	8.	6.	0.	12.	31.	33.	0.	0.	0.	0.	0.	17.	11.	19.	15.	11.	26.	15.	6.	4.
355.	8.	7.	0.	12.	31.	32.	0.	0.	0.	0.	0.	18.	12.	20.	15.	12.	26.	15.	5.	3.
MAX	19.	16.	39.	38.	43.	49.	42.	44.	36.	27.	21.	28.	21.	22.	17.	14.	35.	30.	24.	19.
DEGR.	245	20	115	270	305	30	120	120	115	120	120	25	20	5	5	5	290	290	275	270

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION N02 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	1.	8.	4.	1.	0.	26.	15.	12.	12.	15.	15.	17.	18.	20.	17.	14.	0.	0.	1.	1.
5.	1.	7.	2.	1.	0.	27.	16.	12.	12.	14.	15.	18.	20.	20.	15.	11.	0.	1.	2.	2.
10.	1.	5.	1.	0.	0.	28.	17.	12.	12.	13.	14.	19.	20.	17.	11.	7.	1.	2.	4.	5.
15.	1.	3.	0.	0.	0.	29.	18.	12.	12.	12.	14.	18.	18.	13.	7.	4.	2.	5.	8.	9.
20.	1.	1.	0.	0.	0.	31.	19.	12.	11.	12.	13.	15.	13.	8.	4.	2.	4.	8.	12.	13.
25.	1.	0.	0.	0.	0.	34.	20.	12.	11.	11.	13.	10.	8.	4.	1.	1.	7.	11.	15.	16.
30.	2.	0.	0.	0.	0.	38.	21.	12.	11.	11.	13.	5.	4.	1.	0.	0.	9.	13.	17.	17.
35.	2.	0.	0.	0.	0.	42.	22.	13.	12.	11.	12.	2.	1.	1.	0.	0.	10.	13.	17.	17.
40.	2.	0.	0.	0.	0.	46.	24.	14.	12.	12.	12.	1.	0.	0.	0.	0.	11.	14.	17.	17.
45.	2.	0.	0.	0.	0.	49.	26.	16.	13.	12.	12.	0.	0.	0.	0.	0.	11.	13.	16.	16.
50.	2.	0.	0.	0.	0.	51.	28.	17.	14.	13.	12.	0.	0.	0.	0.	0.	11.	12.	15.	15.
55.	1.	0.	1.	1.	1.	52.	30.	17.	14.	13.	13.	0.	0.	0.	0.	0.	11.	11.	15.	14.
60.	1.	1.	2.	1.	1.	52.	32.	18.	15.	14.	14.	0.	0.	0.	0.	0.	11.	11.	14.	14.
65.	1.	1.	2.	2.	2.	51.	35.	20.	16.	15.	15.	0.	0.	0.	0.	0.	11.	11.	13.	13.
70.	0.	2.	3.	3.	2.	50.	39.	22.	17.	15.	15.	0.	0.	0.	0.	0.	11.	11.	13.	13.
75.	0.	2.	3.	3.	3.	49.	42.	26.	19.	16.	16.	1.	1.	0.	0.	0.	10.	11.	12.	12.
80.	0.	2.	2.	3.	2.	46.	44.	31.	21.	16.	16.	1.	1.	0.	0.	0.	10.	11.	12.	12.
85.	0.	1.	2.	2.	2.	45.	47.	37.	24.	18.	17.	1.	1.	1.	0.	0.	10.	11.	11.	12.
90.	0.	2.	2.	2.	2.	44.	48.	42.	31.	22.	19.	1.	1.	1.	0.	0.	10.	11.	11.	12.
95.	0.	3.	3.	2.	2.	43.	48.	45.	39.	30.	22.	1.	1.	1.	1.	0.	10.	11.	12.	12.
100.	1.	6.	4.	3.	2.	33.	40.	45.	46.	39.	30.	3.	1.	1.	1.	0.	10.	11.	12.	12.
105.	3.	11.	7.	4.	3.	30.	35.	39.	45.	44.	37.	5.	2.	1.	1.	1.	11.	11.	12.	12.
110.	5.	15.	11.	7.	4.	19.	22.	27.	36.	40.	43.	8.	4.	2.	1.	1.	13.	12.	13.	13.
115.	8.	19.	14.	9.	6.	9.	11.	14.	23.	30.	40.	11.	7.	4.	3.	1.	16.	14.	13.	13.
120.	9.	20.	15.	11.	8.	4.	4.	6.	11.	19.	31.	13.	9.	6.	4.	3.	18.	16.	15.	14.
125.	10.	19.	15.	12.	9.	1.	1.	2.	4.	9.	20.	13.	10.	7.	6.	4.	18.	17.	16.	15.
130.	10.	18.	14.	12.	10.	0.	0.	0.	1.	4.	11.	13.	9.	8.	6.	5.	18.	17.	18.	17.
135.	10.	17.	14.	11.	10.	0.	0.	0.	0.	1.	5.	12.	9.	8.	7.	6.	18.	17.	18.	18.
140.	9.	16.	13.	11.	9.	0.	0.	0.	0.	0.	2.	11.	9.	7.	7.	6.	18.	17.	19.	18.
145.	9.	15.	12.	10.	9.	0.	0.	0.	0.	0.	1.	11.	8.	7.	6.	6.	18.	17.	19.	19.
150.	9.	14.	12.	10.	9.	0.	0.	0.	0.	0.	0.	10.	8.	7.	6.	5.	17.	17.	19.	19.
155.	8.	14.	11.	9.	8.	0.	0.	0.	0.	0.	0.	10.	8.	6.	6.	5.	18.	18.	20.	19.
160.	8.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	6.	5.	18.	18.	19.	20.
165.	8.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	5.	5.	18.	18.	20.	21.
170.	8.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	5.	5.	19.	19.	20.	22.
175.	7.	12.	10.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	5.	5.	20.	20.	20.	23.
180.	7.	12.	10.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	5.	5.	20.	21.	21.	23.
185.	7.	12.	10.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	5.	5.	21.	22.	21.	23.
190.	7.	12.	10.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	5.	6.	20.	22.	22.	22.
195.	7.	12.	10.	9.	8.	0.	0.	0.	0.	0.	0.	9.	8.	7.	6.	8.	18.	22.	21.	20.
200.	7.	12.	11.	9.	8.	0.	0.	0.	0.	0.	0.	10.	9.	8.	9.	12.	16.	19.	19.	17.
205.	7.	12.	10.	9.	8.	0.	0.	0.	0.	0.	0.	12.	12.	11.	14.	18.	15.	16.	16.	13.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION N02 FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	7.	12.	10.	9.	8.	0.	0.	0.	0.	0.	0.	15.	16.	16.	19.	23.	13.	13.	12.	10.
215.	7.	13.	10.	9.	8.	0.	0.	0.	0.	0.	0.	18.	21.	21.	24.	26.	11.	10.	9.	7.
220.	8.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	23.	26.	25.	27.	26.	10.	8.	7.	5.
225.	8.	13.	11.	10.	8.	0.	0.	0.	0.	0.	0.	27.	29.	26.	27.	24.	8.	6.	5.	4.
230.	8.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	32.	30.	25.	25.	20.	7.	5.	4.	3.
235.	8.	14.	11.	10.	8.	0.	0.	0.	0.	0.	0.	36.	28.	23.	22.	18.	6.	4.	3.	3.
240.	9.	15.	12.	10.	9.	0.	0.	0.	0.	0.	0.	37.	25.	21.	20.	16.	5.	4.	3.	3.
245.	10.	16.	13.	11.	10.	0.	0.	0.	0.	0.	0.	37.	22.	19.	18.	15.	4.	3.	3.	2.
250.	11.	17.	14.	13.	12.	0.	0.	0.	0.	0.	0.	34.	20.	18.	16.	14.	4.	3.	3.	2.
255.	13.	20.	16.	15.	13.	0.	0.	0.	0.	0.	0.	30.	18.	17.	16.	14.	4.	3.	3.	2.
260.	15.	23.	19.	16.	13.	0.	0.	0.	0.	0.	0.	26.	17.	16.	15.	13.	4.	3.	2.	2.
265.	16.	25.	20.	16.	12.	0.	0.	0.	0.	0.	0.	23.	16.	15.	14.	12.	4.	3.	2.	1.
270.	15.	26.	20.	14.	10.	0.	0.	0.	0.	0.	0.	19.	15.	14.	13.	12.	3.	2.	1.	0.
275.	13.	25.	17.	11.	8.	1.	0.	0.	0.	0.	0.	17.	14.	14.	12.	11.	3.	2.	1.	0.
280.	10.	21.	14.	9.	6.	1.	0.	0.	0.	0.	0.	16.	13.	13.	11.	11.	2.	1.	0.	0.
285.	8.	18.	11.	7.	5.	4.	1.	0.	0.	0.	0.	15.	12.	12.	11.	11.	1.	0.	0.	0.
290.	6.	14.	8.	6.	4.	8.	2.	0.	0.	0.	0.	14.	12.	11.	11.	11.	1.	0.	0.	0.
295.	5.	11.	6.	5.	4.	14.	5.	1.	0.	0.	0.	13.	11.	11.	11.	11.	0.	0.	0.	0.
300.	5.	9.	5.	4.	4.	21.	10.	3.	1.	0.	0.	12.	11.	11.	11.	11.	0.	0.	0.	0.
305.	4.	7.	5.	4.	4.	26.	16.	6.	2.	1.	0.	11.	11.	11.	11.	11.	0.	0.	0.	0.
310.	4.	6.	4.	4.	4.	30.	21.	11.	4.	1.	0.	11.	11.	11.	11.	11.	0.	0.	0.	0.
315.	5.	6.	4.	4.	4.	30.	23.	16.	8.	3.	0.	11.	11.	12.	12.	12.	0.	0.	0.	0.
320.	4.	5.	4.	4.	4.	28.	22.	20.	12.	6.	1.	12.	11.	12.	12.	12.	0.	0.	0.	0.
325.	5.	6.	5.	4.	4.	26.	20.	22.	16.	10.	3.	12.	11.	12.	12.	12.	0.	0.	0.	0.
330.	5.	6.	5.	5.	4.	25.	16.	20.	19.	14.	6.	12.	11.	12.	13.	13.	0.	0.	0.	0.
335.	5.	6.	5.	5.	4.	24.	15.	18.	19.	17.	9.	13.	12.	13.	13.	13.	0.	0.	0.	0.
340.	4.	6.	5.	5.	3.	24.	14.	16.	17.	19.	12.	13.	12.	14.	14.	14.	0.	0.	0.	0.
345.	3.	7.	6.	5.	3.	24.	13.	14.	15.	19.	14.	14.	12.	15.	15.	15.	0.	0.	0.	0.
350.	2.	7.	6.	4.	2.	25.	14.	13.	14.	18.	15.	14.	14.	17.	16.	15.	0.	0.	0.	0.
355.	2.	8.	5.	3.	1.	25.	14.	13.	13.	16.	16.	15.	15.	19.	17.	15.	0.	0.	0.	0.
MAX	16.	26.	20.	16.	13.	52.	48.	45.	46.	44.	43.	37.	30.	26.	27.	26.	21.	22.	22.	23.
DEGR.	265	270	265	260	255	55	90	95	100	105	110	240	230	225	225	220	185	190	190	180

THE HIGHEST CONCENTRATION OF 52. ug/m**3 OCCURRED AT RECEPTOR REC26.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION N02 FRID

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The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	683.	.3	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	683.	.3	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	683.	.3	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	683.	.3	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	73.	.3	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	73.	.3	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	73.	.3	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	73.	.3	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	73.	.3	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	73.	.3	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	56.	.3	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	56.	.3	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	56.	.3	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	56.	.3	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	56.	.3	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	790.	.3	.0	42.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	790.	.3	.0	42.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	790.	.3	.0	42.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	790.	.3	.0	42.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	3.	.3	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	3.	.3	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	3.	.3	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	663.	.3	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	663.	.3	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	663.	.3	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	663.	.3	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	663.	.3	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	790.	.3	.0	42.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	790.	.3	.0	42.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	790.	.3	.0	42.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	790.	.3	.0	42.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.3	.0	42.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.3	.0	42.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.3	.0	42.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.3	.0	42.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.3	.0	42.0		
37. Future 173 WB Ramp A	********	********	********	********	63.	211.	AG	768.	.3	.0	30.0		
38. Future 173 WB Ramp B	********	********	********	********	60.	261.	AG	768.	.3	.0	30.0		
39. Future 173 WB Ramp C	********	********	********	********	72.	273.	AG	768.	.3	.0	30.0		
40. Route 173 Queue Futu	********	********	********	********	5228.	110.	AG	4.	100.0	.0	12.0	3.13	265.6
41. Route 173 Queue Futu	********	********	********	********	5228.	103.	AG	4.	100.0	.0	12.0	3.13	265.6
42. CR 161 SB Queue	********	********	********	********	12.	212.	AG	1.	100.0	.0	12.0	.10	.6

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION N02 FRID

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ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
40. Route 173 Queue Futu	627	200.	1.50
41. Route 173 Queue Futu	627	200.	1.50
42. CR 161 SB Queue	21	200.	1.50

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION N02 FRID

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	8.	9.	0.	15.	34.	35.	0.	0.	0.	0.	0.	19.	14.	22.	17.	14.	29.	28.	4.	2.
5.	5.	10.	0.	16.	35.	37.	0.	0.	0.	0.	0.	21.	15.	23.	18.	15.	28.	26.	3.	1.
10.	3.	12.	1.	17.	35.	39.	0.	0.	0.	0.	0.	23.	18.	23.	18.	15.	27.	24.	2.	1.
15.	1.	15.	2.	15.	33.	44.	0.	0.	0.	0.	0.	27.	21.	21.	17.	14.	24.	23.	1.	1.
20.	0.	17.	4.	11.	28.	50.	1.	0.	0.	0.	0.	30.	23.	18.	14.	11.	22.	22.	1.	1.
25.	0.	16.	7.	7.	24.	54.	1.	0.	0.	0.	0.	31.	21.	14.	10.	8.	21.	22.	1.	1.
30.	0.	13.	10.	3.	20.	55.	3.	1.	0.	0.	0.	27.	17.	11.	8.	7.	20.	23.	2.	1.
35.	0.	10.	12.	1.	19.	53.	4.	2.	1.	0.	0.	21.	13.	10.	7.	6.	20.	23.	2.	1.
40.	0.	8.	14.	0.	19.	48.	6.	3.	1.	0.	0.	16.	9.	10.	8.	6.	21.	23.	2.	2.
45.	0.	6.	15.	0.	19.	42.	7.	4.	2.	1.	0.	13.	8.	10.	8.	6.	22.	24.	2.	2.
50.	0.	6.	15.	0.	20.	38.	7.	5.	3.	2.	1.	11.	8.	11.	8.	6.	23.	25.	2.	1.
55.	0.	6.	14.	0.	21.	34.	7.	5.	4.	3.	1.	11.	8.	11.	8.	7.	25.	26.	1.	1.
60.	0.	6.	14.	0.	23.	32.	7.	5.	4.	3.	2.	11.	8.	11.	8.	7.	26.	27.	1.	1.
65.	0.	7.	15.	1.	25.	30.	7.	6.	4.	3.	3.	12.	9.	12.	8.	7.	28.	29.	1.	1.
70.	0.	7.	15.	1.	27.	30.	7.	5.	4.	4.	3.	12.	9.	12.	8.	7.	30.	31.	0.	0.
75.	1.	7.	16.	1.	29.	30.	7.	5.	4.	4.	3.	12.	9.	12.	9.	7.	32.	34.	0.	0.
80.	1.	8.	17.	1.	32.	30.	8.	6.	4.	4.	3.	13.	10.	13.	10.	8.	35.	38.	0.	0.
85.	1.	8.	17.	1.	38.	31.	9.	6.	5.	4.	3.	14.	11.	14.	11.	9.	42.	45.	0.	0.
90.	1.	9.	18.	2.	46.	34.	10.	8.	5.	4.	3.	16.	12.	16.	12.	10.	50.	54.	1.	1.
95.	1.	9.	21.	6.	56.	37.	15.	13.	9.	6.	5.	17.	12.	17.	12.	10.	62.	50.	5.	2.
100.	3.	8.	28.	13.	67.	38.	22.	21.	16.	11.	8.	17.	12.	17.	12.	9.	72.	69.	11.	6.
105.	6.	5.	36.	22.	73.	34.	32.	33.	26.	19.	13.	13.	9.	13.	9.	6.	78.	82.	19.	12.
110.	9.	2.	42.	28.	72.	26.	40.	42.	35.	26.	19.	8.	5.	8.	5.	3.	75.	78.	25.	17.
115.	11.	1.	43.	30.	63.	14.	44.	47.	39.	30.	22.	3.	2.	4.	2.	1.	64.	66.	26.	18.
120.	12.	0.	41.	28.	51.	6.	44.	46.	38.	29.	23.	1.	0.	1.	0.	0.	51.	72.	25.	18.
125.	11.	0.	38.	25.	39.	2.	43.	42.	34.	27.	21.	0.	0.	0.	0.	0.	39.	58.	22.	16.
130.	10.	0.	36.	23.	30.	1.	41.	38.	29.	24.	19.	0.	0.	0.	0.	0.	30.	47.	20.	14.
135.	9.	0.	35.	21.	24.	0.	40.	34.	24.	22.	18.	0.	0.	0.	0.	0.	24.	40.	18.	13.
140.	9.	0.	34.	20.	19.	0.	38.	30.	21.	20.	17.	0.	0.	0.	0.	0.	19.	34.	17.	12.
145.	8.	0.	34.	19.	16.	0.	37.	28.	19.	20.	16.	0.	0.	0.	0.	0.	16.	31.	16.	12.
150.	8.	0.	33.	18.	15.	0.	35.	25.	17.	19.	16.	0.	0.	0.	0.	0.	15.	28.	15.	11.
155.	8.	0.	33.	17.	13.	0.	33.	24.	16.	19.	16.	0.	0.	0.	0.	0.	13.	25.	15.	11.
160.	7.	0.	33.	17.	12.	0.	30.	22.	15.	18.	16.	0.	0.	0.	0.	0.	12.	24.	14.	10.
165.	7.	0.	32.	16.	11.	0.	28.	20.	15.	17.	16.	0.	0.	0.	0.	0.	11.	23.	14.	10.
170.	7.	0.	32.	16.	10.	0.	26.	19.	15.	16.	16.	0.	0.	0.	0.	0.	10.	22.	14.	10.
175.	7.	0.	31.	15.	10.	0.	24.	17.	15.	16.	15.	0.	0.	0.	0.	0.	10.	22.	13.	10.
180.	7.	0.	31.	15.	10.	0.	22.	16.	14.	15.	15.	0.	0.	0.	0.	0.	10.	21.	13.	10.
185.	7.	0.	31.	15.	9.	0.	21.	14.	14.	15.	15.	0.	0.	0.	0.	0.	9.	21.	13.	10.
190.	7.	0.	31.	15.	9.	0.	20.	14.	14.	14.	15.	0.	0.	0.	0.	0.	9.	21.	13.	10.
195.	7.	0.	31.	15.	9.	0.	19.	13.	13.	14.	15.	0.	0.	0.	0.	0.	9.	21.	13.	10.
200.	7.	0.	31.	15.	9.	0.	19.	13.	13.	13.	14.	0.	0.	0.	0.	0.	9.	21.	13.	10.
205.	7.	0.	31.	15.	9.	0.	19.	13.	13.	13.	14.	0.	0.	0.	0.	0.	9.	21.	13.	10.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION N02 FRID

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	7.	0.	32.	15.	9.	0.	18.	13.	13.	13.	14.	0.	0.	0.	0.	0.	9.	21.	13.	10.
215. *	7.	0.	32.	15.	9.	0.	19.	13.	13.	14.	13.	0.	0.	0.	0.	0.	9.	21.	13.	10.
220. *	8.	0.	32.	16.	10.	0.	19.	13.	13.	14.	13.	0.	0.	0.	0.	0.	10.	22.	14.	10.
225. *	10.	0.	32.	18.	10.	0.	19.	13.	13.	13.	13.	0.	0.	0.	0.	0.	10.	22.	14.	10.
230. *	13.	0.	31.	19.	10.	0.	20.	14.	13.	13.	13.	0.	0.	0.	0.	0.	10.	23.	14.	10.
235. *	17.	0.	31.	22.	11.	0.	19.	14.	13.	13.	13.	0.	0.	0.	0.	0.	11.	24.	15.	11.
240. *	19.	0.	30.	25.	12.	0.	19.	14.	13.	13.	13.	0.	0.	0.	0.	0.	12.	26.	15.	11.
245. *	20.	0.	29.	29.	13.	0.	18.	15.	14.	14.	13.	0.	0.	0.	0.	0.	13.	28.	16.	12.
250. *	19.	0.	27.	33.	15.	0.	18.	15.	14.	14.	13.	0.	0.	0.	0.	0.	15.	31.	17.	13.
255. *	17.	0.	25.	36.	17.	0.	17.	14.	15.	15.	13.	0.	0.	0.	0.	0.	17.	34.	18.	15.
260. *	14.	0.	22.	40.	20.	0.	16.	15.	15.	15.	13.	0.	0.	0.	0.	0.	20.	38.	21.	17.
265. *	12.	0.	20.	42.	24.	0.	15.	15.	16.	15.	14.	0.	0.	0.	0.	0.	25.	45.	24.	20.
270. *	11.	0.	17.	44.	31.	0.	14.	15.	17.	16.	14.	0.	0.	0.	0.	0.	34.	54.	27.	22.
275. *	10.	0.	14.	42.	39.	1.	13.	15.	17.	16.	15.	0.	0.	0.	0.	0.	46.	65.	28.	21.
280. *	9.	0.	11.	37.	50.	3.	12.	15.	18.	16.	16.	0.	0.	0.	0.	0.	63.	75.	26.	17.
285. *	8.	0.	9.	32.	62.	9.	11.	15.	19.	16.	16.	0.	0.	0.	0.	0.	79.	85.	22.	13.
290. *	7.	0.	8.	27.	72.	17.	10.	14.	18.	16.	17.	0.	0.	1.	0.	0.	88.	92.	16.	9.
295. *	7.	0.	6.	22.	78.	28.	9.	13.	17.	16.	18.	1.	0.	3.	0.	0.	88.	89.	12.	7.
300. *	6.	0.	4.	20.	78.	37.	7.	11.	16.	16.	18.	3.	0.	6.	1.	0.	80.	79.	8.	6.
305. *	6.	0.	3.	18.	72.	44.	5.	9.	14.	15.	17.	6.	1.	11.	3.	1.	68.	66.	6.	5.
310. *	6.	0.	1.	16.	62.	46.	3.	6.	11.	14.	15.	10.	3.	15.	6.	2.	56.	55.	6.	5.
315. *	7.	1.	0.	16.	53.	45.	1.	3.	7.	11.	12.	13.	5.	18.	9.	3.	47.	46.	5.	5.
320. *	7.	2.	0.	15.	46.	44.	0.	2.	4.	7.	8.	15.	8.	19.	11.	6.	41.	40.	5.	5.
325. *	7.	4.	0.	14.	42.	42.	0.	1.	2.	4.	5.	15.	9.	19.	12.	7.	38.	37.	5.	5.
330. *	7.	5.	0.	14.	39.	40.	0.	0.	1.	2.	3.	15.	9.	20.	12.	8.	35.	34.	6.	5.
335. *	8.	6.	0.	14.	36.	39.	0.	0.	0.	1.	1.	16.	9.	20.	13.	8.	32.	32.	6.	6.
340. *	9.	6.	0.	13.	35.	38.	0.	0.	0.	0.	0.	16.	10.	20.	14.	9.	30.	30.	6.	6.
345. *	9.	6.	0.	13.	35.	37.	0.	0.	0.	0.	0.	17.	10.	20.	14.	10.	29.	30.	6.	6.
350. *	10.	6.	0.	13.	34.	36.	0.	0.	0.	0.	0.	18.	12.	20.	15.	12.	29.	30.	7.	4.
355. *	9.	7.	0.	14.	34.	35.	0.	0.	0.	0.	0.	19.	13.	21.	16.	13.	29.	29.	6.	3.
MAX *	20.	17.	43.	44.	78.	55.	44.	47.	39.	30.	23.	31.	23.	23.	18.	15.	88.	92.	28.	22.
DEGR. *	245	20	115	270	295	30	120	115	115	115	120	25	20	10	10	10	295	290	275	270

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION N02 FRID

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	1.	9.	4.	2.	0.	29.	18.	14.	14.	18.	18.	19.	20.	24.	20.	17.	0.	0.	1.	1.
5.	1.	8.	3.	1.	0.	30.	19.	14.	14.	16.	18.	21.	23.	24.	18.	13.	0.	1.	2.	2.
10.	1.	6.	1.	0.	0.	31.	20.	14.	14.	15.	17.	22.	24.	21.	14.	9.	1.	2.	4.	5.
15.	1.	3.	0.	0.	0.	32.	21.	14.	14.	14.	16.	21.	21.	16.	9.	5.	2.	5.	8.	8.
20.	1.	1.	0.	0.	0.	35.	21.	14.	13.	14.	16.	17.	16.	10.	5.	2.	5.	8.	12.	12.
25.	1.	0.	0.	0.	0.	38.	22.	13.	13.	13.	15.	12.	10.	5.	2.	1.	7.	11.	15.	16.
30.	2.	0.	0.	0.	0.	42.	23.	14.	13.	13.	15.	6.	5.	2.	1.	0.	9.	13.	17.	18.
35.	2.	0.	0.	0.	0.	46.	25.	15.	14.	13.	14.	3.	2.	1.	0.	0.	11.	14.	18.	18.
40.	2.	0.	0.	0.	0.	49.	27.	16.	14.	14.	14.	1.	1.	0.	0.	0.	12.	14.	18.	17.
45.	2.	0.	0.	0.	0.	52.	29.	18.	15.	14.	14.	0.	0.	0.	0.	0.	12.	14.	17.	16.
50.	1.	0.	0.	0.	0.	55.	31.	19.	16.	15.	15.	0.	0.	0.	0.	0.	12.	13.	16.	16.
55.	1.	0.	1.	1.	1.	56.	32.	20.	17.	16.	16.	0.	0.	0.	0.	0.	12.	13.	15.	15.
60.	1.	1.	2.	1.	1.	56.	35.	21.	17.	17.	17.	0.	0.	0.	0.	0.	12.	12.	15.	14.
65.	1.	1.	2.	2.	2.	56.	38.	23.	18.	18.	17.	0.	0.	0.	0.	0.	12.	12.	14.	14.
70.	0.	2.	3.	2.	2.	55.	42.	26.	20.	18.	18.	0.	0.	0.	0.	0.	12.	11.	14.	13.
75.	0.	2.	3.	3.	2.	54.	45.	30.	22.	18.	18.	1.	0.	0.	0.	0.	11.	12.	13.	13.
80.	0.	2.	2.	2.	2.	52.	48.	36.	24.	19.	19.	1.	1.	0.	0.	0.	11.	12.	13.	13.
85.	0.	1.	2.	2.	2.	51.	51.	41.	29.	22.	20.	1.	1.	1.	0.	0.	11.	12.	12.	13.
90.	0.	2.	2.	2.	2.	50.	52.	47.	37.	26.	21.	1.	1.	1.	0.	0.	11.	12.	12.	13.
95.	1.	5.	4.	3.	2.	50.	52.	51.	47.	34.	26.	2.	1.	1.	1.	0.	11.	12.	13.	13.
100.	4.	10.	7.	5.	4.	47.	49.	51.	55.	46.	34.	5.	3.	2.	2.	1.	13.	13.	14.	13.
105.	8.	17.	13.	9.	7.	39.	40.	44.	54.	53.	45.	10.	6.	4.	3.	3.	16.	15.	15.	15.
110.	12.	22.	17.	13.	10.	28.	27.	30.	42.	50.	52.	14.	10.	7.	5.	5.	19.	17.	17.	17.
115.	14.	24.	19.	15.	12.	15.	13.	15.	31.	40.	50.	16.	12.	9.	8.	6.	21.	20.	19.	18.
120.	14.	23.	18.	15.	12.	6.	5.	5.	11.	26.	40.	16.	12.	10.	9.	7.	21.	20.	20.	19.
125.	13.	21.	17.	14.	12.	2.	1.	1.	4.	14.	27.	14.	11.	9.	8.	7.	21.	20.	20.	19.
130.	11.	19.	15.	12.	11.	0.	0.	0.	1.	6.	16.	13.	10.	9.	8.	7.	20.	19.	19.	19.
135.	10.	17.	14.	12.	10.	0.	0.	0.	0.	2.	8.	12.	9.	8.	7.	6.	19.	18.	19.	19.
140.	10.	16.	13.	11.	9.	0.	0.	0.	0.	1.	3.	11.	9.	7.	7.	6.	19.	18.	20.	19.
145.	9.	15.	13.	10.	9.	0.	0.	0.	0.	0.	1.	11.	8.	7.	6.	6.	19.	18.	20.	20.
150.	9.	15.	12.	10.	8.	0.	0.	0.	0.	0.	0.	10.	8.	7.	6.	5.	18.	18.	20.	20.
155.	8.	14.	11.	10.	8.	0.	0.	0.	0.	0.	0.	10.	8.	6.	6.	5.	19.	19.	20.	20.
160.	8.	14.	11.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	6.	5.	19.	19.	20.	21.
165.	8.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	5.	5.	19.	19.	21.	22.
170.	8.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	5.	5.	20.	20.	21.	23.
175.	8.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	5.	5.	21.	21.	21.	23.
180.	7.	13.	10.	9.	7.	0.	0.	0.	0.	0.	0.	9.	7.	6.	5.	5.	21.	22.	22.	24.
185.	7.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	5.	5.	21.	23.	22.	23.
190.	7.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	9.	7.	6.	5.	6.	20.	23.	23.	23.
195.	7.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	10.	8.	7.	7.	9.	18.	22.	22.	21.
200.	7.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	11.	10.	9.	10.	14.	16.	20.	20.	18.
205.	7.	13.	10.	9.	8.	0.	0.	0.	0.	0.	0.	13.	13.	13.	15.	21.	15.	17.	16.	14.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION N02 FRID

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	7.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	17.	18.	18.	22.	27.	13.	13.	13.	10.
215.	8.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	21.	24.	24.	28.	31.	12.	11.	9.	7.
220.	8.	13.	11.	9.	8.	0.	0.	0.	0.	0.	0.	26.	28.	27.	31.	30.	10.	8.	7.	5.
225.	8.	14.	11.	9.	8.	0.	0.	0.	0.	0.	0.	30.	31.	29.	31.	27.	9.	7.	6.	4.
230.	8.	14.	11.	9.	8.	0.	0.	0.	0.	0.	0.	34.	32.	28.	29.	23.	8.	6.	4.	3.
235.	8.	15.	11.	10.	8.	0.	0.	0.	0.	0.	0.	37.	31.	26.	25.	20.	7.	5.	4.	3.
240.	9.	15.	12.	10.	9.	0.	0.	0.	0.	0.	0.	39.	28.	24.	23.	18.	6.	4.	3.	3.
245.	10.	17.	13.	11.	11.	0.	0.	0.	0.	0.	0.	39.	25.	22.	21.	17.	5.	4.	3.	3.
250.	11.	19.	15.	14.	12.	0.	0.	0.	0.	0.	0.	36.	22.	21.	19.	16.	5.	4.	3.	3.
255.	14.	22.	17.	16.	14.	0.	0.	0.	0.	0.	0.	33.	20.	19.	18.	16.	4.	4.	3.	2.
260.	16.	26.	20.	17.	14.	0.	0.	0.	0.	0.	0.	29.	19.	19.	17.	15.	4.	3.	3.	2.
265.	17.	28.	22.	17.	13.	0.	0.	0.	0.	0.	0.	25.	18.	18.	16.	15.	4.	3.	2.	1.
270.	16.	30.	22.	15.	11.	0.	0.	0.	0.	0.	0.	22.	17.	17.	15.	14.	4.	3.	1.	1.
275.	14.	28.	19.	12.	8.	1.	0.	0.	0.	0.	0.	19.	16.	16.	14.	13.	3.	2.	1.	0.
280.	11.	24.	15.	10.	7.	2.	0.	0.	0.	0.	0.	18.	15.	15.	13.	13.	3.	1.	0.	0.
285.	8.	19.	12.	7.	6.	5.	1.	0.	0.	0.	0.	17.	14.	13.	13.	12.	2.	0.	0.	0.
290.	6.	15.	9.	6.	5.	11.	3.	0.	0.	0.	0.	16.	13.	13.	13.	12.	1.	0.	0.	0.
295.	5.	12.	7.	5.	4.	19.	7.	1.	0.	0.	0.	15.	13.	13.	13.	12.	0.	0.	0.	0.
300.	5.	9.	6.	5.	4.	28.	13.	4.	1.	0.	0.	14.	13.	13.	13.	13.	0.	0.	0.	0.
305.	5.	8.	5.	4.	4.	34.	20.	8.	3.	1.	0.	13.	12.	13.	13.	13.	0.	0.	0.	0.
310.	5.	7.	5.	4.	4.	38.	25.	14.	6.	2.	0.	13.	12.	13.	13.	13.	0.	0.	0.	0.
315.	5.	6.	5.	4.	4.	37.	27.	20.	10.	4.	1.	13.	13.	13.	14.	14.	0.	0.	0.	0.
320.	5.	6.	5.	5.	4.	34.	26.	25.	16.	8.	2.	13.	13.	14.	14.	14.	0.	0.	0.	0.
325.	5.	6.	5.	5.	5.	31.	22.	26.	20.	13.	4.	14.	13.	14.	14.	15.	0.	0.	0.	0.
330.	5.	7.	5.	5.	5.	29.	19.	24.	22.	19.	8.	14.	13.	15.	15.	15.	0.	0.	0.	0.
335.	5.	7.	6.	5.	5.	28.	17.	21.	22.	22.	12.	14.	13.	15.	15.	16.	0.	0.	0.	0.
340.	5.	7.	6.	6.	4.	27.	16.	18.	20.	24.	16.	15.	14.	16.	16.	17.	0.	0.	0.	0.
345.	4.	7.	7.	5.	3.	27.	16.	16.	18.	23.	18.	16.	14.	17.	17.	18.	0.	0.	0.	0.
350.	2.	8.	7.	4.	2.	28.	17.	16.	16.	21.	19.	16.	15.	19.	19.	18.	0.	0.	0.	0.
355.	2.	9.	6.	3.	1.	28.	17.	15.	15.	19.	19.	18.	17.	21.	20.	19.	0.	0.	0.	0.
MAX	17.	30.	22.	17.	14.	56.	52.	51.	55.	53.	52.	39.	32.	29.	31.	31.	21.	23.	23.	24.
DEGR.	265	270	265	260	260	60	95	95	100	105	110	240	230	225	225	215	115	190	190	180

THE HIGHEST CONCENTRATION OF 92. ug/m**3 OCCURRED AT RECEPTOR REC18.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 PM2.5 EXISTING 1-HR FRIDAY PM

DATE : 8/16/10
TIME : 15:22: 1

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	441.	0.0	0.0	43.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	163.	0.0	0.0	43.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	409.	0.0	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	38.	0.0	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	38.	0.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1600.0	*	122.	180.	AG	371.	0.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 PM2.5 EXISTING 1-HR FRIDAY PM

DATE : 8/16/10
TIME : 15:22: 1

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 PM2.5 EXISTING 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.
10.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	1.	1.	2.	1.	1.	0.
15.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	2.	1.	1.	0.
20.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.
25.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
30.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
35.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
40.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.
45.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	1.
50.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.
55.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.
60.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
65.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
70.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
75.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
80.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
85.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
90.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
95.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
100.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
105.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
110.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
115.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
120.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
125.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
130.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
135.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
140.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
145.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
150.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
155.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
160.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
165.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
170.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
175.	0.	0.	1.	1.	1.	2.	0.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	0.	0.	0.
180.	0.	0.	0.	1.	1.	2.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
185.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	0.	0.	0.
190.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 PM2.5 EXISTING 1-HR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	0.	0.	0.	0.	1.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
220.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
225.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
275.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	1.	0.	0.	0.
355.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
MAX	1.	1.	1.	1.	1.	2.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.
DEGR.	35	35	40	160	170	175	215	195	190	195	195	340	340	345	10	10	10	25	30	25

THE HIGHEST CONCENTRATION OF 2. ug/m**3 OCCURRED AT RECEPTOR REC17.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 NO-BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:54:13

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2	* LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	636.0	1668.0	1136.0	2534.0	1000.	30.	AG	596.	0.0	0.0	43.7		
2. RTE 161 S FREE FLOW	636.0	1668.0	136.0	802.0	1000.	210.	AG	311.	0.0	0.0	43.7		
3. RTE 17 OFF FRE FLOW	684.0	1746.0	684.0	746.0	1000.	180.	AG	506.	0.0	0.0	31.7		
4. RT 17 OFF LT FRE FL	636.6	1668.9	684.0	1641.9	55.	120.	AG	42.	0.0	0.0	31.7		
5. RT 17 OFF LT QUEUE	651.0	1666.5	684.0	1647.0	38.	121.	AG	42.	0.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	684.0	1722.0	684.0	1600.0	122.	180.	AG	464.	0.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 NO-BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:54:13

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 NO-BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
15.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
20.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
25.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
30.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
35.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
40.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.
45.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
50.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
55.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
60.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
150.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
155.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
160.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
165.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
170.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
175.	0.	0.	0.	1.	1.	1.	0.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
180.	0.	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	0.	0.	0.
185.	0.	0.	0.	0.	1.	1.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 NO-BUILD 1-HR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
220.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
225.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
275.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
MAX	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
DEGR.	45	40	40	155	165	175	210	210	190	195	195	345	340	350	10	10	15	30	30	25

THE HIGHEST CONCENTRATION OF 1. ug/m**3 OCCURRED AT RECEPTOR REC16.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 BUILD 1-HOUR FRIDAY PM

DATE : 9/10/10
TIME : 10:54:25

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	1325.	0.0	0.0	67.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	1196.	0.0	0.0	67.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	1030.	0.0	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	42.	0.0	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	42.	0.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1400.0	*	322.	180.	AG	988.	0.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 BUILD 1-HOUR FRIDAY PM

DATE : 9/10/10
TIME : 10:54:25

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0
21. RECEPTOR NO. 7-21	668.0	1533.0	6.0
22. RECEPTOR NO. 7-22	700.0	1533.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 BUILD 1-HOUR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.
5.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.
10.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	3.	2.	1.	1.	1.
15.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	3.	3.	3.	2.	2.	1.
20.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	3.	2.	2.	2.
25.	1.	1.	1.	1.	1.	1.	2.	2.	1.	1.	1.	1.	1.	0.	2.	2.	2.	2.	2.	2.
30.	2.	1.	2.	2.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	2.	2.	2.	2.	2.	2.
35.	2.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.
40.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	2.
45.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
50.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
55.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
60.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
65.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
70.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
75.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
80.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
85.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
90.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
95.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
100.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
105.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
110.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
115.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
120.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
125.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
130.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
135.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
140.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
145.	1.	1.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
150.	1.	1.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	1.
155.	1.	1.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	1.
160.	1.	1.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	1.
165.	1.	1.	2.	2.	2.	2.	0.	1.	0.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	1.
170.	1.	1.	1.	2.	2.	2.	0.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	0.
175.	1.	1.	1.	2.	2.	3.	1.	2.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	0.
180.	1.	1.	1.	2.	2.	3.	1.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.
185.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.
190.	1.	1.	1.	1.	1.	2.	2.	3.	2.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.
195.	1.	1.	1.	1.	1.	2.	2.	3.	2.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	1.
200.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	2.	0.	0.	0.	1.	1.	1.
205.	1.	1.	1.	2.	2.	2.	2.	3.	2.	2.	2.	2.	2.	2.	0.	0.	0.	1.	1.	1.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 BUILD 1-HOUR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20	REC21	REC22
210.	1.	1.	1.	1.	2.	2.	2.	3.	2.	2.	2.	2.	2.	2.	0.	0.	1.	1.	1.	1.		
215.	1.	1.	1.	1.	1.	1.	2.	3.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
220.	1.	1.	1.	1.	1.	1.	2.	3.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
225.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
230.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.	2.	2.	0.	1.	1.	1.	1.	1.		
235.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.	2.	2.	0.	1.	1.	1.	1.	1.		
240.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	2.	1.	1.	0.	0.	1.	1.	1.	1.		
245.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	1.	1.	1.	0.	0.	1.	1.	1.	1.		
250.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	1.	1.	1.	1.		
255.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
260.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
265.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	1.	1.	0.		
270.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	1.	0.	0.		
275.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	1.	0.	0.		
280.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
285.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
290.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
295.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
300.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
305.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.		
310.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.		
315.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	2.	2.	0.	0.	0.	1.	0.	0.		
320.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	0.	1.	1.	1.	0.	0.		
325.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	0.	1.	1.	1.	0.	0.		
330.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.		
335.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	0.		
340.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	0.		
345.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
350.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
355.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	2.	1.	2.	1.	1.	1.		
MAX	2.	2.	2.	2.	2.	3.	2.	3.	2.	2.	2.	2.	2.	2.	3.	3.	3.	2.	2.	2.		
DEGR.	35	45	35	170	175	175	210	215	210	190	190	190	190	345	15	10	15	25	25	30		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 BUILD 1-HOUR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
0.	2.	2.
5.	2.	2.
10.	3.	1.
15.	3.	1.
20.	2.	1.
25.	2.	0.
30.	2.	0.
35.	2.	0.
40.	1.	0.
45.	1.	0.
50.	1.	0.
55.	1.	0.
60.	1.	0.
65.	1.	0.
70.	1.	0.
75.	1.	0.
80.	1.	0.
85.	1.	0.
90.	1.	0.
95.	1.	0.
100.	1.	0.
105.	1.	0.
110.	1.	0.
115.	1.	0.
120.	1.	0.
125.	1.	0.
130.	1.	0.
135.	1.	0.
140.	1.	0.
145.	1.	0.
150.	2.	0.
155.	2.	0.
160.	2.	0.
165.	2.	0.
170.	2.	1.
175.	2.	1.
180.	2.	2.
185.	1.	2.
190.	1.	2.
195.	0.	2.
200.	0.	2.
205.	0.	2.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 BUILD 1-HOUR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
210.	0.	2.
215.	0.	2.
220.	0.	2.
225.	1.	2.
230.	0.	2.
235.	0.	2.
240.	0.	1.
245.	0.	1.
250.	0.	1.
255.	0.	1.
260.	0.	1.
265.	0.	1.
270.	0.	1.
275.	0.	1.
280.	0.	1.
285.	0.	1.
290.	0.	1.
295.	0.	1.
300.	0.	1.
305.	0.	2.
310.	0.	2.
315.	0.	2.
320.	0.	2.
325.	0.	2.
330.	0.	2.
335.	1.	2.
340.	1.	2.
345.	1.	2.
350.	1.	2.
355.	2.	2.
MAX	3.	2.
DEGR.	10	345

THE HIGHEST CONCENTRATION OF 3. ug/m**3 OCCURRED AT RECEPTOR REC8 .

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 CUMULATIVE BUILD 1-HR FRIDAY

DATE : 9/10/10
TIME : 10:54:37

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2	* LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	636.0	1668.0	1136.0	2534.0	1000.	30.	AG	1588.	0.0	0.0	67.7		
2. RTE 161 S FREE FLOW	636.0	1668.0	136.0	802.0	1000.	210.	AG	1393.	0.0	0.0	67.7		
3. RTE 17 OFF FRE FLOW	684.0	1746.0	684.0	746.0	1000.	180.	AG	1001.	0.0	0.0	31.7		
4. RT 17 OFF LT FRE FL	636.6	1668.9	684.0	1641.9	55.	120.	AG	42.	0.0	0.0	31.7		
5. RT 17 OFF LT QUEUE	651.0	1666.5	684.0	1647.0	38.	121.	AG	42.	0.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	684.0	1722.0	684.0	1400.0	322.	180.	AG	959.	0.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 CUMULATIVE BUILD 1-HR FRIDAY

DATE : 9/10/10
TIME : 10:54:37

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0
21. RECEPTOR NO. 7-21	668.0	1533.0	6.0
22. RECEPTOR NO. 7-22	700.0	1533.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 CUMULATIVE BUILD 1-HR FRIDAY

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.
5.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.
10.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	3.	2.	2.	2.	1.	1.
15.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.	1.	1.	3.	3.	3.	2.	2.	2.
20.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.	1.	1.	2.	2.	3.	2.	2.	2.
25.	1.	1.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.
30.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.	2.	2.	2.	2.	2.	2.
35.	2.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.
40.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.
45.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	1.
50.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
55.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
60.	1.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
65.	1.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
70.	1.	1.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
75.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
80.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
85.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
90.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
95.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
100.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
105.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
110.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
115.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
120.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
125.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
130.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
135.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
140.	1.	1.	1.	1.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
145.	1.	1.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
150.	1.	1.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	1.
155.	1.	2.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	1.
160.	1.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	1.
165.	1.	1.	2.	2.	2.	2.	0.	1.	0.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	1.
170.	1.	1.	2.	2.	2.	2.	0.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	0.
175.	1.	1.	2.	2.	2.	3.	1.	2.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	0.
180.	1.	1.	1.	2.	2.	3.	1.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.
185.	1.	1.	1.	2.	2.	3.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.
190.	1.	1.	1.	1.	2.	2.	2.	3.	2.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.
195.	1.	1.	1.	1.	2.	2.	2.	3.	2.	2.	2.	2.	2.	2.	0.	0.	0.	1.	1.	1.
200.	2.	2.	2.	2.	2.	2.	2.	3.	2.	2.	2.	2.	2.	2.	0.	0.	0.	1.	1.	1.
205.	2.	2.	2.	2.	2.	2.	3.	3.	2.	2.	2.	2.	2.	2.	0.	0.	0.	1.	1.	1.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 CUMULATIVE BUILD 1-HR FRIDAY

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20	REC21	REC22
210. *	2.	2.	2.	2.	2.	2.	3.	3.	2.	2.	2.	2.	2.	2.	0.	1.	1.	2.	2.	2.		
215. *	1.	1.	1.	1.	1.	2.	2.	3.	3.	2.	2.	2.	2.	2.	1.	1.	1.	2.	2.	2.		
220. *	1.	1.	1.	1.	1.	1.	2.	3.	3.	2.	2.	2.	2.	2.	1.	1.	1.	2.	2.	2.		
225. *	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
230. *	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
235. *	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
240. *	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	2.	2.	1.	0.	1.	1.	1.	1.	1.		
245. *	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	2.	2.	1.	0.	1.	1.	1.	1.	1.		
250. *	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	2.	1.	1.	0.	1.	1.	1.	1.	1.		
255. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	1.	1.	1.	1.		
260. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	1.	1.	1.	1.		
265. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	1.	1.	1.	1.		
270. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	1.	1.	1.		
275. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
280. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
285. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
290. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
295. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
300. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	1.	1.		
305. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	1.	1.		
310. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	0.	0.	1.	1.	1.	1.		
315. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	0.	0.	0.	1.	1.	1.		
320. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	0.	1.	1.	1.	1.	1.		
325. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
330. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
335. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
340. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
345. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
350. *	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.		
355. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.		
MAX *	2.	2.	2.	2.	2.	3.	3.	3.	3.	2.	2.	2.	2.	2.	3.	3.	3.	2.	2.	2.		
DEGR. *	35	35	35	165	170	180	210	210	215	190	185	190	345	345	10	15	15	25	25	30		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 CUMULATIVE BUILD 1-HR FRIDAY

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
0.	2.	2.
5.	2.	2.
10.	3.	1.
15.	3.	1.
20.	2.	1.
25.	2.	0.
30.	2.	0.
35.	2.	0.
40.	1.	0.
45.	1.	0.
50.	1.	0.
55.	1.	0.
60.	1.	0.
65.	1.	0.
70.	1.	0.
75.	1.	0.
80.	1.	0.
85.	1.	0.
90.	1.	0.
95.	1.	0.
100.	1.	0.
105.	1.	0.
110.	1.	0.
115.	1.	0.
120.	1.	0.
125.	1.	0.
130.	1.	0.
135.	1.	0.
140.	1.	0.
145.	1.	0.
150.	2.	0.
155.	2.	0.
160.	2.	0.
165.	2.	0.
170.	2.	1.
175.	2.	1.
180.	2.	2.
185.	1.	2.
190.	1.	2.
195.	0.	2.
200.	0.	2.
205.	0.	2.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM2.5 CUMULATIVE BUILD 1-HR FRIDAY

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
210.	0.	2.
215.	0.	2.
220.	1.	2.
225.	0.	2.
230.	0.	2.
235.	0.	2.
240.	0.	1.
245.	0.	1.
250.	0.	1.
255.	0.	1.
260.	0.	1.
265.	0.	1.
270.	0.	1.
275.	0.	1.
280.	0.	1.
285.	0.	1.
290.	0.	1.
295.	0.	1.
300.	0.	1.
305.	0.	1.
310.	0.	2.
315.	0.	2.
320.	0.	2.
325.	1.	2.
330.	1.	2.
335.	1.	2.
340.	1.	2.
345.	1.	2.
350.	1.	2.
355.	2.	2.
MAX	3.	2.
DEGR.	10	345

THE HIGHEST CONCENTRATION OF 3. ug/m**3 OCCURRED AT RECEPTOR REC8 .

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 12:10:59

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	1596.0	3465.0	1596.0	4465.0	*	1000.	360.	AG	763.	0.0	0.0	55.7		
2. RTE 161 S FREE FLOW	*	1608.0	3465.0	1608.0	2465.0	*	1000.	180.	AG	1201.	0.0	0.0	79.7		
3. SITE DRIVE FRE FLOW	*	1600.0	3455.0	2100.0	3455.0	*	500.	90.	AG	2060.	0.0	0.0	79.7		
4. SITE DRIVE FRE FLOW	*	2100.0	3455.0	2453.6	3101.4	*	500.	135.	AG	2060.	0.0	0.0	43.7		
5. RT 161 NB RGT QUEUE	*	1632.0	3425.0	1632.0	-807.5	*	4232.	180.	AG	0.	100.0	0.0	12.0	2.04	215.0
6. RT 161 NB THR QUEUE	*	1614.0	3425.0	1614.0	3328.0	*	97.	180.	AG	0.	100.0	0.0	24.0	0.73	4.9
7. RT 161 SB LFT QUEUE	*	1596.0	3497.0	1596.0	3559.8	*	63.	360.	AG	0.	100.0	0.0	12.0	0.53	3.2
8. RT 161 SB THR QUEUE	*	1584.0	3497.0	1584.0	3551.5	*	55.	360.	AG	0.	100.0	0.0	12.0	0.30	2.8
9. SITE DR. LEFT QUEUE	*	1646.0	3461.0	1772.3	3461.0	*	126.	90.	AG	0.	100.0	0.0	24.0	0.72	6.4
10. SITE DR. RIGHT QUEUE	*	1646.0	3473.0	1702.3	3473.0	*	56.	90.	AG	0.	100.0	0.0	12.0	0.32	2.9

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 12:10:59

5. RT 161 NB RGT QUEUE *	90	65	2.0	761	1600	0.08	2	3
6. RT 161 NB THR QUEUE *	90	65	2.0	547	1600	0.08	2	3
7. RT 161 SB LFT QUEUE *	90	68	2.0	169	1600	0.08	2	3
8. RT 161 SB THR QUEUE *	90	43	2.0	232	1600	0.08	2	3
9. SITE DR. LEFT QUEUE *	90	50	2.0	924	1600	0.08	2	3
10. SITE DR. RIGHT QUEUE*	90	50	2.0	206	1600	0.08	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 9-1	1568.0	3305.0	6.0
2. RECEPTOR NO. 9-2	1568.0	3385.0	6.0
3. RECEPTOR NO. 9-3	1568.0	3465.0	6.0
4. RECEPTOR NO. 9-4	1568.0	3505.0	6.0
5. RECEPTOR NO. 9-5	1568.0	3545.0	6.0
6. RECEPTOR NO. 9-6	1568.0	3585.0	6.0
7. RECEPTOR NO. 9-7	1568.0	3625.0	6.0
8. RECEPTOR NO. 9-8	1568.0	3665.0	6.0
9. RECEPTOR NO. 9-9	1624.0	3665.0	6.0
10. RECEPTOR NO. 9-10	1624.0	3585.0	6.0
11. RECEPTOR NO. 9-11	1624.0	3545.0	6.0
12. RECEPTOR NO. 9-12	1624.0	3513.0	6.0
13. RECEPTOR NO. 9-13	1624.0	3495.0	6.0
14. RECEPTOR NO. 9-14	1658.0	3495.0	6.0
15. RECEPTOR NO. 9-15	1698.0	3495.0	6.0
16. RECEPTOR NO. 9-16	1738.0	3495.0	6.0
17. RECEPTOR NO. 9-17	1778.0	3495.0	6.0
18. RECEPTOR NO. 9-18	1778.0	3415.0	6.0
19. RECEPTOR NO. 9-19	1698.0	3415.0	6.0
20. RECEPTOR NO. 9-20	1648.0	3415.0	6.0
21. RECEPTOR NO. 9-21	1648.0	3385.0	6.0
22. RECEPTOR NO. 9-22	1648.0	3345.0	6.0
23. RECEPTOR NO. 9-23	1648.0	3305.0	6.0
24. RECEPTOR NO. 9-24	1648.0	3265.0	6.0
25. RECEPTOR NO. 9-25	1648.0	3150.0	6.0
26. RECEPTOR NO. 9-26	1900.0	3495.0	6.0
27. RECEPTOR NO. 9-27	2000.0	3495.0	6.0
28. RECEPTOR NO. 9-28	1568.0	3800.0	6.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	2.
5.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
10.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.
15.	2.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.
20.	2.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.
25.	2.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.
30.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.
35.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.
40.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
45.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
50.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
55.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
60.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
65.	2.	3.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
70.	1.	3.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
75.	1.	3.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.
80.	1.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.
85.	1.	2.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	2.
90.	1.	2.	3.	2.	1.	0.	0.	0.	0.	0.	0.	1.	2.	1.	1.	1.	1.	1.	1.	1.
95.	1.	2.	3.	2.	2.	1.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	2.	1.	1.	1.
100.	1.	2.	3.	3.	2.	1.	0.	0.	0.	0.	1.	1.	3.	2.	2.	2.	2.	1.	1.	1.
105.	1.	2.	2.	3.	2.	1.	1.	0.	0.	1.	1.	2.	3.	2.	2.	2.	2.	0.	0.	0.
110.	1.	2.	2.	2.	2.	1.	1.	1.	0.	1.	1.	2.	3.	2.	2.	2.	2.	0.	0.	0.
115.	1.	2.	2.	2.	2.	1.	1.	1.	0.	1.	1.	2.	3.	2.	2.	2.	2.	0.	0.	0.
120.	1.	1.	2.	2.	2.	2.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	0.	0.	0.
125.	1.	2.	1.	2.	2.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	1.	0.	0.	0.
130.	1.	2.	2.	1.	2.	2.	1.	1.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.
135.	1.	2.	2.	2.	2.	2.	1.	1.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.
140.	1.	1.	2.	2.	2.	2.	1.	1.	0.	1.	1.	2.	2.	2.	2.	2.	1.	0.	0.	0.
145.	1.	1.	2.	2.	2.	2.	1.	1.	0.	1.	1.	1.	1.	2.	2.	2.	1.	0.	0.	0.
150.	1.	1.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	0.	0.	0.
155.	1.	1.	2.	2.	2.	2.	2.	1.	0.	1.	1.	1.	1.	2.	2.	1.	1.	0.	0.	0.
160.	1.	1.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	2.	2.	2.	1.	1.	0.	0.	0.
165.	1.	1.	2.	2.	2.	2.	2.	2.	1.	1.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.
170.	2.	2.	2.	2.	2.	2.	2.	2.	1.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	1.
175.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	3.	3.	2.	2.	2.	1.	0.	0.	1.
180.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	3.	3.	4.	3.	2.	2.	1.	0.	1.	2.
185.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	3.	4.	4.	3.	2.	2.	0.	1.	2.
190.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	3.	4.	3.	2.	2.	0.	1.	2.
195.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	3.	3.	2.	2.	1.	1.	2.
200.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	3.	3.	2.	2.	0.	1.	2.
205.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	3.	3.	2.	2.	0.	1.	2.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 BUILD 1-HR FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28													
210. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	3.	2.	2.	1.	1.	2.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	3.	2.	2.	1.	1.	2.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	3.	2.	2.	1.	1.	2.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	3.	3.	2.	1.	1.	2.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	3.	3.	3.	0.	1.	2.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	3.	2.	1.	1.	2.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	3.	3.	1.	1.	2.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	2.	3.	1.	1.	2.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	2.	2.	1.	1.	2.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	1.	1.	2.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	1.	1.	2.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	2.	1.	2.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	2.	1.	2.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	2.	1.	2.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	2.	1.	2.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	2.	1.	2.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	2.	1.	2.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	2.	2.	2.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	2.	2.	1.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	2.	2.	1.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	2.	2.	2.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	2.	2.	2.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	2.	2.	2.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	2.	2.	2.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	2.	2.	2.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	2.
350. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	2.
355. *	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	2.
MAX *	2.	3.	3.	3.	2.	2.	2.	2.	2.	2.	3.	3.	4.	4.	3.	3.	3.	2.	2.	2.
DEGR. *	35	65	95	100	120	165	170	170	180	180	180	180	180	185	210	235	245	295	315	200

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
0.	2.	2.	2.	2.	2.	0.	0.	1.
5.	2.	1.	1.	1.	1.	0.	0.	1.
10.	1.	1.	1.	1.	1.	0.	0.	1.
15.	1.	1.	1.	1.	1.	0.	0.	1.
20.	1.	1.	1.	1.	0.	0.	0.	1.
25.	1.	1.	1.	1.	0.	0.	0.	1.
30.	1.	1.	1.	1.	0.	0.	0.	0.
35.	1.	1.	1.	1.	0.	0.	0.	0.
40.	1.	1.	1.	1.	0.	0.	0.	0.
45.	1.	1.	1.	0.	0.	0.	0.	0.
50.	1.	1.	0.	0.	0.	0.	0.	0.
55.	1.	1.	0.	0.	0.	0.	0.	0.
60.	1.	1.	0.	0.	0.	0.	0.	0.
65.	1.	1.	0.	0.	0.	0.	0.	0.
70.	1.	1.	0.	0.	0.	0.	0.	0.
75.	1.	1.	0.	0.	0.	0.	0.	0.
80.	1.	0.	0.	0.	0.	0.	0.	0.
85.	1.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	1.	0.	0.
95.	0.	0.	0.	0.	0.	1.	1.	0.
100.	0.	0.	0.	0.	0.	2.	1.	0.
105.	0.	0.	0.	0.	0.	2.	1.	0.
110.	0.	0.	0.	0.	0.	2.	1.	0.
115.	0.	0.	0.	0.	0.	2.	2.	0.
120.	0.	0.	0.	0.	0.	2.	2.	1.
125.	0.	0.	0.	0.	0.	2.	2.	1.
130.	0.	0.	0.	0.	0.	1.	2.	1.
135.	0.	0.	0.	0.	0.	1.	2.	1.
140.	0.	0.	0.	0.	0.	1.	1.	1.
145.	0.	0.	0.	0.	0.	1.	1.	1.
150.	0.	0.	0.	0.	0.	1.	1.	1.
155.	0.	0.	0.	0.	0.	1.	1.	1.
160.	0.	0.	0.	0.	0.	1.	1.	1.
165.	0.	0.	0.	0.	0.	1.	1.	1.
170.	1.	1.	1.	1.	1.	1.	1.	2.
175.	1.	1.	1.	1.	1.	1.	1.	2.
180.	2.	2.	2.	2.	2.	1.	1.	1.
185.	2.	2.	2.	2.	2.	1.	1.	1.
190.	2.	2.	2.	2.	2.	1.	1.	0.
195.	2.	2.	2.	2.	2.	1.	1.	0.
200.	2.	2.	2.	2.	2.	1.	1.	0.
205.	2.	2.	2.	2.	2.	1.	1.	0.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 BUILD 1-HR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
210.	2.	1.	1.	1.	1.	1.	1.	0.
215.	2.	1.	1.	1.	1.	1.	1.	0.
220.	2.	1.	1.	1.	1.	1.	1.	0.
225.	2.	1.	1.	1.	1.	1.	1.	0.
230.	2.	1.	1.	1.	1.	1.	1.	0.
235.	2.	1.	1.	1.	1.	2.	1.	0.
240.	2.	1.	1.	1.	1.	2.	1.	0.
245.	2.	2.	1.	1.	1.	2.	2.	0.
250.	2.	2.	1.	1.	1.	2.	2.	0.
255.	2.	2.	1.	1.	1.	2.	2.	0.
260.	2.	2.	1.	1.	1.	2.	2.	0.
265.	2.	2.	1.	1.	1.	2.	2.	0.
270.	2.	2.	1.	1.	1.	1.	1.	0.
275.	2.	2.	1.	1.	1.	1.	1.	0.
280.	2.	2.	1.	1.	1.	0.	0.	0.
285.	2.	2.	1.	1.	1.	0.	0.	0.
290.	2.	2.	1.	1.	1.	0.	0.	0.
295.	2.	2.	1.	1.	1.	0.	0.	0.
300.	2.	2.	1.	1.	1.	0.	0.	0.
305.	2.	2.	1.	1.	1.	0.	0.	0.
310.	2.	2.	2.	1.	1.	0.	0.	0.
315.	2.	2.	2.	1.	1.	0.	0.	0.
320.	2.	2.	2.	1.	1.	0.	0.	0.
325.	2.	2.	2.	2.	1.	0.	0.	0.
330.	2.	2.	3.	2.	1.	0.	0.	0.
335.	2.	2.	2.	2.	2.	0.	0.	0.
340.	2.	2.	3.	2.	2.	0.	0.	0.
345.	2.	2.	3.	3.	2.	0.	0.	0.
350.	2.	2.	2.	3.	2.	0.	0.	0.
355.	2.	2.	2.	2.	2.	0.	0.	0.
MAX	2.	2.	3.	3.	2.	2.	2.	2.
DEGR.	190	335	345	345	350	255	125	170

THE HIGHEST CONCENTRATION OF 4. ug/m**3 OCCURRED AT RECEPTOR REC13.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

DATE : 9/10/10
TIME : 12:11:27

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2	* LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	1596.0	3465.0	1596.0	4465.0	1000.	360.	AG	1019.	0.0	0.0	55.7		
2. RTE 161 S FREE FLOW	1608.0	3465.0	1608.0	2465.0	1000.	180.	AG	1398.	0.0	0.0	79.7		
3. SITE DRIVE FRE FLOW	1600.0	3455.0	2100.0	3455.0	500.	90.	AG	2060.	0.0	0.0	79.7		
4. SITE DRIVE FRE FLOW	2100.0	3455.0	2453.6	3101.4	500.	135.	AG	2060.	0.0	0.0	43.7		
5. RT 161 NB RGT QUEUE	1632.0	3425.0	1632.0	-838.6	4264.	180.	AG	0.	100.0	0.0	12.0	2.05	216.6
6. RT 161 NB THR QUEUE	1614.0	3425.0	1614.0	2848.4	577.	180.	AG	0.	100.0	0.0	24.0	1.10	29.3
7. RT 161 SB LFT QUEUE	1596.0	3497.0	1596.0	3558.7	62.	360.	AG	0.	100.0	0.0	12.0	0.52	3.1
8. RT 161 SB THR QUEUE	1584.0	3497.0	1584.0	3607.0	110.	360.	AG	0.	100.0	0.0	12.0	0.61	5.6
9. SITE DR. LEFT QUEUE	1646.0	3461.0	1772.9	3461.0	127.	90.	AG	0.	100.0	0.0	24.0	0.73	6.4
10. SITE DR. RIGHT QUEUE	1646.0	3473.0	1701.0	3473.0	55.	90.	AG	0.	100.0	0.0	12.0	0.31	2.8

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

DATE : 9/10/10
TIME : 12:11:27

5. RT 161 NB RGT QUEUE *	90	65	2.0	764	1600	0.08	2	3
6. RT 161 NB THR QUEUE *	90	65	2.0	818	1600	0.08	2	3
7. RT 161 SB LFT QUEUE *	90	68	2.0	166	1600	0.08	2	3
8. RT 161 SB THR QUEUE *	90	43	2.0	468	1600	0.08	2	3
9. SITE DR. LEFT QUEUE *	90	50	2.0	929	1600	0.08	2	3
10. SITE DR. RIGHT QUEUE*	90	50	2.0	201	1600	0.08	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 9-1	1568.0	3305.0	6.0
2. RECEPTOR NO. 9-2	1568.0	3385.0	6.0
3. RECEPTOR NO. 9-3	1568.0	3465.0	6.0
4. RECEPTOR NO. 9-4	1568.0	3505.0	6.0
5. RECEPTOR NO. 9-5	1568.0	3545.0	6.0
6. RECEPTOR NO. 9-6	1568.0	3585.0	6.0
7. RECEPTOR NO. 9-7	1568.0	3625.0	6.0
8. RECEPTOR NO. 9-8	1568.0	3665.0	6.0
9. RECEPTOR NO. 9-9	1624.0	3665.0	6.0
10. RECEPTOR NO. 9-10	1624.0	3585.0	6.0
11. RECEPTOR NO. 9-11	1624.0	3545.0	6.0
12. RECEPTOR NO. 9-12	1624.0	3513.0	6.0
13. RECEPTOR NO. 9-13	1624.0	3495.0	6.0
14. RECEPTOR NO. 9-14	1658.0	3495.0	6.0
15. RECEPTOR NO. 9-15	1698.0	3495.0	6.0
16. RECEPTOR NO. 9-16	1738.0	3495.0	6.0
17. RECEPTOR NO. 9-17	1778.0	3495.0	6.0
18. RECEPTOR NO. 9-18	1778.0	3415.0	6.0
19. RECEPTOR NO. 9-19	1698.0	3415.0	6.0
20. RECEPTOR NO. 9-20	1648.0	3415.0	6.0
21. RECEPTOR NO. 9-21	1648.0	3385.0	6.0
22. RECEPTOR NO. 9-22	1648.0	3345.0	6.0
23. RECEPTOR NO. 9-23	1648.0	3305.0	6.0
24. RECEPTOR NO. 9-24	1648.0	3265.0	6.0
25. RECEPTOR NO. 9-25	1648.0	3150.0	6.0
26. RECEPTOR NO. 9-26	1900.0	3495.0	6.0
27. RECEPTOR NO. 9-27	2000.0	3495.0	6.0
28. RECEPTOR NO. 9-28	1568.0	3800.0	6.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	2.
5.	2.	1.	2.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	2.
10.	2.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.
15.	2.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.
20.	2.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.
25.	2.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.
30.	2.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.
35.	2.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.
40.	2.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
45.	2.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
50.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
55.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
60.	2.	3.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
65.	2.	3.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
70.	2.	3.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.
75.	2.	3.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.
80.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.
85.	2.	2.	3.	2.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	2.
90.	2.	2.	3.	2.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.	1.	1.	1.	1.	1.
95.	2.	2.	3.	2.	2.	1.	1.	0.	0.	0.	0.	1.	2.	2.	2.	2.	2.	1.	1.	1.
100.	2.	2.	3.	3.	2.	1.	1.	1.	0.	0.	1.	1.	3.	2.	2.	2.	2.	1.	1.	1.
105.	2.	2.	2.	3.	2.	1.	1.	1.	0.	1.	1.	2.	3.	2.	2.	2.	2.	0.	0.	0.
110.	2.	2.	2.	3.	2.	2.	1.	1.	0.	1.	1.	2.	3.	2.	2.	2.	2.	0.	0.	0.
115.	2.	2.	2.	3.	3.	2.	1.	1.	0.	1.	1.	2.	3.	2.	2.	2.	2.	0.	0.	0.
120.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	0.	0.	0.
125.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	1.	0.	0.	0.
130.	2.	2.	2.	2.	2.	2.	1.	1.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.
135.	2.	2.	2.	2.	2.	2.	1.	1.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.
140.	2.	2.	2.	2.	2.	2.	2.	1.	0.	1.	1.	2.	2.	2.	2.	2.	1.	0.	0.	0.
145.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	0.	0.	0.
150.	2.	2.	2.	2.	3.	2.	2.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	0.	0.	0.
155.	2.	2.	2.	2.	2.	3.	2.	2.	1.	1.	1.	1.	1.	2.	2.	1.	1.	0.	0.	0.
160.	2.	2.	2.	3.	3.	3.	2.	2.	1.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.
165.	3.	3.	3.	3.	3.	3.	3.	2.	1.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.
170.	3.	3.	3.	3.	3.	3.	3.	3.	2.	2.	2.	3.	3.	2.	2.	1.	1.	0.	0.	1.
175.	2.	2.	3.	3.	3.	3.	3.	3.	2.	3.	3.	4.	4.	3.	2.	2.	1.	0.	0.	2.
180.	2.	2.	2.	2.	2.	2.	2.	2.	3.	3.	3.	4.	5.	4.	3.	2.	1.	0.	1.	3.
185.	1.	1.	1.	1.	1.	1.	1.	1.	3.	3.	3.	4.	5.	4.	3.	2.	2.	0.	1.	3.
190.	1.	1.	1.	1.	0.	1.	1.	1.	2.	3.	3.	3.	4.	4.	3.	2.	2.	1.	2.	4.
195.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	3.	4.	3.	3.	2.	1.	2.	4.
200.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	1.	2.	2.	3.	3.	3.	2.	1.	2.	3.
205.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	3.	3.	3.	2.	1.	2.	3.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28													
210. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	3.	3.	3.	2.	1.	2.	3.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	3.	3.	2.	1.	2.	2.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	3.	3.	3.	1.	2.	2.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	3.	3.	3.	1.	2.	2.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	3.	3.	3.	1.	1.	2.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	3.	3.	1.	1.	2.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	3.	3.	1.	1.	2.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	3.	1.	1.	2.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	2.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	2.	2.	1.	1.	2.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	2.	2.	1.	1.	2.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	2.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	2.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	2.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	2.	1.	2.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	2.	1.	2.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	2.	1.	2.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	2.	2.	2.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	2.	2.	2.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	2.	2.	2.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	2.	2.	2.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	2.	2.	2.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	2.	2.	2.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	2.	2.	2.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	2.	2.	2.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	2.
350. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	2.
355. *	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	2.
MAX *	3.	3.	3.	3.	3.	3.	3.	3.	3.	3.	3.	4.	5.	4.	3.	3.	3.	2.	2.	4.
DEGR. *	165	65	95	100	165	170	170	170	180	180	180	180	180	190	190	220	230	300	325	190

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
0.	2.	2.	2.	2.	2.	0.	0.	1.
5.	2.	1.	2.	2.	2.	0.	0.	1.
10.	1.	1.	1.	1.	1.	0.	0.	1.
15.	1.	1.	1.	1.	1.	0.	0.	1.
20.	1.	1.	1.	1.	0.	0.	0.	1.
25.	1.	1.	1.	1.	0.	0.	0.	1.
30.	1.	1.	1.	1.	0.	0.	0.	1.
35.	1.	1.	1.	1.	0.	0.	0.	1.
40.	1.	1.	1.	1.	0.	0.	0.	1.
45.	1.	1.	1.	0.	0.	0.	0.	1.
50.	1.	1.	1.	0.	0.	0.	0.	0.
55.	1.	1.	0.	0.	0.	0.	0.	0.
60.	1.	1.	0.	0.	0.	0.	0.	0.
65.	1.	1.	0.	0.	0.	0.	0.	0.
70.	1.	1.	0.	0.	0.	0.	0.	0.
75.	1.	1.	0.	0.	0.	0.	0.	0.
80.	1.	0.	0.	0.	0.	0.	0.	0.
85.	1.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	1.	0.	0.
95.	0.	0.	0.	0.	0.	1.	1.	0.
100.	0.	0.	0.	0.	0.	2.	1.	0.
105.	0.	0.	0.	0.	0.	2.	1.	0.
110.	0.	0.	0.	0.	0.	2.	1.	0.
115.	0.	0.	0.	0.	0.	2.	2.	1.
120.	0.	0.	0.	0.	0.	2.	2.	1.
125.	0.	0.	0.	0.	0.	2.	2.	1.
130.	0.	0.	0.	0.	0.	1.	2.	1.
135.	0.	0.	0.	0.	0.	1.	2.	1.
140.	0.	0.	0.	0.	0.	1.	1.	1.
145.	0.	0.	0.	0.	0.	1.	1.	1.
150.	0.	0.	0.	0.	0.	1.	1.	1.
155.	0.	0.	0.	0.	0.	1.	1.	1.
160.	0.	0.	0.	0.	0.	1.	1.	1.
165.	0.	0.	0.	0.	0.	1.	1.	2.
170.	1.	1.	1.	1.	1.	1.	1.	2.
175.	2.	2.	2.	2.	2.	1.	1.	2.
180.	3.	3.	3.	2.	2.	1.	1.	2.
185.	3.	3.	3.	3.	3.	1.	1.	1.
190.	4.	4.	4.	3.	3.	1.	1.	1.
195.	4.	4.	3.	3.	3.	1.	1.	0.
200.	3.	3.	3.	3.	3.	1.	1.	0.
205.	3.	3.	3.	3.	3.	1.	1.	0.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
210.	3.	3.	3.	3.	3.	2.	1.	0.
215.	2.	2.	2.	2.	2.	2.	1.	0.
220.	2.	2.	2.	2.	2.	2.	2.	0.
225.	2.	2.	2.	2.	2.	2.	2.	0.
230.	2.	2.	2.	2.	2.	2.	2.	0.
235.	2.	2.	2.	2.	2.	2.	2.	0.
240.	2.	2.	2.	2.	2.	2.	2.	0.
245.	2.	2.	2.	2.	2.	2.	2.	0.
250.	2.	2.	2.	2.	2.	2.	2.	0.
255.	2.	2.	2.	2.	2.	2.	2.	0.
260.	2.	2.	2.	2.	2.	2.	2.	0.
265.	2.	2.	2.	2.	2.	2.	2.	0.
270.	2.	2.	2.	2.	2.	1.	1.	0.
275.	2.	2.	2.	2.	2.	1.	1.	0.
280.	2.	2.	2.	2.	2.	0.	0.	0.
285.	2.	2.	2.	2.	2.	0.	0.	0.
290.	2.	2.	2.	2.	2.	0.	0.	0.
295.	2.	2.	2.	2.	2.	0.	0.	0.
300.	2.	2.	2.	2.	2.	0.	0.	0.
305.	2.	2.	2.	2.	2.	0.	0.	0.
310.	2.	2.	2.	2.	2.	0.	0.	0.
315.	2.	2.	2.	2.	2.	0.	0.	0.
320.	2.	2.	2.	2.	2.	0.	0.	0.
325.	2.	2.	2.	2.	2.	0.	0.	0.
330.	2.	2.	3.	3.	3.	0.	0.	0.
335.	2.	3.	3.	3.	3.	0.	0.	0.
340.	2.	3.	3.	3.	3.	0.	0.	0.
345.	2.	2.	3.	3.	3.	0.	0.	0.
350.	2.	2.	3.	3.	3.	0.	0.	0.
355.	2.	2.	2.	2.	3.	0.	0.	1.
MAX	4.	4.	4.	3.	3.	2.	2.	2.
DEGR.	190	190	190	190	190	255	125	170

THE HIGHEST CONCENTRATION OF 5. ug/m**3 OCCURRED AT RECEPTOR REC13.

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION PM2.5 FRIDAY PM

DATE : 8/17/10
TIME : 16:51:23

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	125.	.0	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	125.	.0	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	125.	.0	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	125.	.0	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	59.	.0	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	59.	.0	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	59.	.0	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	59.	.0	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	59.	.0	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	59.	.0	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	45.	.0	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	45.	.0	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	45.	.0	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	45.	.0	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	45.	.0	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	51.	.0	.0	30.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	51.	.0	.0	30.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	51.	.0	.0	30.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	51.	.0	.0	30.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	1.	.0	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	1.	.0	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	1.	.0	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	101.	.0	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	101.	.0	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	101.	.0	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	101.	.0	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	101.	.0	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	153.	.0	.0	30.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	153.	.0	.0	30.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	48.	.0	.0	30.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	48.	.0	.0	30.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.0	.0	30.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.0	.0	30.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.0	.0	30.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.0	.0	30.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.0	.0	30.0		
37. Existing On Ramp 1	********	********	********	********	181.	240.	AG	105.	.0	.0	30.0		
38. Existing On Ramp 2	********	********	********	********	199.	278.	AG	105.	.0	.0	30.0		
39. Existing On Ramp 3	********	********	********	********	181.	314.	AG	105.	.0	.0	30.0		
40. Existing On Ramp 4	********	********	********	********	170.	344.	AG	105.	.0	.0	30.0		
41. CR 161 SB Queue	********	********	********	********	12.	212.	AG	0.	100.0	.0	12.0	.24	.6
42. RTE 173 Queue Ex	********	********	********	********	33.	90.	AG	0.	100.0	.0	12.0	.63	1.7

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION PM2.5 FRIDAY PM

DATE : 8/17/10
TIME : 16:51:23

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
41. CR 161 SB Queue	48	200.	.09
42. RTE 173 Queue Ex	125	200.	.09

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION PM2.5 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION PM2.5 FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX *	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEGR. *	0	0	150	250	300	15	30	0	0	100	0	0	0	320	335	0	260	40	40	0

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION PM2.5 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION PM2.5 FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEGR.	0	245	75	70	0	80	80	0	90	110	95	215	5	0	355	0	180	25	30	35

THE HIGHEST CONCENTRATION OF 1. ug/m**3 OCCURRED AT RECEPTOR REC6 .

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION PM2.5 FRIDAY PM

DATE : 9/10/10
TIME : 15:46:10

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	193.	.0	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	193.	.0	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	193.	.0	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	193.	.0	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	65.	.0	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	65.	.0	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	65.	.0	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	65.	.0	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	65.	.0	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	65.	.0	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	50.	.0	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	50.	.0	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	50.	.0	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	50.	.0	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	50.	.0	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	59.	.0	.0	30.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	59.	.0	.0	30.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	59.	.0	.0	30.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	59.	.0	.0	30.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	1.	.0	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	1.	.0	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	1.	.0	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	166.	.0	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	166.	.0	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	166.	.0	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	166.	.0	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	166.	.0	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	53.	.0	.0	30.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	53.	.0	.0	30.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	53.	.0	.0	30.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	53.	.0	.0	30.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.0	.0	30.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.0	.0	30.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.0	.0	30.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.0	.0	30.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.0	.0	30.0		
37. Existing On Ramp 1	********	********	********	********	181.	240.	AG	181.	.0	.0	30.0		
38. Existing On Ramp 2	********	********	********	********	199.	278.	AG	181.	.0	.0	30.0		
39. Existing On Ramp 3	********	********	********	********	181.	314.	AG	181.	.0	.0	30.0		
40. Existing On Ramp 4	********	********	********	********	170.	344.	AG	181.	.0	.0	30.0		
41. CR 161 SB Queue	********	********	********	********	12.	212.	AG	0.	100.0	.0	12.0	.26	.6
42. RTE 173 Queue Ex	********	********	********	********	36.	112.	AG	0.	100.0	.0	12.0	.64	1.8

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION PM2.5 FRIDAY PM

DATE : 9/10/10
TIME : 15:46:10

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
41. CR 161 SB Queue	53	200.	.08
42. RTE 173 Queue Ex	193	300.	.08

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION PM2.5 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION PM2.5 FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX *	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEGR. *	0	0	160	255	320	35	155	130	0	100	0	15	15	0	0	0	265	275	0	0

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION PM2.5 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION PM2.5 FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEGR.	0	260	0	0	0	80	85	0	90	110	95	220	225	240	0	0	200	205	0	35

THE HIGHEST CONCENTRATION OF 1. ug/m**3 OCCURRED AT RECEPTOR REC6 .

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION PM 2.5 FRIDAY PM

DATE : 9/10/10
TIME : 15:43:44

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	388.	.0	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	388.	.0	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	388.	.0	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	388.	.0	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	76.	.0	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	76.	.0	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	76.	.0	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	76.	.0	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	76.	.0	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	76.	.0	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	59.	.0	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	59.	.0	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	59.	.0	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	59.	.0	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	59.	.0	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	891.	.0	.0	42.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	891.	.0	.0	42.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	891.	.0	.0	42.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	891.	.0	.0	42.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	3.	.0	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	3.	.0	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	3.	.0	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	371.	.0	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	371.	.0	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	371.	.0	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	371.	.0	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	371.	.0	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	893.	.0	.0	42.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	893.	.0	.0	42.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	893.	.0	.0	42.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	893.	.0	.0	42.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.0	.0	42.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.0	.0	42.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.0	.0	42.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.0	.0	42.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.0	.0	42.0		
37. Future 173 WB Ramp A	********	********	********	********	63.	211.	AG	868.	.0	.0	30.0		
38. Future 173 WB Ramp B	********	********	********	********	60.	261.	AG	868.	.0	.0	30.0		
39. Future 173 WB Ramp C	********	********	********	********	72.	273.	AG	868.	.0	.0	30.0		
40. Route 173 Queue Futu	********	********	********	********	1789.	110.	AG	0.	100.0	.0	12.0	1.66	90.9
41. Route 173 Queue Futu	********	********	********	********	1789.	103.	AG	0.	100.0	.0	12.0	1.66	90.9
42. CR 161 SB Queue	********	********	********	********	12.	212.	AG	0.	100.0	.0	12.0	.12	.6

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION PM 2.5 FRIDAY PM

DATE : 9/10/10
TIME : 15:43:44

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
40. Route 173 Queue Futu	332	200.	.08
41. Route 173 Queue Futu	332	200.	.08
42. CR 161 SB Queue	24	200.	.08

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION PM 2.5 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
5.	0.	0.	0.	1.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
10.	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	0.	0.	0.
15.	0.	0.	0.	1.	1.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	0.	0.	0.
20.	0.	0.	0.	0.	1.	2.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	1.	0.	0.	0.
25.	0.	0.	0.	0.	1.	2.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	1.	0.	0.	0.
30.	0.	0.	0.	0.	1.	2.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	1.	0.	0.	0.
35.	0.	0.	0.	0.	1.	2.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	1.	1.	0.	0.
40.	0.	0.	0.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	0.	0.
45.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.	0.	0.
50.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.	0.	0.
55.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
60.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
65.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
70.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
75.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
80.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
85.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
90.	0.	0.	1.	0.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	0.	0.	0.
95.	0.	0.	1.	0.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	0.	0.	0.
100.	0.	0.	1.	0.	2.	1.	1.	1.	1.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
105.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
110.	0.	0.	2.	1.	1.	1.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
115.	0.	0.	2.	1.	1.	0.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
120.	0.	0.	2.	1.	0.	0.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
125.	0.	0.	2.	1.	0.	0.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
130.	0.	0.	2.	1.	0.	0.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
135.	0.	0.	2.	1.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
140.	0.	0.	1.	1.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
145.	0.	0.	1.	1.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
150.	0.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
155.	0.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
160.	0.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
165.	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
170.	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
175.	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
180.	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
185.	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
190.	0.	0.	1.	1.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
195.	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
200.	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
205.	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION PM 2.5 FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	0.	0.	1.	1.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
215. *	0.	0.	1.	1.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
220. *	0.	0.	1.	1.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
225. *	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
230. *	1.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
235. *	1.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
240. *	1.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
245. *	1.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
250. *	1.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
255. *	1.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
260. *	1.	0.	1.	2.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
265. *	0.	0.	1.	2.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
270. *	0.	0.	1.	2.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
275. *	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
280. *	0.	0.	0.	2.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	0.
285. *	0.	0.	0.	1.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	2.	1.	1.	0.
290. *	0.	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	2.	1.	0.	0.
295. *	0.	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	0.	0.
300. *	0.	0.	0.	1.	2.	1.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	0.	0.
305. *	0.	0.	0.	1.	2.	1.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	0.	0.
310. *	0.	0.	0.	1.	2.	2.	0.	0.	0.	1.	1.	0.	0.	1.	0.	0.	1.	1.	0.	0.
315. *	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	1.	1.	0.	1.	0.	0.	1.	1.	0.	0.
320. *	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
325. *	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	2.	1.	0.	0.
330. *	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	1.	1.	0.	0.
335. *	0.	0.	0.	1.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	1.	0.	1.	1.	0.	0.
340. *	0.	0.	0.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	1.	0.	1.	1.	0.	0.
345. *	0.	0.	0.	1.	1.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
350. *	0.	0.	0.	1.	1.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
355. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
MAX *	1.	0.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.	0.	2.	1.	1.	1.
DEGR. *	245	15	120	265	305	30	125	120	120	120	120	20	350	335	0	0	290	125	120	120

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION PM 2.5 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	1.	1.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	1.	1.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	1.	1.	1.	0.	1.	1.	0.	1.	0.	0.	0.	0.	0.	1.	1.
25.	0.	0.	0.	0.	0.	2.	1.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
30.	0.	0.	0.	0.	0.	2.	1.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
35.	0.	0.	0.	0.	0.	2.	1.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
40.	0.	0.	0.	0.	0.	2.	1.	1.	0.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
45.	0.	0.	0.	0.	0.	2.	1.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
50.	0.	0.	0.	0.	0.	2.	1.	1.	0.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
55.	0.	0.	0.	0.	0.	2.	1.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
60.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	0.	1.	1.
65.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.
70.	0.	0.	0.	0.	0.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.
75.	0.	0.	0.	0.	0.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
80.	0.	0.	0.	0.	0.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.
85.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
90.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.
95.	0.	0.	0.	0.	0.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
100.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
105.	0.	1.	0.	0.	0.	1.	2.	2.	2.	2.	1.	0.	0.	0.	0.	0.	1.	0.	1.	0.
110.	0.	1.	1.	0.	0.	1.	1.	1.	2.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.
115.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.	2.	1.	0.	0.	0.	0.	1.	1.	1.	1.
120.	1.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.
125.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.
130.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	1.	1.	1.
135.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	1.
140.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	1.
145.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	1.
150.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	1.
155.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
160.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
165.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
170.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
175.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
180.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
185.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
190.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
195.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
200.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
205.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION PM 2.5 FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
215.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
220.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
225.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
230.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
235.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
240.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
245.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
250.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	0.	0.	0.	0.	0.
255.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.
260.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.
265.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
270.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.
275.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
280.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
285.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	1.	1.	1.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	1.	1.	1.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
MAX	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.	1.	1.
DEGR.	130	270	120	125	125	65	90	100	105	105	110	250	225	225	225	215	175	155	160	175

THE HIGHEST CONCENTRATION OF 2. ug/m**3 OCCURRED AT RECEPTOR REC26.

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION PM 2.5 F

DATE : 9/10/10
TIME : 15:44: 5

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	683.	.0	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	683.	.0	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	683.	.0	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	683.	.0	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	73.	.0	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	73.	.0	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	73.	.0	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	73.	.0	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	73.	.0	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	73.	.0	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	56.	.0	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	56.	.0	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	56.	.0	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	56.	.0	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	56.	.0	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	790.	.0	.0	42.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	790.	.0	.0	42.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	790.	.0	.0	42.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	790.	.0	.0	42.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	3.	.0	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	3.	.0	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	3.	.0	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	663.	.0	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	663.	.0	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	663.	.0	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	663.	.0	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	663.	.0	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	790.	.0	.0	42.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	790.	.0	.0	42.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	790.	.0	.0	42.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	790.	.0	.0	42.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.0	.0	42.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.0	.0	42.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.0	.0	42.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.0	.0	42.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.0	.0	42.0		
37. Future 173 WB Ramp A	********	********	********	********	63.	211.	AG	768.	.0	.0	30.0		
38. Future 173 WB Ramp B	********	********	********	********	60.	261.	AG	768.	.0	.0	30.0		
39. Future 173 WB Ramp C	********	********	********	********	72.	273.	AG	768.	.0	.0	30.0		
40. Route 173 Queue Futu	********	********	********	********	5228.	110.	AG	0.	100.0	.0	12.0	3.13	265.6
41. Route 173 Queue Futu	********	********	********	********	5228.	103.	AG	0.	100.0	.0	12.0	3.13	265.6
42. CR 161 SB Queue	********	********	********	********	12.	212.	AG	0.	100.0	.0	12.0	.10	.6

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION PM 2.5 F

DATE : 9/10/10
TIME : 15:44: 5

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
40. Route 173 Queue Futu	627	200.	.08
41. Route 173 Queue Futu	627	200.	.08
42. CR 161 SB Queue	21	200.	.08

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION PM 2.5 F

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
5.	0.	0.	0.	1.	1.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
10.	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
15.	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
20.	0.	0.	0.	1.	1.	2.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	1.	1.	0.	0.
25.	0.	0.	0.	0.	1.	2.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	1.	1.	0.	0.
30.	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	1.	1.	0.	0.
35.	0.	0.	0.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
40.	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
45.	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
50.	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
55.	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
60.	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
65.	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	2.	0.	0.
70.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	2.	2.	0.	0.
75.	0.	0.	1.	0.	2.	1.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	2.	2.	0.	0.
80.	0.	0.	1.	0.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	2.	2.	0.	0.
85.	0.	0.	1.	0.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	2.	2.	0.	0.
90.	0.	1.	1.	0.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	3.	3.	0.	0.
95.	0.	1.	1.	0.	3.	2.	1.	1.	0.	0.	0.	1.	1.	1.	1.	1.	3.	3.	0.	0.
100.	0.	1.	1.	1.	4.	2.	1.	1.	1.	1.	0.	1.	1.	1.	1.	1.	4.	4.	1.	0.
105.	0.	0.	2.	1.	4.	2.	2.	2.	1.	1.	1.	1.	0.	1.	0.	0.	4.	4.	1.	1.
110.	1.	0.	2.	1.	4.	1.	2.	2.	2.	1.	1.	0.	0.	1.	0.	0.	4.	4.	1.	1.
115.	1.	0.	2.	2.	3.	1.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	3.	4.	1.	1.
120.	1.	0.	2.	1.	3.	0.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	3.	4.	1.	1.
125.	1.	0.	2.	1.	2.	0.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	2.	3.	1.	1.
130.	1.	0.	2.	1.	2.	0.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	2.	3.	1.	1.
135.	0.	0.	2.	1.	1.	0.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
140.	0.	0.	2.	1.	1.	0.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
145.	0.	0.	2.	1.	1.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
150.	0.	0.	2.	1.	1.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
155.	0.	0.	2.	1.	1.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
160.	0.	0.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
165.	0.	0.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
170.	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
175.	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
180.	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
185.	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
190.	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
195.	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
200.	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
205.	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION PM 2.5 F

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
215. *	0.	0.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
220. *	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
225. *	0.	0.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
230. *	1.	0.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
235. *	1.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
240. *	1.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
245. *	1.	0.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
250. *	1.	0.	1.	2.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
255. *	1.	0.	1.	2.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
260. *	1.	0.	1.	2.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
265. *	0.	0.	1.	2.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
270. *	0.	0.	1.	2.	2.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	2.	3.	1.	1.
275. *	0.	0.	1.	2.	2.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	2.	3.	1.	1.
280. *	0.	0.	0.	2.	3.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	3.	4.	1.	0.
285. *	0.	0.	0.	1.	3.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	4.	4.	1.	0.
290. *	0.	0.	0.	1.	4.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	4.	4.	0.	0.
295. *	0.	0.	0.	1.	4.	1.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	4.	4.	0.	0.
300. *	0.	0.	0.	1.	4.	2.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	4.	4.	0.	0.
305. *	0.	0.	0.	1.	3.	2.	0.	0.	1.	1.	1.	0.	0.	1.	0.	0.	3.	3.	0.	0.
310. *	0.	0.	0.	1.	3.	2.	0.	0.	0.	1.	1.	1.	0.	1.	0.	0.	3.	3.	0.	0.
315. *	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	1.	1.	0.	1.	0.	0.	2.	2.	0.	0.
320. *	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	2.	2.	0.	0.
325. *	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	2.	2.	0.	0.
330. *	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	2.	2.	0.	0.
335. *	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	0.	1.	1.	0.	2.	2.	0.	0.
340. *	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	0.	1.	1.	0.	1.	1.	0.	0.
345. *	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	0.	1.	1.	0.	1.	1.	0.	0.
350. *	0.	0.	0.	1.	1.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
355. *	0.	0.	0.	1.	1.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
MAX *	1.	1.	2.	2.	4.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.	1.	4.	4.	1.	1.
DEGR. *	245	90	115	270	105	25	110	115	115	115	120	20	20	350	100	90	290	105	115	115

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION PM 2.5 F

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	1.
25.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.
30.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
35.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
40.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
45.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
50.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
55.	0.	0.	0.	0.	0.	3.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
60.	0.	0.	0.	0.	0.	3.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
65.	0.	0.	0.	0.	0.	3.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
70.	0.	0.	0.	0.	0.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
75.	0.	0.	0.	0.	0.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
80.	0.	0.	0.	0.	0.	3.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.	0.	1.	1.
85.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.	0.	1.	1.
90.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
95.	0.	0.	0.	0.	0.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
100.	0.	1.	0.	0.	0.	2.	2.	3.	2.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
105.	0.	1.	1.	0.	0.	2.	2.	2.	2.	2.	2.	1.	0.	0.	0.	0.	1.	0.	1.	1.
110.	1.	1.	1.	1.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	1.	1.	1.	1.
115.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	1.	1.	0.	0.	1.	1.	1.	1.
120.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	1.	1.	1.	0.	0.	1.	1.	1.	1.
125.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.
130.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.
135.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	1.
140.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	1.
145.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	1.
150.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	1.
155.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
160.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
165.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
170.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
175.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
180.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
185.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
190.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
195.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
200.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.
205.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	1.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION PM 2.5 F

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
215.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
220.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
225.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
230.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
235.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
240.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
245.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
250.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
255.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
260.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
265.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
270.	1.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
275.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
280.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
285.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	2.	1.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	2.	1.	1.	0.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	2.	1.	1.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	2.	1.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
MAX	1.	2.	1.	1.	1.	3.	2.	3.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.	1.	1.
DEGR.	115	270	260	115	120	60	85	100	100	105	110	235	230	230	220	215	115	115	140	175

THE HIGHEST CONCENTRATION OF 4. ug/m**3 OCCURRED AT RECEPTOR REC18.

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 PM10 EXISTING 1-HR FRIDAY PM

DATE : 8/16/10
TIME : 14:32:59

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	636.0	1668.0	1136.0	2534.0	1000.	30.	AG	441.	0.0	0.0	43.7		
2. RTE 161 S FREE FLOW	636.0	1668.0	136.0	802.0	1000.	210.	AG	163.	0.0	0.0	43.7		
3. RTE 17 OFF FRE FLOW	684.0	1746.0	684.0	746.0	1000.	180.	AG	409.	0.0	0.0	31.7		
4. RT 17 OFF LT FRE FL	636.6	1668.9	684.0	1641.9	55.	120.	AG	38.	0.0	0.0	31.7		
5. RT 17 OFF LT QUEUE	651.0	1666.5	684.0	1647.0	38.	121.	AG	38.	0.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	684.0	1722.0	684.0	1600.0	122.	180.	AG	371.	0.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 PM10 EXISTING 1-HR FRIDAY PM

DATE : 8/16/10
TIME : 14:32:59

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 PM10 EXISTING 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.
5.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	0.
10.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.
15.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.
20.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	2.	2.	2.	2.	2.	1.
25.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	2.	2.	2.	2.	2.	1.
30.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	2.	2.	2.	1.
35.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	1.
40.	1.	1.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.
45.	1.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
50.	1.	1.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
55.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
60.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
65.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
70.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
75.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.
80.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
85.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
90.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
95.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
100.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
105.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.
110.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
115.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
120.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
125.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
130.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
135.	0.	1.	1.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
140.	0.	1.	1.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
145.	0.	1.	1.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
150.	0.	1.	1.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
155.	0.	1.	1.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
160.	1.	1.	1.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
165.	1.	1.	1.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	0.
170.	1.	1.	1.	2.	2.	2.	0.	1.	1.	1.	1.	1.	0.	0.	1.	1.	2.	1.	1.	0.
175.	0.	1.	1.	2.	2.	3.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	0.	0.
180.	0.	0.	1.	1.	2.	3.	1.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.
185.	0.	0.	1.	1.	2.	2.	1.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.
190.	0.	0.	1.	1.	1.	2.	1.	2.	2.	2.	2.	2.	1.	1.	0.	0.	1.	0.	0.	0.
195.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.
200.	0.	0.	1.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.
205.	0.	0.	1.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 PM10 EXISTING 1-HR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	0.	0.	1.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.
220.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.
225.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
275.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	1.	0.	0.	1.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	0.	0.	1.	0.	0.	0.
340.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	0.	0.	1.	0.	0.	0.
345.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.
350.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.
355.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	2.	1.	0.	0.
MAX	1.	2.	2.	2.	2.	3.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.
DEGR.	40	45	35	40	165	175	215	190	190	190	335	345	350	350	10	10	10	25	30	25

THE HIGHEST CONCENTRATION OF 3. ug/m**3 OCCURRED AT RECEPTOR REC6 .

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 NO-BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:49:23

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	596.	0.0	0.0	43.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	311.	0.0	0.0	43.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	506.	0.0	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	42.	0.0	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	42.	0.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1600.0	*	122.	180.	AG	464.	0.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 NO-BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:49:23

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 NO-BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.
5.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.
10.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.
15.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	3.	2.	1.	1.
20.	0.	0.	1.	1.	1.	1.	2.	1.	1.	1.	1.	1.	1.	0.	2.	2.	2.	2.	2.	1.
25.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	2.	2.	2.	2.	2.	2.
30.	1.	1.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	2.	2.	2.	2.
35.	1.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	1.
40.	1.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.
45.	1.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
50.	1.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
55.	1.	1.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
60.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
65.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.
70.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.
75.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.
80.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.
85.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
90.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
95.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
100.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.
105.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.
110.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.
115.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.
120.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
125.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
130.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
135.	1.	1.	1.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
140.	1.	1.	1.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
145.	1.	1.	1.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
150.	1.	1.	1.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
155.	1.	1.	1.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
160.	1.	1.	1.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
165.	1.	1.	1.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	0.
170.	1.	1.	1.	2.	2.	2.	0.	1.	1.	1.	1.	1.	0.	0.	1.	1.	2.	1.	1.	0.
175.	1.	1.	1.	2.	2.	3.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	0.	0.
180.	1.	1.	1.	1.	2.	2.	1.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.
185.	0.	1.	1.	1.	2.	2.	1.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.
190.	1.	1.	1.	1.	1.	2.	1.	2.	2.	2.	2.	2.	1.	1.	0.	0.	1.	0.	0.	0.
195.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.
200.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.
205.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 NO-BUILD 1-HR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	1.	1.	1.
215.	0.	0.	1.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	1.	1.	1.
220.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	1.	1.	1.
225.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.	1.	1.	0.	0.	0.	1.	1.	1.
230.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	1.	1.	1.
235.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.	1.	1.	1.
240.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
275.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	1.	0.	0.	1.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	1.	0.	0.	1.	1.	0.	0.
340.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	0.	0.	1.	1.	0.	0.
345.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.
350.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.
355.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	0.
MAX	1.	2.	2.	2.	2.	3.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	3.	2.	2.	2.
DEGR.	40	45	35	170	165	175	215	210	190	190	340	345	345	345	10	10	15	25	30	30

THE HIGHEST CONCENTRATION OF 3. ug/m**3 OCCURRED AT RECEPTOR REC17.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 BUILD 1-HOUR FRIDAY PM

DATE : 9/10/10
TIME : 10:49:43

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	1325.	0.0	0.0	67.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	1196.	0.0	0.0	67.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	1030.	0.0	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	42.	0.0	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	42.	0.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1400.0	*	322.	180.	AG	988.	0.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 BUILD 1-HOUR FRIDAY PM

DATE : 9/10/10
TIME : 10:49:43

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0
21. RECEPTOR NO. 7-21	668.0	1533.0	6.0
22. RECEPTOR NO. 7-22	700.0	1533.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 BUILD 1-HOUR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	2.	2.	3.	3.	3.	4.	4.	4.	4.	4.	4.	2.	2.	2.
5.	0.	0.	1.	1.	1.	1.	2.	2.	3.	3.	3.	3.	3.	3.	5.	5.	5.	2.	2.	2.
10.	1.	1.	1.	1.	1.	1.	2.	2.	3.	3.	2.	2.	2.	2.	5.	5.	5.	3.	3.	2.
15.	1.	1.	1.	1.	1.	1.	3.	3.	3.	2.	2.	2.	2.	2.	6.	6.	6.	4.	3.	3.
20.	2.	2.	2.	2.	2.	2.	3.	3.	3.	2.	2.	2.	2.	1.	5.	5.	6.	4.	4.	4.
25.	2.	2.	3.	3.	3.	3.	3.	3.	3.	2.	2.	1.	1.	1.	5.	5.	5.	5.	4.	4.
30.	3.	3.	3.	3.	3.	3.	3.	3.	2.	1.	1.	1.	1.	1.	4.	4.	4.	5.	4.	4.
35.	3.	4.	3.	3.	3.	3.	3.	2.	1.	1.	1.	0.	0.	0.	3.	4.	4.	4.	4.	4.
40.	4.	4.	3.	3.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	3.	3.	3.	4.	3.	3.
45.	3.	3.	3.	3.	3.	3.	1.	1.	0.	0.	0.	0.	0.	0.	3.	3.	3.	3.	3.	2.
50.	3.	3.	3.	3.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	3.	3.	3.	2.	2.	2.
55.	3.	3.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.
60.	3.	3.	3.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.
65.	2.	3.	3.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
70.	2.	3.	3.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
75.	2.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.
80.	2.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
85.	2.	2.	3.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
90.	2.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
95.	2.	2.	3.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
100.	2.	2.	3.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
105.	2.	3.	2.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
110.	2.	2.	2.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
115.	2.	2.	2.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
120.	2.	2.	2.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
125.	2.	2.	2.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.
130.	2.	2.	3.	3.	3.	1.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	3.	2.	2.	1.
135.	2.	2.	3.	3.	3.	1.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	3.	2.	2.	1.
140.	2.	3.	3.	3.	3.	2.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	3.	2.	2.	2.
145.	2.	3.	3.	3.	3.	2.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	3.	2.	2.	2.
150.	2.	3.	3.	3.	4.	2.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	3.	2.	2.	1.
155.	2.	3.	3.	4.	4.	2.	0.	0.	0.	0.	0.	0.	0.	0.	4.	4.	4.	2.	2.	1.
160.	2.	3.	3.	4.	4.	3.	0.	1.	1.	1.	1.	1.	0.	0.	4.	4.	4.	3.	2.	1.
165.	2.	3.	3.	4.	5.	4.	0.	1.	1.	1.	1.	1.	1.	1.	5.	5.	5.	3.	2.	1.
170.	2.	3.	3.	4.	5.	5.	1.	2.	2.	2.	2.	2.	2.	2.	5.	5.	5.	3.	2.	1.
175.	2.	3.	3.	4.	5.	6.	2.	3.	3.	3.	3.	3.	3.	3.	5.	5.	5.	2.	2.	1.
180.	2.	2.	3.	3.	4.	6.	2.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	2.	1.	1.
185.	2.	2.	2.	3.	4.	5.	3.	5.	5.	5.	5.	5.	5.	5.	3.	3.	3.	1.	1.	1.
190.	2.	2.	2.	3.	3.	4.	4.	6.	5.	5.	5.	5.	5.	5.	2.	2.	2.	1.	1.	1.
195.	2.	2.	3.	3.	3.	4.	4.	6.	5.	5.	5.	5.	5.	5.	1.	1.	1.	1.	1.	1.
200.	3.	3.	3.	3.	3.	4.	5.	6.	5.	4.	4.	4.	4.	4.	1.	1.	1.	2.	2.	2.
205.	3.	3.	3.	3.	3.	4.	5.	6.	5.	4.	4.	4.	4.	4.	1.	1.	1.	2.	2.	2.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 BUILD 1-HOUR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20	REC21	REC22
210.	3.	3.	3.	3.	3.	3.	5.	6.	5.	4.	4.	4.	4.	4.	1.	1.	1.	3.	3.	3.		
215.	2.	2.	2.	3.	3.	3.	5.	6.	5.	5.	4.	4.	4.	4.	1.	1.	2.	3.	3.	3.		
220.	2.	2.	2.	2.	2.	2.	5.	6.	5.	5.	4.	4.	4.	4.	1.	2.	2.	3.	3.	3.		
225.	1.	1.	1.	1.	1.	1.	4.	5.	5.	4.	4.	4.	4.	4.	1.	2.	2.	2.	2.	2.		
230.	1.	1.	1.	1.	1.	1.	4.	4.	5.	4.	4.	4.	4.	3.	1.	2.	2.	2.	2.	2.		
235.	0.	0.	0.	1.	1.	1.	3.	4.	4.	4.	4.	4.	3.	3.	1.	1.	2.	2.	2.	2.		
240.	0.	0.	0.	1.	0.	0.	3.	4.	4.	4.	3.	3.	3.	3.	1.	1.	2.	2.	2.	2.		
245.	0.	0.	0.	0.	0.	0.	2.	4.	4.	4.	3.	3.	3.	3.	1.	1.	1.	2.	2.	2.		
250.	0.	0.	0.	0.	0.	0.	2.	3.	4.	3.	3.	3.	3.	3.	1.	1.	1.	2.	1.	1.		
255.	0.	0.	0.	0.	0.	0.	2.	3.	4.	3.	3.	3.	3.	3.	1.	1.	1.	2.	1.	1.		
260.	0.	0.	0.	0.	0.	0.	2.	3.	4.	3.	3.	3.	3.	3.	1.	1.	1.	2.	1.	1.		
265.	0.	0.	0.	0.	0.	0.	2.	2.	4.	3.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
270.	0.	0.	0.	0.	0.	0.	1.	2.	4.	3.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
275.	0.	0.	0.	0.	0.	0.	1.	2.	3.	3.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
280.	0.	0.	0.	0.	0.	0.	1.	2.	3.	3.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
285.	0.	0.	0.	0.	0.	0.	1.	2.	3.	3.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
290.	0.	0.	0.	0.	0.	0.	1.	2.	3.	3.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
295.	0.	0.	0.	0.	0.	0.	1.	2.	3.	3.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
300.	0.	0.	0.	0.	0.	0.	1.	2.	3.	3.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
305.	0.	0.	0.	0.	0.	0.	1.	2.	3.	4.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
310.	0.	0.	0.	0.	0.	0.	1.	2.	3.	4.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
315.	0.	0.	0.	0.	0.	0.	1.	2.	3.	4.	4.	4.	4.	3.	1.	1.	1.	1.	1.	1.		
320.	0.	0.	0.	0.	0.	0.	1.	2.	3.	4.	4.	4.	4.	4.	1.	1.	1.	1.	1.	1.		
325.	0.	0.	0.	0.	0.	0.	1.	2.	3.	4.	4.	4.	4.	4.	1.	1.	1.	1.	1.	1.		
330.	0.	0.	0.	0.	0.	0.	1.	2.	3.	4.	4.	4.	4.	4.	1.	1.	1.	1.	1.	1.		
335.	0.	0.	0.	0.	0.	0.	1.	2.	3.	4.	4.	4.	4.	4.	1.	1.	2.	1.	1.	1.		
340.	0.	0.	0.	0.	0.	0.	1.	2.	3.	4.	4.	4.	5.	5.	1.	1.	2.	2.	2.	1.		
345.	0.	0.	0.	0.	0.	0.	1.	2.	3.	4.	4.	5.	5.	5.	2.	2.	2.	2.	2.	1.		
350.	0.	0.	0.	0.	0.	0.	2.	2.	3.	4.	4.	5.	5.	5.	2.	2.	2.	2.	2.	1.		
355.	0.	0.	0.	0.	0.	0.	2.	2.	3.	3.	4.	4.	4.	5.	3.	3.	3.	2.	2.	2.		
MAX	4.	4.	3.	4.	5.	6.	5.	6.	5.	5.	5.	5.	5.	5.	6.	6.	6.	5.	4.	4.		
DEGR.	40	35	165	165	170	180	210	210	190	190	190	190	350	345	15	15	15	30	30	30		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 BUILD 1-HOUR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
0.	4.	4.
5.	5.	3.
10.	6.	2.
15.	6.	2.
20.	5.	1.
25.	4.	1.
30.	4.	0.
35.	3.	0.
40.	3.	0.
45.	3.	0.
50.	3.	0.
55.	2.	0.
60.	2.	0.
65.	2.	0.
70.	2.	0.
75.	2.	0.
80.	2.	0.
85.	2.	0.
90.	2.	0.
95.	2.	0.
100.	2.	0.
105.	2.	0.
110.	2.	0.
115.	2.	0.
120.	2.	0.
125.	2.	0.
130.	3.	0.
135.	3.	0.
140.	3.	0.
145.	3.	0.
150.	3.	0.
155.	4.	0.
160.	4.	0.
165.	4.	1.
170.	5.	2.
175.	4.	3.
180.	4.	4.
185.	3.	4.
190.	2.	5.
195.	1.	4.
200.	0.	4.
205.	1.	4.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 BUILD 1-HOUR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
210.	1.	4.
215.	1.	4.
220.	1.	4.
225.	1.	4.
230.	1.	3.
235.	1.	3.
240.	1.	3.
245.	1.	3.
250.	1.	3.
255.	1.	3.
260.	1.	3.
265.	1.	3.
270.	1.	3.
275.	1.	3.
280.	1.	3.
285.	1.	3.
290.	1.	3.
295.	1.	3.
300.	1.	3.
305.	1.	3.
310.	1.	3.
315.	1.	3.
320.	1.	4.
325.	1.	4.
330.	1.	4.
335.	1.	4.
340.	1.	5.
345.	2.	5.
350.	2.	5.
355.	3.	5.
MAX	6.	5.
DEGR.	10	350

THE HIGHEST CONCENTRATION OF 6. ug/m**3 OCCURRED AT RECEPTOR REC8 .

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

DATE : 9/10/10
TIME : 10:49:58

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	1588.	0.0	0.0	67.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	1393.	0.0	0.0	67.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	1001.	0.0	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	42.	0.0	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	42.	0.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1400.0	*	322.	180.	AG	959.	0.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

DATE : 9/10/10
TIME : 10:49:58

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0
21. RECEPTOR NO. 7-21	668.0	1533.0	6.0
22. RECEPTOR NO. 7-22	700.0	1533.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	1.	1.	1.	1.	2.	3.	3.	3.	4.	4.	4.	4.	4.	4.	4.	2.	2.	2.
5.	1.	0.	1.	1.	1.	1.	2.	3.	3.	3.	3.	3.	3.	3.	5.	5.	5.	3.	3.	2.
10.	1.	1.	1.	1.	1.	1.	3.	3.	3.	3.	3.	3.	3.	2.	6.	6.	6.	3.	3.	3.
15.	1.	1.	2.	2.	2.	2.	3.	3.	3.	3.	2.	2.	2.	2.	6.	6.	6.	4.	4.	3.
20.	2.	2.	2.	2.	2.	2.	4.	4.	3.	3.	2.	2.	2.	2.	5.	6.	6.	5.	4.	4.
25.	3.	3.	3.	3.	3.	3.	4.	4.	3.	2.	2.	2.	1.	1.	5.	5.	5.	5.	5.	5.
30.	4.	4.	4.	4.	4.	4.	4.	4.	2.	2.	1.	1.	1.	1.	4.	4.	4.	5.	5.	5.
35.	4.	4.	4.	4.	4.	4.	3.	3.	2.	1.	1.	1.	0.	0.	4.	4.	4.	5.	4.	4.
40.	4.	4.	4.	4.	4.	4.	2.	2.	1.	1.	0.	0.	0.	0.	3.	3.	3.	4.	4.	3.
45.	4.	4.	4.	4.	3.	3.	2.	1.	0.	0.	0.	0.	0.	0.	3.	3.	3.	3.	3.	3.
50.	3.	4.	3.	3.	3.	3.	1.	1.	0.	0.	0.	0.	0.	0.	2.	2.	2.	3.	2.	2.
55.	3.	3.	3.	3.	3.	3.	1.	1.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.
60.	3.	3.	3.	3.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.
65.	3.	3.	3.	3.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
70.	3.	3.	3.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
75.	2.	3.	3.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
80.	2.	3.	3.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
85.	2.	3.	3.	3.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
90.	2.	3.	3.	3.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
95.	2.	3.	3.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
100.	2.	3.	3.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
105.	2.	3.	3.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
110.	2.	2.	3.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
115.	2.	2.	3.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
120.	2.	2.	3.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
125.	2.	2.	3.	3.	3.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.
130.	2.	2.	3.	3.	3.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	2.
135.	2.	2.	3.	3.	3.	2.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	3.	2.	2.	1.
140.	2.	3.	3.	3.	3.	2.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	3.	2.	2.	1.
145.	2.	3.	3.	3.	3.	2.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	3.	2.	2.	2.
150.	2.	3.	4.	3.	4.	2.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	3.	2.	2.	2.
155.	2.	3.	3.	4.	4.	3.	0.	1.	0.	0.	0.	0.	0.	0.	4.	4.	4.	2.	2.	2.
160.	2.	3.	4.	4.	4.	3.	0.	1.	1.	1.	1.	0.	0.	0.	4.	4.	4.	3.	2.	1.
165.	2.	3.	4.	4.	5.	4.	1.	1.	1.	1.	1.	1.	1.	1.	4.	5.	5.	3.	2.	1.
170.	2.	3.	4.	4.	5.	5.	1.	2.	2.	2.	2.	2.	2.	2.	5.	5.	5.	3.	2.	1.
175.	2.	3.	3.	4.	5.	6.	2.	3.	3.	3.	3.	3.	3.	3.	4.	5.	5.	2.	2.	1.
180.	2.	3.	3.	4.	5.	6.	3.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	2.	1.	1.
185.	2.	2.	3.	3.	4.	6.	3.	5.	5.	5.	5.	5.	5.	4.	3.	3.	3.	1.	1.	1.
190.	2.	3.	3.	3.	4.	5.	4.	6.	5.	5.	5.	5.	5.	5.	2.	2.	2.	1.	1.	1.
195.	3.	3.	3.	3.	3.	4.	4.	6.	5.	5.	5.	5.	5.	4.	1.	1.	1.	1.	1.	2.
200.	3.	3.	3.	4.	4.	4.	5.	6.	5.	4.	4.	4.	4.	4.	1.	1.	1.	2.	2.	2.
205.	3.	4.	4.	4.	4.	4.	5.	6.	5.	4.	4.	4.	4.	4.	1.	1.	1.	3.	3.	3.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20	REC21	REC22
210. *	3.	3.	3.	4.	4.	4.	6.	6.	5.	5.	4.	4.	4.	4.	1.	1.	1.	3.	3.	3.		
215. *	3.	3.	3.	3.	3.	3.	6.	6.	6.	5.	4.	4.	4.	4.	1.	2.	2.	4.	4.	4.		
220. *	2.	2.	2.	2.	2.	2.	5.	6.	6.	5.	4.	4.	4.	4.	1.	2.	2.	3.	3.	3.		
225. *	1.	1.	1.	2.	2.	2.	4.	5.	5.	5.	4.	4.	4.	4.	2.	2.	2.	3.	3.	3.		
230. *	1.	1.	1.	1.	1.	1.	4.	5.	5.	4.	4.	4.	4.	4.	2.	2.	2.	2.	3.	3.		
235. *	1.	1.	0.	1.	1.	1.	4.	4.	5.	4.	4.	4.	4.	3.	1.	2.	2.	2.	2.	2.		
240. *	0.	0.	0.	1.	1.	1.	3.	4.	4.	4.	4.	3.	3.	3.	1.	2.	2.	2.	2.	2.		
245. *	0.	0.	0.	0.	0.	0.	3.	4.	4.	4.	3.	3.	3.	3.	1.	1.	2.	2.	2.	2.		
250. *	0.	0.	0.	0.	0.	0.	2.	3.	4.	4.	3.	3.	3.	3.	1.	1.	1.	2.	2.	2.		
255. *	0.	0.	0.	0.	0.	0.	2.	3.	4.	4.	3.	3.	3.	3.	1.	1.	1.	2.	2.	1.		
260. *	0.	0.	0.	0.	0.	0.	2.	3.	4.	4.	3.	3.	3.	3.	1.	1.	1.	2.	1.	1.		
265. *	0.	0.	0.	0.	0.	0.	2.	3.	4.	4.	3.	3.	3.	3.	1.	1.	1.	2.	1.	1.		
270. *	0.	0.	0.	0.	0.	0.	2.	3.	4.	4.	3.	3.	3.	3.	1.	1.	1.	2.	1.	1.		
275. *	0.	0.	0.	0.	0.	0.	2.	3.	4.	4.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
280. *	0.	0.	0.	0.	0.	0.	1.	3.	4.	4.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
285. *	0.	0.	0.	0.	0.	0.	1.	3.	3.	3.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
290. *	0.	0.	0.	0.	0.	0.	1.	2.	3.	3.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
295. *	0.	0.	0.	0.	0.	0.	1.	2.	4.	3.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
300. *	0.	0.	0.	0.	0.	0.	1.	2.	4.	4.	3.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
305. *	0.	0.	0.	0.	0.	0.	1.	2.	4.	4.	4.	3.	3.	3.	1.	1.	1.	1.	1.	1.		
310. *	0.	0.	0.	0.	0.	0.	1.	2.	4.	4.	4.	4.	3.	3.	1.	1.	1.	1.	1.	1.		
315. *	0.	0.	0.	0.	0.	0.	1.	2.	3.	4.	4.	4.	3.	3.	1.	1.	1.	2.	1.	1.		
320. *	0.	0.	0.	0.	0.	0.	1.	2.	3.	4.	4.	4.	4.	4.	1.	1.	1.	2.	1.	1.		
325. *	0.	0.	0.	0.	0.	0.	2.	2.	3.	4.	4.	4.	4.	4.	1.	1.	2.	2.	1.	1.		
330. *	0.	0.	0.	0.	0.	0.	2.	2.	3.	4.	4.	4.	4.	4.	1.	1.	2.	2.	1.	1.		
335. *	0.	0.	0.	0.	0.	0.	2.	2.	3.	4.	4.	4.	4.	4.	2.	2.	2.	2.	2.	1.		
340. *	0.	0.	0.	0.	0.	0.	2.	2.	3.	4.	4.	5.	5.	5.	1.	2.	2.	2.	2.	1.		
345. *	0.	0.	0.	0.	0.	0.	2.	2.	3.	4.	4.	5.	5.	5.	2.	2.	2.	2.	2.	1.		
350. *	0.	0.	0.	0.	0.	0.	2.	2.	3.	4.	4.	5.	5.	5.	2.	2.	3.	2.	2.	2.		
355. *	0.	0.	0.	0.	0.	0.	2.	3.	3.	4.	4.	4.	4.	5.	3.	3.	3.	2.	2.	2.		
MAX *	4.	4.	4.	4.	5.	6.	6.	6.	6.	5.	5.	5.	5.	5.	6.	6.	6.	5.	5.	5.		
DEGR. *	35	35	35	165	170	180	210	210	215	190	190	190	345	345	15	15	15	25	30	30		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
0.	4.	4.
5.	5.	3.
10.	6.	2.
15.	6.	2.
20.	5.	2.
25.	5.	1.
30.	4.	1.
35.	3.	0.
40.	3.	0.
45.	3.	0.
50.	2.	0.
55.	2.	0.
60.	2.	0.
65.	2.	0.
70.	2.	0.
75.	2.	0.
80.	2.	0.
85.	2.	0.
90.	2.	0.
95.	2.	0.
100.	2.	0.
105.	2.	0.
110.	2.	0.
115.	2.	0.
120.	2.	0.
125.	2.	0.
130.	2.	0.
135.	3.	0.
140.	3.	0.
145.	3.	0.
150.	3.	0.
155.	4.	0.
160.	4.	0.
165.	4.	1.
170.	4.	2.
175.	4.	2.
180.	4.	4.
185.	2.	4.
190.	2.	4.
195.	1.	4.
200.	1.	4.
205.	1.	4.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
210.	1.	4.
215.	1.	4.
220.	1.	4.
225.	1.	4.
230.	1.	4.
235.	1.	3.
240.	1.	3.
245.	1.	3.
250.	1.	3.
255.	1.	3.
260.	1.	3.
265.	1.	3.
270.	1.	3.
275.	1.	3.
280.	1.	3.
285.	1.	3.
290.	1.	3.
295.	1.	3.
300.	1.	3.
305.	1.	3.
310.	1.	3.
315.	1.	3.
320.	1.	4.
325.	1.	4.
330.	1.	4.
335.	1.	4.
340.	2.	5.
345.	2.	5.
350.	2.	5.
355.	3.	5.
MAX	6.	5.
DEGR.	15	345

THE HIGHEST CONCENTRATION OF 6. ug/m**3 OCCURRED AT RECEPTOR REC8 .

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 12: 2:32

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	1596.0	3465.0	1596.0	4465.0	*	1000.	360.	AG	763.	0.0	0.0	55.7		
2. RTE 161 S FREE FLOW	*	1608.0	3465.0	1608.0	2465.0	*	1000.	180.	AG	1201.	0.0	0.0	79.7		
3. SITE DRIVE FRE FLOW	*	1600.0	3455.0	2100.0	3455.0	*	500.	90.	AG	2060.	0.0	0.0	79.7		
4. SITE DRIVE FRE FLOW	*	2100.0	3455.0	2453.6	3101.4	*	500.	135.	AG	2060.	0.0	0.0	43.7		
5. RT 161 NB RGT QUEUE	*	1632.0	3425.0	1632.0	-807.5	*	4232.	180.	AG	0.	100.0	0.0	12.0	2.04	215.0
6. RT 161 NB THR QUEUE	*	1614.0	3425.0	1614.0	3328.0	*	97.	180.	AG	0.	100.0	0.0	24.0	0.73	4.9
7. RT 161 SB LFT QUEUE	*	1596.0	3497.0	1596.0	3559.8	*	63.	360.	AG	0.	100.0	0.0	12.0	0.53	3.2
8. RT 161 SB THR QUEUE	*	1584.0	3497.0	1584.0	3551.5	*	55.	360.	AG	0.	100.0	0.0	12.0	0.30	2.8
9. SITE DR. LEFT QUEUE	*	1646.0	3461.0	1772.3	3461.0	*	126.	90.	AG	0.	100.0	0.0	24.0	0.72	6.4
10. SITE DR. RIGHT QUEUE	*	1646.0	3473.0	1702.3	3473.0	*	56.	90.	AG	0.	100.0	0.0	12.0	0.32	2.9

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 12: 2:32

5. RT 161 NB RGT QUEUE *	90	65	2.0	761	1600	0.08	2	3
6. RT 161 NB THR QUEUE *	90	65	2.0	547	1600	0.08	2	3
7. RT 161 SB LFT QUEUE *	90	68	2.0	169	1600	0.08	2	3
8. RT 161 SB THR QUEUE *	90	43	2.0	232	1600	0.08	2	3
9. SITE DR. LEFT QUEUE *	90	50	2.0	924	1600	0.08	2	3
10. SITE DR. RIGHT QUEUE*	90	50	2.0	206	1600	0.08	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 9-1	1568.0	3305.0	6.0
2. RECEPTOR NO. 9-2	1568.0	3385.0	6.0
3. RECEPTOR NO. 9-3	1568.0	3465.0	6.0
4. RECEPTOR NO. 9-4	1568.0	3505.0	6.0
5. RECEPTOR NO. 9-5	1568.0	3545.0	6.0
6. RECEPTOR NO. 9-6	1568.0	3585.0	6.0
7. RECEPTOR NO. 9-7	1568.0	3625.0	6.0
8. RECEPTOR NO. 9-8	1568.0	3665.0	6.0
9. RECEPTOR NO. 9-9	1624.0	3665.0	6.0
10. RECEPTOR NO. 9-10	1624.0	3585.0	6.0
11. RECEPTOR NO. 9-11	1624.0	3545.0	6.0
12. RECEPTOR NO. 9-12	1624.0	3513.0	6.0
13. RECEPTOR NO. 9-13	1624.0	3495.0	6.0
14. RECEPTOR NO. 9-14	1658.0	3495.0	6.0
15. RECEPTOR NO. 9-15	1698.0	3495.0	6.0
16. RECEPTOR NO. 9-16	1738.0	3495.0	6.0
17. RECEPTOR NO. 9-17	1778.0	3495.0	6.0
18. RECEPTOR NO. 9-18	1778.0	3415.0	6.0
19. RECEPTOR NO. 9-19	1698.0	3415.0	6.0
20. RECEPTOR NO. 9-20	1648.0	3415.0	6.0
21. RECEPTOR NO. 9-21	1648.0	3385.0	6.0
22. RECEPTOR NO. 9-22	1648.0	3345.0	6.0
23. RECEPTOR NO. 9-23	1648.0	3305.0	6.0
24. RECEPTOR NO. 9-24	1648.0	3265.0	6.0
25. RECEPTOR NO. 9-25	1648.0	3150.0	6.0
26. RECEPTOR NO. 9-26	1900.0	3495.0	6.0
27. RECEPTOR NO. 9-27	2000.0	3495.0	6.0
28. RECEPTOR NO. 9-28	1568.0	3800.0	6.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	2.	2.	2.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	2.	3.	3.
5.	2.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	2.	3.	3.
10.	3.	2.	2.	2.	2.	2.	2.	2.	0.	0.	0.	1.	1.	0.	0.	0.	0.	2.	2.	3.
15.	3.	2.	2.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	3.
20.	3.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	3.
25.	3.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	3.
30.	4.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	3.
35.	4.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	3.
40.	4.	3.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	3.
45.	4.	3.	1.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	3.
50.	4.	4.	1.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	3.
55.	3.	4.	1.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	3.
60.	3.	4.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	3.
65.	3.	4.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	4.
70.	2.	4.	2.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	4.
75.	2.	4.	3.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	4.	4.
80.	2.	4.	4.	2.	1.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.	1.	1.	3.	4.	4.
85.	2.	4.	5.	3.	2.	1.	1.	1.	0.	0.	0.	1.	2.	2.	2.	2.	2.	3.	3.	4.
90.	2.	3.	5.	3.	2.	1.	1.	1.	0.	0.	0.	1.	3.	3.	3.	2.	2.	3.	3.	3.
95.	2.	3.	6.	4.	2.	1.	1.	1.	0.	0.	1.	2.	4.	4.	3.	3.	3.	2.	2.	2.
100.	2.	3.	5.	5.	3.	2.	1.	1.	0.	1.	1.	3.	5.	4.	4.	4.	4.	2.	2.	1.
105.	2.	2.	4.	5.	4.	2.	2.	1.	0.	1.	2.	3.	5.	5.	4.	4.	4.	1.	1.	1.
110.	1.	2.	4.	5.	4.	2.	2.	2.	1.	2.	2.	4.	5.	5.	4.	4.	4.	1.	1.	1.
115.	1.	2.	3.	4.	4.	3.	2.	2.	1.	2.	2.	4.	5.	4.	4.	4.	4.	1.	1.	1.
120.	1.	2.	3.	4.	4.	3.	2.	2.	1.	2.	2.	3.	4.	4.	4.	3.	3.	0.	0.	0.
125.	2.	2.	3.	3.	4.	3.	2.	2.	1.	2.	2.	3.	4.	4.	3.	3.	3.	0.	0.	0.
130.	2.	2.	3.	3.	4.	3.	2.	2.	1.	2.	2.	3.	3.	4.	3.	3.	2.	0.	0.	0.
135.	2.	2.	3.	3.	4.	3.	2.	2.	1.	2.	2.	3.	3.	3.	3.	3.	2.	0.	0.	0.
140.	2.	2.	3.	3.	4.	3.	2.	2.	1.	2.	2.	3.	3.	3.	3.	3.	2.	0.	0.	0.
145.	2.	2.	3.	3.	3.	3.	2.	2.	1.	2.	2.	3.	3.	3.	3.	3.	2.	0.	0.	0.
150.	2.	2.	3.	3.	4.	3.	2.	2.	1.	2.	2.	2.	3.	3.	3.	3.	2.	0.	0.	0.
155.	2.	2.	3.	3.	4.	4.	3.	3.	1.	2.	2.	2.	3.	3.	3.	2.	2.	0.	0.	0.
160.	2.	2.	3.	3.	4.	4.	3.	3.	1.	2.	2.	3.	3.	3.	3.	2.	2.	0.	0.	0.
165.	3.	3.	3.	3.	4.	4.	3.	3.	2.	2.	2.	3.	4.	3.	2.	2.	2.	0.	0.	0.
170.	3.	3.	3.	3.	4.	4.	4.	4.	2.	3.	3.	4.	4.	3.	3.	2.	2.	0.	0.	1.
175.	3.	3.	3.	3.	3.	4.	4.	3.	3.	3.	4.	5.	6.	4.	3.	3.	2.	0.	0.	2.
180.	2.	2.	2.	2.	2.	3.	3.	3.	3.	4.	5.	6.	6.	5.	4.	3.	2.	0.	1.	3.
185.	1.	1.	1.	1.	2.	2.	2.	2.	3.	4.	4.	5.	6.	5.	4.	4.	3.	0.	1.	4.
190.	1.	1.	1.	1.	1.	1.	1.	1.	3.	3.	4.	5.	5.	6.	4.	4.	3.	1.	2.	4.
195.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	3.	4.	5.	5.	4.	4.	3.	1.	2.	4.
200.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	3.	4.	5.	4.	4.	3.	1.	2.	4.
205.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	3.	4.	5.	4.	3.	1.	2.	3.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 BUILD 1-HR FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28													
210. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	4.	4.	4.	3.	1.	2.	3.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	3.	5.	4.	4.	1.	2.	3.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	3.	5.	4.	4.	1.	2.	3.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	2.	3.	4.	4.	4.	1.	2.	3.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	2.	4.	4.	4.	1.	2.	3.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	2.	4.	4.	4.	1.	2.	3.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	2.	4.	4.	4.	1.	2.	3.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	2.	3.	4.	4.	1.	2.	3.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	3.	4.	4.	1.	2.	3.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	3.	4.	1.	2.	3.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	3.	3.	2.	2.	3.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	2.	2.	2.	3.	2.	2.	3.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	3.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	3.	3.	3.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	3.	3.	3.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	3.	3.	3.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	4.	3.	3.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	4.	3.	3.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	4.	3.	3.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	4.	3.	3.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	1.	1.	1.	0.	3.	3.	3.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	1.	1.	1.	0.	3.	3.	3.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	1.	1.	1.	0.	3.	3.	3.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	1.	1.	1.	0.	3.	3.	3.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	1.	1.	0.	0.	3.	3.	3.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	1.	1.	0.	0.	3.	3.	3.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	1.	1.	1.	0.	3.	3.	4.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	0.	0.	2.	3.	4.
350. *	1.	0.	1.	1.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	0.	0.	0.	2.	3.	4.
355. *	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	1.	0.	0.	0.	2.	3.	4.
MAX *	4.	4.	6.	5.	4.	4.	4.	4.	3.	4.	5.	6.	6.	6.	5.	4.	4.	4.	4.	4.
DEGR. *	40	70	95	105	110	165	170	170	185	180	180	180	185	190	215	230	240	300	80	75

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
0.	3.	3.	3.	3.	3.	0.	0.	1.
5.	2.	2.	2.	2.	2.	0.	0.	2.
10.	2.	2.	2.	2.	2.	0.	0.	2.
15.	2.	2.	2.	1.	1.	0.	0.	2.
20.	2.	2.	2.	1.	1.	0.	0.	1.
25.	2.	2.	1.	1.	1.	0.	0.	1.
30.	2.	2.	1.	1.	1.	0.	0.	1.
35.	2.	2.	1.	1.	1.	0.	0.	1.
40.	2.	2.	1.	1.	1.	0.	0.	1.
45.	2.	2.	1.	1.	1.	0.	0.	1.
50.	2.	2.	1.	1.	1.	0.	0.	1.
55.	2.	2.	1.	1.	1.	0.	0.	1.
60.	2.	2.	1.	1.	1.	0.	0.	1.
65.	2.	2.	1.	1.	0.	0.	0.	1.
70.	2.	1.	1.	1.	0.	0.	0.	1.
75.	2.	1.	1.	1.	0.	0.	0.	1.
80.	2.	1.	1.	0.	0.	1.	0.	1.
85.	1.	1.	0.	0.	0.	1.	1.	1.
90.	1.	1.	0.	0.	0.	2.	1.	1.
95.	1.	0.	0.	0.	0.	2.	2.	1.
100.	1.	0.	0.	0.	0.	3.	2.	1.
105.	0.	0.	0.	0.	0.	4.	2.	1.
110.	0.	0.	0.	0.	0.	4.	3.	1.
115.	0.	0.	0.	0.	0.	4.	4.	1.
120.	0.	0.	0.	0.	0.	4.	4.	2.
125.	0.	0.	0.	0.	0.	3.	4.	2.
130.	0.	0.	0.	0.	0.	3.	4.	2.
135.	0.	0.	0.	0.	0.	2.	3.	2.
140.	0.	0.	0.	0.	0.	2.	3.	2.
145.	0.	0.	0.	0.	0.	2.	2.	2.
150.	0.	0.	0.	0.	0.	2.	2.	2.
155.	0.	0.	0.	0.	0.	2.	2.	2.
160.	0.	0.	0.	0.	0.	2.	2.	2.
165.	0.	0.	0.	0.	0.	2.	2.	3.
170.	1.	1.	1.	1.	1.	2.	2.	3.
175.	2.	2.	2.	2.	2.	2.	2.	3.
180.	3.	3.	3.	3.	3.	2.	2.	2.
185.	3.	3.	3.	3.	3.	2.	2.	2.
190.	4.	3.	3.	3.	3.	2.	2.	1.
195.	3.	3.	3.	3.	3.	2.	2.	0.
200.	3.	3.	3.	3.	3.	2.	2.	0.
205.	3.	2.	2.	2.	2.	2.	2.	0.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 BUILD 1-HR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
210.	3.	2.	2.	2.	2.	2.	2.	0.
215.	3.	2.	2.	2.	2.	3.	2.	0.
220.	3.	2.	2.	2.	2.	3.	2.	0.
225.	3.	2.	2.	2.	2.	3.	3.	0.
230.	3.	2.	2.	2.	2.	3.	3.	0.
235.	3.	2.	2.	2.	2.	3.	3.	0.
240.	3.	2.	2.	2.	2.	3.	3.	0.
245.	2.	2.	2.	2.	2.	4.	3.	0.
250.	2.	2.	2.	2.	2.	4.	4.	0.
255.	2.	2.	2.	2.	2.	4.	4.	0.
260.	2.	2.	2.	2.	2.	4.	4.	0.
265.	2.	2.	2.	2.	2.	3.	4.	0.
270.	2.	2.	2.	2.	2.	3.	3.	0.
275.	2.	2.	2.	2.	2.	2.	2.	0.
280.	2.	2.	2.	2.	2.	1.	1.	0.
285.	2.	2.	2.	2.	2.	1.	1.	0.
290.	2.	2.	2.	2.	2.	0.	0.	0.
295.	2.	2.	2.	2.	2.	0.	0.	0.
300.	3.	3.	2.	2.	2.	0.	0.	0.
305.	3.	3.	2.	2.	2.	0.	0.	0.
310.	3.	3.	2.	2.	2.	0.	0.	0.
315.	3.	3.	3.	2.	2.	0.	0.	0.
320.	3.	3.	3.	2.	2.	0.	0.	0.
325.	3.	3.	3.	2.	2.	0.	0.	0.
330.	3.	4.	3.	3.	2.	0.	0.	0.
335.	4.	4.	4.	3.	3.	0.	0.	0.
340.	4.	4.	4.	4.	3.	0.	0.	0.
345.	4.	4.	4.	4.	4.	0.	0.	0.
350.	4.	4.	4.	4.	4.	0.	0.	0.
355.	3.	3.	4.	4.	4.	0.	0.	1.
MAX	4.	4.	4.	4.	4.	4.	4.	3.
DEGR.	345	345	340	345	350	255	125	170

THE HIGHEST CONCENTRATION OF 6. ug/m**3 OCCURRED AT RECEPTOR REC13.

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

DATE : 9/10/10
TIME : 12: 2:48

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	1596.0	3465.0	1596.0	4465.0	*	1000.	360.	AG	1019.	0.0	0.0	55.7		
2. RTE 161 S FREE FLOW	*	1608.0	3465.0	1608.0	2465.0	*	1000.	180.	AG	1398.	0.0	0.0	79.7		
3. SITE DRIVE FRE FLOW	*	1600.0	3455.0	2100.0	3455.0	*	500.	90.	AG	2060.	0.0	0.0	79.7		
4. SITE DRIVE FRE FLOW	*	2100.0	3455.0	2453.6	3101.4	*	500.	135.	AG	2060.	0.0	0.0	43.7		
5. RT 161 NB RGT QUEUE	*	1632.0	3425.0	1632.0	-838.6	*	4264.	180.	AG	0.	100.0	0.0	12.0	2.05	216.6
6. RT 161 NB THR QUEUE	*	1614.0	3425.0	1614.0	2848.4	*	577.	180.	AG	0.	100.0	0.0	24.0	1.10	29.3
7. RT 161 SB LFT QUEUE	*	1596.0	3497.0	1596.0	3558.7	*	62.	360.	AG	0.	100.0	0.0	12.0	0.52	3.1
8. RT 161 SB THR QUEUE	*	1584.0	3497.0	1584.0	3607.0	*	110.	360.	AG	0.	100.0	0.0	12.0	0.61	5.6
9. SITE DR. LEFT QUEUE	*	1646.0	3461.0	1772.9	3461.0	*	127.	90.	AG	0.	100.0	0.0	24.0	0.73	6.4
10. SITE DR. RIGHT QUEUE	*	1646.0	3473.0	1701.0	3473.0	*	55.	90.	AG	0.	100.0	0.0	12.0	0.31	2.8

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

DATE : 9/10/10
TIME : 12: 2:48

5. RT 161 NB RGT QUEUE *	90	65	2.0	764	1600	0.08	2	3
6. RT 161 NB THR QUEUE *	90	65	2.0	818	1600	0.08	2	3
7. RT 161 SB LFT QUEUE *	90	68	2.0	166	1600	0.08	2	3
8. RT 161 SB THR QUEUE *	90	43	2.0	468	1600	0.08	2	3
9. SITE DR. LEFT QUEUE *	90	50	2.0	929	1600	0.08	2	3
10. SITE DR. RIGHT QUEUE*	90	50	2.0	201	1600	0.08	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 9-1	1568.0	3305.0	6.0
2. RECEPTOR NO. 9-2	1568.0	3385.0	6.0
3. RECEPTOR NO. 9-3	1568.0	3465.0	6.0
4. RECEPTOR NO. 9-4	1568.0	3505.0	6.0
5. RECEPTOR NO. 9-5	1568.0	3545.0	6.0
6. RECEPTOR NO. 9-6	1568.0	3585.0	6.0
7. RECEPTOR NO. 9-7	1568.0	3625.0	6.0
8. RECEPTOR NO. 9-8	1568.0	3665.0	6.0
9. RECEPTOR NO. 9-9	1624.0	3665.0	6.0
10. RECEPTOR NO. 9-10	1624.0	3585.0	6.0
11. RECEPTOR NO. 9-11	1624.0	3545.0	6.0
12. RECEPTOR NO. 9-12	1624.0	3513.0	6.0
13. RECEPTOR NO. 9-13	1624.0	3495.0	6.0
14. RECEPTOR NO. 9-14	1658.0	3495.0	6.0
15. RECEPTOR NO. 9-15	1698.0	3495.0	6.0
16. RECEPTOR NO. 9-16	1738.0	3495.0	6.0
17. RECEPTOR NO. 9-17	1778.0	3495.0	6.0
18. RECEPTOR NO. 9-18	1778.0	3415.0	6.0
19. RECEPTOR NO. 9-19	1698.0	3415.0	6.0
20. RECEPTOR NO. 9-20	1648.0	3415.0	6.0
21. RECEPTOR NO. 9-21	1648.0	3385.0	6.0
22. RECEPTOR NO. 9-22	1648.0	3345.0	6.0
23. RECEPTOR NO. 9-23	1648.0	3305.0	6.0
24. RECEPTOR NO. 9-24	1648.0	3265.0	6.0
25. RECEPTOR NO. 9-25	1648.0	3150.0	6.0
26. RECEPTOR NO. 9-26	1900.0	3495.0	6.0
27. RECEPTOR NO. 9-27	2000.0	3495.0	6.0
28. RECEPTOR NO. 9-28	1568.0	3800.0	6.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.	0.	0.	0.	2.	3.	4.
5.	3.	3.	3.	3.	2.	2.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	2.	3.	3.
10.	3.	3.	3.	3.	2.	2.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	0.	2.	2.	3.
15.	3.	3.	3.	3.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	3.
20.	4.	3.	2.	3.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	3.
25.	4.	2.	2.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	3.
30.	4.	3.	2.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	3.
35.	4.	3.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	3.
40.	4.	3.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	3.
45.	4.	3.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	3.
50.	4.	4.	2.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	3.
55.	4.	4.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	3.
60.	4.	4.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	3.
65.	4.	4.	2.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	4.
70.	3.	5.	3.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.	4.
75.	3.	5.	3.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	4.	4.
80.	3.	4.	4.	2.	2.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.	1.	1.	3.	4.	4.
85.	3.	4.	5.	3.	2.	1.	1.	1.	0.	0.	0.	1.	2.	2.	2.	2.	2.	3.	3.	4.
90.	3.	4.	6.	4.	2.	2.	1.	1.	0.	0.	0.	1.	3.	3.	3.	2.	2.	3.	3.	3.
95.	3.	3.	6.	4.	3.	2.	1.	1.	0.	0.	1.	2.	4.	4.	3.	3.	3.	2.	2.	2.
100.	3.	3.	5.	5.	3.	2.	1.	1.	0.	1.	1.	3.	5.	4.	4.	4.	4.	2.	2.	1.
105.	2.	3.	5.	5.	4.	3.	2.	2.	0.	1.	2.	3.	5.	5.	4.	4.	4.	1.	1.	1.
110.	2.	2.	4.	5.	4.	3.	2.	2.	1.	2.	2.	4.	5.	5.	4.	4.	4.	1.	1.	1.
115.	2.	2.	3.	5.	4.	3.	2.	2.	1.	2.	2.	4.	5.	4.	4.	4.	4.	1.	1.	1.
120.	2.	2.	3.	4.	4.	3.	2.	2.	1.	2.	2.	3.	4.	4.	4.	3.	3.	0.	0.	0.
125.	2.	2.	3.	3.	4.	3.	3.	2.	1.	2.	2.	3.	4.	4.	3.	3.	3.	0.	0.	0.
130.	2.	2.	3.	3.	4.	4.	3.	2.	1.	2.	2.	3.	3.	4.	3.	3.	2.	0.	0.	0.
135.	3.	3.	3.	3.	4.	3.	3.	2.	1.	2.	2.	3.	3.	3.	3.	3.	2.	0.	0.	0.
140.	3.	3.	3.	3.	4.	4.	3.	2.	1.	1.	2.	3.	3.	3.	3.	3.	2.	0.	0.	0.
145.	3.	3.	3.	3.	4.	4.	3.	2.	1.	2.	2.	3.	3.	3.	3.	3.	2.	0.	0.	0.
150.	3.	3.	3.	4.	4.	4.	3.	3.	1.	2.	2.	2.	3.	3.	3.	3.	2.	0.	0.	0.
155.	4.	4.	4.	4.	4.	4.	4.	3.	1.	2.	2.	2.	3.	3.	2.	2.	2.	0.	0.	0.
160.	4.	4.	4.	4.	4.	5.	4.	3.	1.	2.	2.	3.	3.	3.	3.	2.	2.	0.	0.	0.
165.	4.	4.	4.	4.	5.	5.	5.	4.	2.	2.	3.	3.	4.	3.	2.	2.	2.	0.	0.	1.
170.	4.	4.	4.	4.	5.	5.	5.	5.	3.	3.	4.	4.	5.	4.	3.	2.	2.	0.	0.	1.
175.	4.	4.	4.	4.	4.	4.	5.	4.	4.	4.	5.	6.	6.	5.	3.	3.	2.	0.	0.	3.
180.	3.	3.	3.	3.	3.	4.	4.	4.	4.	5.	6.	7.	7.	6.	4.	3.	2.	0.	1.	4.
185.	2.	2.	2.	2.	2.	2.	2.	2.	4.	5.	6.	7.	7.	6.	5.	4.	3.	1.	2.	5.
190.	1.	1.	1.	1.	1.	1.	1.	1.	4.	4.	5.	6.	6.	7.	5.	4.	3.	1.	2.	5.
195.	0.	0.	0.	0.	0.	0.	0.	0.	3.	4.	4.	4.	5.	6.	5.	4.	4.	1.	2.	5.
200.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	3.	4.	4.	6.	5.	4.	4.	2.	2.	4.
205.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	2.	3.	3.	5.	5.	4.	4.	2.	2.	4.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28													
210. *	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	3.	4.	5.	4.	4.	2.	2.	4.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	4.	5.	4.	4.	2.	2.	4.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	3.	5.	4.	4.	2.	2.	3.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	3.	4.	4.	4.	2.	2.	3.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.	2.	3.	4.	4.	4.	1.	2.	3.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	4.	4.	4.	1.	2.	3.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	2.	2.	4.	4.	4.	1.	2.	3.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	3.	4.	4.	1.	2.	3.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	2.	2.	3.	4.	4.	2.	2.	3.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	4.	4.	2.	2.	3.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	3.	3.	2.	2.	3.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	3.	2.	2.	3.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	3.	3.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	1.	2.	2.	3.	3.	3.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	1.	3.	3.	3.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	1.	3.	3.	3.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	1.	4.	3.	3.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	1.	1.	1.	4.	3.	3.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	1.	1.	1.	4.	3.	3.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	1.	1.	1.	1.	4.	3.	3.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	1.	4.	3.	3.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	1.	1.	1.	1.	4.	3.	3.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	1.	3.	3.	3.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	1.	1.	1.	1.	3.	4.	4.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	1.	1.	3.	3.	4.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	1.	1.	3.	3.	4.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	1.	1.	3.	3.	4.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	1.	0.	3.	3.	4.
350. *	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	0.	0.	2.	3.	4.
355. *	2.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	1.	0.	0.	0.	2.	3.	4.
MAX *	4.	5.	6.	5.	5.	5.	5.	5.	4.	5.	6.	7.	7.	7.	5.	4.	4.	4.	4.	5.
DEGR. *	165	70	95	105	170	165	170	170	180	180	180	180	180	190	195	225	240	300	80	190

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
0.	3.	3.	3.	3.	4.	0.	0.	2.
5.	3.	2.	3.	3.	2.	0.	0.	2.
10.	2.	2.	2.	2.	2.	0.	0.	2.
15.	2.	2.	2.	1.	1.	0.	0.	2.
20.	2.	2.	2.	1.	1.	0.	0.	2.
25.	2.	2.	2.	1.	1.	0.	0.	2.
30.	2.	2.	1.	1.	1.	0.	0.	2.
35.	2.	2.	1.	1.	1.	0.	0.	1.
40.	2.	2.	1.	1.	1.	0.	0.	1.
45.	2.	2.	1.	1.	1.	0.	0.	1.
50.	2.	2.	1.	1.	1.	0.	0.	1.
55.	2.	2.	1.	1.	1.	0.	0.	1.
60.	2.	2.	1.	1.	1.	0.	0.	1.
65.	2.	2.	1.	1.	0.	0.	0.	1.
70.	2.	1.	1.	1.	0.	0.	0.	1.
75.	2.	1.	1.	1.	0.	0.	0.	1.
80.	2.	1.	1.	0.	0.	1.	0.	1.
85.	1.	1.	0.	0.	0.	1.	1.	1.
90.	1.	1.	0.	0.	0.	2.	1.	1.
95.	1.	0.	0.	0.	0.	2.	2.	1.
100.	1.	0.	0.	0.	0.	3.	2.	1.
105.	0.	0.	0.	0.	0.	4.	2.	1.
110.	0.	0.	0.	0.	0.	4.	3.	1.
115.	0.	0.	0.	0.	0.	4.	4.	1.
120.	0.	0.	0.	0.	0.	4.	4.	2.
125.	0.	0.	0.	0.	0.	3.	4.	2.
130.	0.	0.	0.	0.	0.	3.	4.	2.
135.	0.	0.	0.	0.	0.	2.	3.	2.
140.	0.	0.	0.	0.	0.	2.	3.	2.
145.	0.	0.	0.	0.	0.	2.	2.	2.
150.	0.	0.	0.	0.	0.	2.	2.	2.
155.	0.	0.	0.	0.	0.	2.	2.	2.
160.	0.	0.	0.	0.	0.	2.	2.	3.
165.	1.	1.	1.	0.	0.	2.	2.	3.
170.	1.	1.	1.	1.	1.	2.	2.	4.
175.	3.	2.	2.	2.	2.	2.	2.	4.
180.	4.	4.	4.	4.	4.	2.	2.	3.
185.	5.	5.	5.	5.	4.	2.	2.	2.
190.	5.	5.	5.	5.	5.	2.	2.	1.
195.	5.	5.	5.	5.	5.	2.	2.	0.
200.	5.	5.	4.	4.	4.	2.	2.	0.
205.	4.	4.	4.	4.	4.	3.	2.	0.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 PM10 CUMULATIVE BUILD 1-HR FRIDAY P

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
210.	4.	4.	4.	4.	4.	3.	2.	0.
215.	4.	4.	4.	4.	4.	3.	3.	0.
220.	3.	3.	3.	3.	3.	3.	3.	0.
225.	3.	3.	3.	3.	3.	3.	3.	0.
230.	3.	3.	3.	3.	3.	3.	3.	0.
235.	3.	3.	3.	3.	3.	3.	3.	0.
240.	3.	3.	3.	3.	3.	4.	3.	0.
245.	3.	3.	3.	3.	3.	4.	4.	0.
250.	3.	3.	3.	3.	3.	4.	4.	0.
255.	3.	3.	3.	3.	3.	4.	4.	0.
260.	3.	3.	3.	3.	3.	4.	4.	0.
265.	3.	3.	3.	3.	3.	3.	4.	0.
270.	3.	3.	3.	3.	3.	3.	3.	0.
275.	3.	3.	3.	3.	3.	2.	2.	0.
280.	3.	3.	3.	3.	3.	1.	1.	0.
285.	3.	3.	3.	3.	3.	1.	1.	0.
290.	3.	3.	3.	3.	3.	1.	0.	0.
295.	3.	3.	3.	3.	3.	0.	0.	0.
300.	3.	3.	3.	3.	3.	0.	0.	0.
305.	3.	3.	3.	3.	3.	0.	0.	0.
310.	3.	3.	3.	3.	3.	0.	0.	0.
315.	3.	3.	3.	3.	3.	0.	0.	0.
320.	4.	3.	3.	3.	3.	0.	0.	0.
325.	4.	4.	4.	4.	4.	0.	0.	0.
330.	4.	4.	4.	4.	4.	0.	0.	0.
335.	4.	4.	4.	4.	4.	0.	0.	0.
340.	4.	4.	4.	4.	5.	0.	0.	0.
345.	4.	4.	5.	5.	5.	0.	0.	0.
350.	4.	4.	5.	5.	5.	0.	0.	1.
355.	4.	4.	4.	4.	4.	0.	0.	1.
MAX	5.	5.	5.	5.	5.	4.	4.	4.
DEGR.	190	190	190	190	345	255	125	170

THE HIGHEST CONCENTRATION OF 7. ug/m**3 OCCURRED AT RECEPTOR REC13.

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION PM10 FRIDAY PM

DATE : 8/17/10
TIME : 16:47:43

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	125.	.0	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	125.	.0	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	125.	.0	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	125.	.0	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	59.	.0	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	59.	.0	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	59.	.0	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	59.	.0	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	59.	.0	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	59.	.0	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	45.	.0	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	45.	.0	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	45.	.0	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	45.	.0	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	45.	.0	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	51.	.0	.0	30.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	51.	.0	.0	30.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	51.	.0	.0	30.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	51.	.0	.0	30.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	1.	.0	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	1.	.0	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	1.	.0	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	101.	.0	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	101.	.0	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	101.	.0	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	101.	.0	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	101.	.0	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	153.	.0	.0	30.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	153.	.0	.0	30.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	48.	.0	.0	30.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	48.	.0	.0	30.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.0	.0	30.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.0	.0	30.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.0	.0	30.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.0	.0	30.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.0	.0	30.0		
37. Existing On Ramp 1	********	********	********	********	181.	240.	AG	105.	.0	.0	30.0		
38. Existing On Ramp 2	********	********	********	********	199.	278.	AG	105.	.0	.0	30.0		
39. Existing On Ramp 3	********	********	********	********	181.	314.	AG	105.	.0	.0	30.0		
40. Existing On Ramp 4	********	********	********	********	170.	344.	AG	105.	.0	.0	30.0		
41. CR 161 SB Queue	********	********	********	********	12.	212.	AG	0.	100.0	.0	12.0	.24	.6
42. RTE 173 Queue Ex	********	********	********	********	33.	90.	AG	0.	100.0	.0	12.0	.63	1.7

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION PM10 FRIDAY PM

DATE : 8/17/10
TIME : 16:47:43

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
41. CR 161 SB Queue	48	200.	.10
42. RTE 173 Queue Ex	125	200.	.10

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION PM10 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION PM10 FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX *	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEGR. *	0	0	150	240	295	30	140	70	290	145	5	10	0	320	335	0	55	35	30	35

(DEGR)*	REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEGR. *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION PM10 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION PM10 FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEGR.	30	75	65	70	80	70	85	345	100	85	10	15	10	0	0	350	180	30	25	25

THE HIGHEST CONCENTRATION OF 1. ug/m**3 OCCURRED AT RECEPTOR REC6 .

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION PM10 FRIDAY PM

DATE : 9/10/10
TIME : 15:47:30

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	193.	.0	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	193.	.0	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	193.	.0	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	193.	.0	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	65.	.0	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	65.	.0	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	65.	.0	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	65.	.0	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	65.	.0	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	65.	.0	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	50.	.0	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	50.	.0	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	50.	.0	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	50.	.0	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	50.	.0	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	59.	.0	.0	30.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	59.	.0	.0	30.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	59.	.0	.0	30.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	59.	.0	.0	30.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	1.	.0	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	1.	.0	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	1.	.0	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	166.	.0	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	166.	.0	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	166.	.0	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	166.	.0	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	166.	.0	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	53.	.0	.0	30.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	53.	.0	.0	30.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	53.	.0	.0	30.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	53.	.0	.0	30.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.0	.0	30.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.0	.0	30.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.0	.0	30.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.0	.0	30.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.0	.0	30.0		
37. Existing On Ramp 1	********	********	********	********	181.	240.	AG	181.	.0	.0	30.0		
38. Existing On Ramp 2	********	********	********	********	199.	278.	AG	181.	.0	.0	30.0		
39. Existing On Ramp 3	********	********	********	********	181.	314.	AG	181.	.0	.0	30.0		
40. Existing On Ramp 4	********	********	********	********	170.	344.	AG	181.	.0	.0	30.0		
41. CR 161 SB Queue	********	********	********	********	12.	212.	AG	0.	100.0	.0	12.0	.26	.6
42. RTE 173 Queue Ex	********	********	********	********	36.	112.	AG	0.	100.0	.0	12.0	.64	1.8

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION PM10 FRIDAY PM

DATE : 9/10/10
TIME : 15:47:30

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
41. CR 161 SB Queue	53	200.	.08
42. RTE 173 Queue Ex	193	300.	.08

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION PM10 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION PM10 FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260. *	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265. *	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX *	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEGR. *	265	0	170	260	320	35	140	140	80	145	110	25	15	0	0	0	285	40	40	10

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION PM10 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION PM10 FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX	0.	0.	0.	0.	0.	1.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEGR.	0	270	70	70	80	70	45	325	0	345	110	225	265	5	220	220	175	185	50	25

THE HIGHEST CONCENTRATION OF 1. ug/m**3 OCCURRED AT RECEPTOR REC6 .

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION PM 10 FRIDAY PM

DATE : 9/10/10
TIME : 15:40:33

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	388.	.0	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	388.	.0	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	388.	.0	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	388.	.0	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	76.	.0	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	76.	.0	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	76.	.0	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	76.	.0	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	76.	.0	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	76.	.0	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	59.	.0	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	59.	.0	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	59.	.0	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	59.	.0	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	59.	.0	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	891.	.0	.0	42.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	891.	.0	.0	42.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	891.	.0	.0	42.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	891.	.0	.0	42.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	3.	.0	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	3.	.0	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	3.	.0	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	371.	.0	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	371.	.0	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	371.	.0	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	371.	.0	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	371.	.0	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	893.	.0	.0	42.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	893.	.0	.0	42.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	893.	.0	.0	42.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	893.	.0	.0	42.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.0	.0	42.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.0	.0	42.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.0	.0	42.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.0	.0	42.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.0	.0	42.0		
37. Future 173 WB Ramp A	********	********	********	********	63.	211.	AG	868.	.0	.0	30.0		
38. Future 173 WB Ramp B	********	********	********	********	60.	261.	AG	868.	.0	.0	30.0		
39. Future 173 WB Ramp C	********	********	********	********	72.	273.	AG	868.	.0	.0	30.0		
40. Route 173 Queue Futu	********	********	********	********	1789.	110.	AG	0.	100.0	.0	12.0	1.66	90.9
41. Route 173 Queue Futu	********	********	********	********	1789.	103.	AG	0.	100.0	.0	12.0	1.66	90.9
42. CR 161 SB Queue	********	********	********	********	12.	212.	AG	0.	100.0	.0	12.0	.12	.6

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION PM 10 FRIDAY PM

DATE : 9/10/10
TIME : 15:40:33

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
40. Route 173 Queue Futu	332	200.	.08
41. Route 173 Queue Futu	332	200.	.08
42. CR 161 SB Queue	24	200.	.08

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION PM 10 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	1.	1.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	0.	0.
5.	0.	1.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	2.	1.	0.	0.
10.	0.	1.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	0.	0.
15.	0.	1.	0.	1.	2.	3.	0.	0.	0.	0.	0.	2.	2.	1.	1.	1.	1.	0.	0.	0.
20.	0.	1.	0.	1.	2.	3.	0.	0.	0.	0.	0.	2.	2.	1.	1.	1.	1.	0.	0.	0.
25.	0.	1.	1.	0.	1.	4.	0.	0.	0.	0.	0.	2.	2.	1.	0.	0.	1.	0.	0.	0.
30.	0.	1.	1.	0.	1.	4.	0.	0.	0.	0.	0.	2.	1.	0.	0.	0.	1.	1.	0.	0.
35.	0.	0.	1.	0.	1.	3.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	1.	1.	0.	0.
40.	0.	0.	1.	0.	1.	3.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	0.	0.
45.	0.	0.	1.	0.	1.	2.	1.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
50.	0.	0.	1.	0.	1.	2.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.	0.	0.
55.	0.	0.	1.	0.	1.	2.	1.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
60.	0.	0.	1.	0.	1.	2.	1.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
65.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
70.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
75.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
80.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
85.	0.	0.	1.	0.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	0.
90.	0.	0.	1.	0.	2.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.	0.	1.	0.	0.	0.
95.	0.	0.	2.	0.	2.	2.	1.	1.	0.	0.	0.	1.	1.	1.	1.	0.	1.	0.	0.	0.
100.	0.	0.	2.	0.	2.	1.	1.	1.	1.	1.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
105.	0.	0.	2.	1.	1.	1.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
110.	0.	0.	2.	1.	1.	1.	2.	3.	2.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
115.	0.	0.	3.	1.	1.	0.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
120.	0.	0.	3.	1.	0.	0.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
125.	0.	0.	3.	1.	0.	0.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
130.	0.	0.	2.	1.	0.	0.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
135.	0.	0.	2.	1.	0.	0.	3.	2.	2.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
140.	0.	0.	2.	1.	0.	0.	3.	2.	1.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
145.	0.	0.	2.	1.	0.	0.	3.	2.	1.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
150.	0.	0.	2.	1.	0.	0.	2.	2.	1.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
155.	0.	0.	2.	1.	0.	0.	2.	2.	1.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
160.	0.	0.	2.	1.	0.	0.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
165.	0.	0.	2.	1.	0.	0.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
170.	0.	0.	2.	1.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
175.	0.	0.	2.	1.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
180.	0.	0.	2.	1.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
185.	0.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
190.	0.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
195.	0.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
200.	0.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
205.	0.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION PM 10 FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	0.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
215. *	0.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
220. *	0.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
225. *	1.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
230. *	1.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
235. *	1.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
240. *	1.	0.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
245. *	2.	0.	2.	2.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
250. *	2.	0.	2.	2.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
255. *	1.	0.	2.	2.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
260. *	1.	0.	2.	2.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
265. *	1.	0.	1.	3.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
270. *	1.	0.	1.	3.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
275. *	1.	0.	1.	3.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	2.	2.
280. *	1.	0.	1.	3.	0.	0.	1.	1.	2.	1.	1.	0.	0.	0.	0.	0.	2.	2.	2.	1.
285. *	1.	0.	1.	2.	1.	0.	1.	1.	2.	1.	1.	0.	0.	0.	0.	0.	2.	2.	2.	1.
290. *	1.	0.	1.	2.	1.	1.	1.	1.	2.	1.	1.	0.	0.	0.	0.	0.	2.	2.	1.	1.
295. *	1.	0.	0.	2.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	2.	2.	1.	1.
300. *	1.	0.	0.	2.	3.	2.	1.	1.	1.	1.	2.	0.	0.	0.	0.	0.	2.	2.	1.	0.
305. *	0.	0.	0.	1.	3.	3.	0.	1.	1.	1.	2.	0.	0.	1.	0.	0.	2.	1.	0.	1.
310. *	0.	0.	0.	1.	3.	3.	0.	1.	1.	1.	1.	1.	0.	1.	0.	0.	1.	1.	0.	0.
315. *	0.	0.	0.	1.	3.	3.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	1.	1.	1.	0.
320. *	1.	0.	0.	1.	2.	3.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	1.	1.	0.	0.
325. *	1.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	0.	0.
330. *	1.	0.	0.	1.	2.	3.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	0.	0.
335. *	1.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	0.	1.
340. *	1.	1.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	1.	0.
345. *	1.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	1.	1.
350. *	1.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	1.	0.
355. *	1.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	0.	0.
MAX *	2.	1.	3.	3.	3.	4.	3.	3.	2.	2.	2.	2.	2.	2.	1.	1.	2.	2.	2.	2.
DEGR. *	245	20	115	275	305	25	125	115	115	115	300	20	20	5	5	10	290	290	275	275

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION PM 10 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.	1.	0.	0.	0.	2.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	0.	0.	0.	0.
5.	0.	1.	0.	0.	0.	2.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.	2.	2.	1.	1.	0.	0.	1.	1.	1.
20.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.
25.	0.	0.	0.	0.	0.	3.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.
30.	0.	0.	0.	0.	0.	3.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.	2.
35.	0.	0.	0.	0.	0.	3.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	2.
40.	0.	0.	0.	0.	0.	3.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	2.
45.	0.	0.	0.	0.	0.	4.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
50.	0.	0.	0.	0.	0.	4.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
55.	0.	0.	0.	0.	0.	4.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
60.	0.	0.	0.	0.	0.	4.	3.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
65.	0.	0.	0.	0.	0.	4.	3.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
70.	0.	0.	0.	0.	0.	3.	3.	2.	2.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
75.	0.	0.	0.	0.	0.	3.	3.	2.	2.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
80.	0.	0.	0.	0.	0.	3.	3.	2.	2.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
85.	0.	0.	0.	0.	0.	3.	3.	3.	2.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
90.	0.	0.	0.	0.	0.	3.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
95.	0.	0.	0.	0.	0.	3.	3.	3.	3.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.
100.	0.	0.	0.	0.	0.	2.	2.	3.	3.	3.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.
105.	0.	1.	0.	0.	0.	2.	2.	2.	3.	3.	3.	0.	0.	0.	0.	0.	1.	1.	1.	1.
110.	0.	1.	1.	0.	0.	1.	1.	1.	2.	3.	3.	0.	0.	0.	0.	0.	1.	1.	1.	1.
115.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	3.	1.	0.	0.	0.	0.	1.	1.	1.	1.
120.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	2.	1.	1.	0.	0.	0.	1.	1.	1.	1.
125.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	1.	1.	0.	0.	0.	1.	1.	1.	1.
130.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	1.	1.	1.
135.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	1.
140.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	2.	1.
145.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	1.
150.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	1.
155.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
160.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.
165.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.
170.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	2.	2.
175.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.
180.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	2.	2.
185.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.
190.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.
195.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	2.
200.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	1.	1.	1.	1.	1.
205.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION PM 10 FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	1.	1.	1.	1.
215.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	2.	1.	2.	2.	1.	1.	1.	0.
220.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	1.	0.
225.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	0.	0.
230.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	0.	0.	0.
235.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	3.	2.	2.	2.	1.	0.	0.	0.	0.
240.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	3.	2.	2.	2.	1.	0.	0.	0.	0.
245.	1.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	3.	2.	2.	2.	1.	0.	0.	0.	0.
250.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	3.	2.	1.	1.	1.	0.	0.	0.	0.
255.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	3.	1.	1.	1.	1.	0.	0.	0.	0.
260.	1.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
265.	1.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
270.	1.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
275.	1.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
280.	1.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
285.	1.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
290.	1.	1.	1.	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
295.	0.	1.	1.	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
300.	0.	1.	0.	0.	0.	2.	1.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
305.	0.	1.	0.	0.	0.	2.	1.	1.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	2.	2.	1.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	2.	2.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
325.	1.	0.	0.	0.	0.	2.	2.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
330.	0.	1.	0.	0.	0.	2.	1.	2.	2.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	2.	1.	2.	2.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
340.	0.	1.	1.	0.	0.	2.	1.	1.	2.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
345.	0.	1.	1.	0.	0.	2.	1.	1.	1.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
350.	0.	1.	0.	0.	0.	2.	1.	1.	1.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
355.	0.	1.	1.	0.	0.	2.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	0.	0.	0.	0.
MAX	1.	2.	2.	1.	1.	4.	3.	3.	3.	3.	3.	3.	2.	2.	2.	2.	2.	2.	2.	2.
DEGR.	270	270	260	260	260	55	85	95	100	105	110	240	225	230	225	220	180	190	190	180

THE HIGHEST CONCENTRATION OF 4. ug/m**3 OCCURRED AT RECEPTOR REC26.

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION PM 10 FR

DATE : 9/10/10
TIME : 15:40:52

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	683.	.0	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	683.	.0	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	683.	.0	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	683.	.0	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	73.	.0	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	73.	.0	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	73.	.0	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	73.	.0	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	73.	.0	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	73.	.0	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	56.	.0	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	56.	.0	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	56.	.0	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	56.	.0	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	56.	.0	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	790.	.0	.0	42.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	790.	.0	.0	42.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	790.	.0	.0	42.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	790.	.0	.0	42.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	3.	.0	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	3.	.0	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	3.	.0	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	663.	.0	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	663.	.0	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	663.	.0	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	663.	.0	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	663.	.0	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	790.	.0	.0	42.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	790.	.0	.0	42.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	21.	.0	.0	42.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	21.	.0	.0	42.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.0	.0	42.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.0	.0	42.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.0	.0	42.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.0	.0	42.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.0	.0	42.0		
37. Future 173 WB Ramp A	********	********	********	********	63.	211.	AG	768.	.0	.0	30.0		
38. Future 173 WB Ramp B	********	********	********	********	60.	261.	AG	768.	.0	.0	30.0		
39. Future 173 WB Ramp C	********	********	********	********	72.	273.	AG	768.	.0	.0	30.0		
40. Route 173 Queue Futu	********	********	********	********	5228.	110.	AG	0.	100.0	.0	12.0	3.13	265.6
41. Route 173 Queue Futu	********	********	********	********	5228.	103.	AG	0.	100.0	.0	12.0	3.13	265.6
42. CR 161 SB Queue	********	********	********	********	12.	212.	AG	0.	100.0	.0	12.0	.10	.6

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION PM 10 FR

DATE : 9/10/10
TIME : 15:40:52

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
40. Route 173 Queue Futu	627	200.	.08
41. Route 173 Queue Futu	627	200.	.08
42. CR 161 SB Queue	21	200.	.08

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION PM 10 FR

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	1.	1.	0.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	0.	0.
5.	1.	1.	0.	1.	2.	3.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	0.	0.
10.	0.	1.	0.	1.	2.	3.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	0.	0.
15.	0.	1.	0.	1.	2.	3.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	2.	1.	0.	0.
20.	0.	1.	0.	1.	2.	3.	0.	0.	0.	0.	0.	2.	2.	1.	1.	1.	1.	1.	0.	0.
25.	0.	1.	0.	1.	2.	3.	0.	0.	0.	0.	0.	2.	2.	1.	0.	0.	1.	1.	0.	0.
30.	0.	0.	1.	0.	1.	3.	0.	0.	0.	0.	0.	2.	1.	0.	0.	0.	1.	1.	0.	0.
35.	0.	0.	1.	0.	1.	3.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	1.	1.	0.	0.
40.	0.	0.	1.	0.	1.	3.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
45.	0.	0.	1.	0.	1.	3.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
50.	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.	0.
55.	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	2.	2.	0.	0.
60.	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	2.	1.	0.	0.
65.	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	2.	2.	0.	0.
70.	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	2.	2.	0.	0.
75.	0.	0.	1.	0.	2.	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	2.	2.	0.	0.
80.	0.	0.	1.	0.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	2.	2.	0.	0.
85.	0.	0.	1.	0.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	2.	2.	0.	0.
90.	0.	1.	1.	0.	2.	2.	1.	0.	0.	0.	0.	1.	1.	1.	1.	1.	3.	3.	0.	0.
95.	0.	1.	1.	0.	3.	2.	1.	1.	0.	0.	0.	1.	1.	1.	1.	1.	3.	3.	0.	0.
100.	0.	1.	1.	1.	4.	2.	1.	1.	1.	1.	0.	1.	1.	1.	1.	1.	4.	4.	1.	0.
105.	0.	0.	2.	1.	4.	2.	2.	2.	2.	1.	1.	1.	0.	1.	0.	0.	4.	4.	1.	1.
110.	1.	0.	2.	2.	4.	1.	2.	3.	2.	2.	1.	0.	0.	1.	0.	0.	4.	4.	1.	1.
115.	1.	0.	2.	2.	3.	1.	3.	3.	3.	2.	1.	0.	0.	0.	0.	0.	3.	4.	1.	1.
120.	1.	0.	2.	2.	3.	0.	3.	3.	3.	2.	1.	0.	0.	0.	0.	0.	3.	4.	1.	1.
125.	1.	0.	2.	2.	2.	0.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	2.	3.	1.	1.
130.	1.	0.	2.	1.	2.	0.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	2.	3.	1.	1.
135.	0.	0.	2.	1.	1.	0.	3.	3.	2.	2.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
140.	0.	0.	2.	1.	1.	0.	3.	2.	2.	2.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
145.	0.	0.	2.	1.	1.	0.	3.	2.	2.	2.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
150.	0.	0.	2.	1.	1.	0.	3.	2.	2.	2.	2.	0.	0.	0.	0.	0.	1.	2.	1.	1.
155.	0.	0.	2.	1.	1.	0.	2.	2.	1.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
160.	0.	0.	2.	1.	1.	0.	2.	2.	1.	2.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
165.	0.	0.	3.	1.	1.	0.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
170.	0.	0.	2.	1.	1.	0.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
175.	0.	0.	2.	1.	1.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
180.	0.	0.	2.	1.	1.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
185.	0.	0.	2.	1.	1.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
190.	0.	0.	2.	1.	1.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
195.	0.	0.	2.	1.	1.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
200.	0.	0.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
205.	0.	0.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION PM 10 FR

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	0.	0.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
215. *	0.	0.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
220. *	0.	0.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
225. *	1.	0.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
230. *	1.	0.	2.	1.	1.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
235. *	1.	0.	2.	1.	1.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
240. *	1.	0.	2.	2.	1.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
245. *	1.	0.	2.	2.	1.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
250. *	1.	0.	2.	2.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
255. *	1.	0.	2.	2.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
260. *	1.	0.	2.	3.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
265. *	1.	0.	2.	3.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	2.	1.	1.
270. *	1.	0.	1.	3.	2.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	2.	3.	2.	1.
275. *	1.	0.	1.	3.	2.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	3.	4.	2.	2.
280. *	0.	0.	1.	3.	3.	0.	1.	1.	2.	2.	1.	0.	0.	0.	0.	0.	4.	4.	2.	1.
285. *	1.	0.	1.	2.	4.	1.	1.	1.	2.	1.	1.	0.	0.	0.	0.	0.	5.	5.	2.	1.
290. *	0.	0.	1.	2.	4.	1.	1.	1.	2.	1.	1.	0.	0.	0.	0.	0.	5.	6.	1.	1.
295. *	0.	0.	1.	1.	5.	2.	1.	1.	2.	2.	2.	0.	0.	0.	0.	0.	5.	6.	0.	0.
300. *	0.	0.	0.	1.	5.	3.	1.	1.	1.	2.	2.	0.	0.	0.	0.	0.	5.	5.	1.	0.
305. *	0.	0.	0.	1.	5.	3.	0.	1.	1.	1.	2.	1.	0.	1.	0.	0.	4.	3.	0.	0.
310. *	0.	0.	0.	1.	4.	3.	0.	1.	1.	1.	1.	1.	0.	1.	1.	0.	3.	3.	0.	0.
315. *	0.	0.	0.	1.	4.	3.	0.	0.	1.	1.	1.	1.	0.	1.	1.	0.	3.	2.	0.	0.
320. *	0.	0.	0.	1.	3.	3.	0.	0.	0.	1.	1.	1.	1.	2.	1.	1.	2.	2.	0.	0.
325. *	0.	0.	0.	1.	3.	3.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	2.	2.	0.	0.
330. *	1.	0.	0.	1.	2.	3.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	0.	0.
335. *	1.	1.	0.	1.	2.	3.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	0.	0.
340. *	1.	1.	0.	1.	2.	3.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	0.	1.
345. *	1.	1.	0.	1.	2.	3.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	2.	1.	1.
350. *	1.	0.	0.	1.	2.	3.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	2.	1.	0.
355. *	1.	0.	0.	1.	2.	3.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	2.	1.	0.
MAX *	1.	1.	3.	3.	5.	3.	3.	3.	3.	2.	2.	2.	2.	2.	1.	1.	5.	6.	2.	2.
DEGR. *	240	20	165	270	300	25	130	115	120	120	150	25	20	320	15	350	290	290	280	275

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION PM 10 FR

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.	1.	0.	0.	0.	2.	2.	1.	1.	2.	2.	1.	1.	2.	2.	1.	0.	0.	0.	0.
5.	0.	1.	0.	0.	0.	2.	1.	1.	1.	1.	2.	1.	2.	2.	2.	1.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	2.	2.	1.	1.	1.	2.	1.	2.	2.	1.	1.	0.	0.	0.	1.
15.	0.	0.	0.	0.	0.	2.	2.	1.	1.	1.	2.	2.	2.	1.	1.	0.	0.	0.	1.	1.
20.	0.	0.	0.	0.	0.	3.	2.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.
25.	0.	0.	0.	0.	0.	3.	2.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.
30.	0.	0.	0.	0.	0.	3.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	2.	2.
35.	0.	0.	0.	0.	0.	3.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	2.	2.
40.	0.	0.	0.	0.	0.	3.	2.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	2.	2.
45.	0.	0.	0.	0.	0.	4.	2.	2.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
50.	0.	0.	0.	0.	0.	4.	2.	2.	2.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
55.	0.	0.	0.	0.	0.	4.	2.	1.	2.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.
60.	0.	0.	0.	0.	0.	4.	2.	2.	1.	2.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.
65.	0.	0.	0.	0.	0.	4.	3.	2.	2.	1.	2.	0.	0.	0.	0.	0.	1.	1.	1.	1.
70.	0.	0.	0.	0.	0.	3.	3.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.	1.	1.	1.
75.	0.	0.	0.	0.	0.	3.	3.	2.	2.	1.	2.	0.	0.	0.	0.	0.	0.	1.	1.	1.
80.	0.	0.	0.	0.	0.	3.	3.	3.	2.	1.	2.	0.	0.	0.	0.	0.	0.	1.	1.	1.
85.	0.	0.	0.	0.	0.	3.	4.	3.	2.	2.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
90.	0.	0.	0.	0.	0.	3.	3.	3.	3.	2.	2.	0.	0.	0.	0.	0.	0.	1.	1.	1.
95.	0.	0.	0.	0.	0.	3.	3.	3.	4.	3.	2.	0.	0.	0.	0.	0.	0.	1.	1.	1.
100.	0.	1.	1.	0.	0.	3.	3.	3.	4.	3.	2.	0.	0.	0.	0.	0.	0.	1.	1.	1.
105.	0.	1.	1.	1.	1.	2.	2.	3.	4.	4.	3.	1.	0.	0.	0.	0.	1.	1.	1.	1.
110.	1.	1.	1.	1.	1.	2.	2.	2.	3.	4.	4.	1.	1.	0.	0.	0.	1.	1.	1.	1.
115.	1.	1.	1.	1.	1.	1.	1.	1.	2.	3.	4.	1.	1.	1.	0.	0.	1.	1.	1.	1.
120.	1.	1.	1.	1.	1.	0.	0.	0.	1.	2.	3.	1.	1.	1.	0.	0.	1.	1.	2.	2.
125.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	2.	1.	1.	0.	0.	0.	1.	1.	2.	2.
130.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	1.	1.	2.	1.
135.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	1.	2.	2.
140.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	2.	1.
145.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	2.	1.
150.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	2.
155.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.
160.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.
165.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.
170.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.
175.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.
180.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.
185.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
190.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
195.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
200.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.	1.	1.	1.	1.	1.	1.
205.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.	1.	1.	1.	1.	1.	1.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION PM 10 FR

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	1.	1.	1.	0.
215.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	1.	1.	1.	0.
220.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	0.	0.
225.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	0.	0.	0.
230.	0.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	0.	0.	0.
235.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	1.	1.	2.	1.	0.	0.	0.
240.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	1.	1.	2.	1.	0.	0.	0.
245.	1.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
250.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	2.	0.	0.	0.	0.
255.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
260.	1.	2.	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	1.	0.	0.	0.	0.
265.	1.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
270.	1.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
275.	1.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
280.	1.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
285.	0.	1.	1.	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
290.	0.	1.	1.	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
295.	0.	1.	0.	0.	0.	2.	1.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
300.	0.	1.	0.	0.	0.	2.	1.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	3.	2.	1.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	3.	2.	1.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	3.	2.	2.	1.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	3.	2.	2.	1.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
325.	0.	0.	0.	0.	1.	2.	2.	2.	2.	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.
330.	1.	0.	0.	0.	0.	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
335.	1.	0.	0.	0.	0.	2.	1.	2.	2.	2.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	2.	1.	2.	2.	2.	1.	1.	1.	1.	1.	2.	0.	0.	0.	0.
345.	0.	0.	1.	1.	0.	2.	1.	1.	2.	2.	2.	1.	1.	1.	2.	2.	0.	0.	0.	0.
350.	0.	0.	1.	0.	0.	2.	1.	1.	1.	2.	2.	1.	1.	2.	2.	2.	0.	0.	0.	0.
355.	0.	1.	1.	0.	0.	2.	1.	1.	1.	2.	2.	1.	1.	2.	2.	2.	0.	0.	0.	0.
MAX	1.	2.	2.	1.	1.	4.	4.	3.	4.	4.	4.	2.	2.	2.	2.	2.	1.	1.	2.	2.
DEGR.	275	275	270	260	265	60	85	90	100	105	115	240	225	0	220	215	200	35	140	170

THE HIGHEST CONCENTRATION OF 6. ug/m**3 OCCURRED AT RECEPTOR REC18.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 SO2 EXISTING 1-HR FRIDAY PM

DATE : 8/16/10
TIME : 14:14:34

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	441.	0.0	0.0	43.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	163.	0.0	0.0	43.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	409.	0.0	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	38.	0.0	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	38.	0.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1600.0	*	122.	180.	AG	371.	0.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 SO2 EXISTING 1-HR FRIDAY PM

DATE : 8/16/10
TIME : 14:14:34

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 SO2 EXISTING 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.
15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.
20.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
30.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2010 SO2 EXISTING 1-HR FRIDAY PM

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	1.	1.	0.	0.	1.	1.	0.	0.	0.
DEGR.	40	50	35	160	165	170	215	185	185	185	185	345	340	340	5	10	15	20	25	25

THE HIGHEST CONCENTRATION OF 1. ug/m**3 OCCURRED AT RECEPTOR REC17.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 S02 NO-BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:39:39

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	596.	0.0	0.0	43.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	311.	0.0	0.0	43.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	506.	0.0	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	42.	0.0	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	42.	0.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1600.0	*	122.	180.	AG	464.	0.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 S02 NO-BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:39:39

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 S02 NO-BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
20.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.
30.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.
35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.
40.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	1.	1.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	1.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 S02 NO-BUILD 1-HR FRIDAY PM

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
MAX	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
DEGR.	50	45	35	35	170	175	220	215	190	180	350	335	345	345	10	10	15	20	25	30

THE HIGHEST CONCENTRATION OF 1. ug/m**3 OCCURRED AT RECEPTOR REC6 .

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 SO2 BUILD 1-HOUR FRIDAY PM

DATE : 9/10/10
TIME : 10:39:56

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	1325.	0.0	0.0	67.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	1196.	0.0	0.0	67.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	1030.	0.0	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	42.	0.0	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	42.	0.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1400.0	*	322.	180.	AG	988.	0.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 SO2 BUILD 1-HOUR FRIDAY PM

DATE : 9/10/10
TIME : 10:39:56

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0
21. RECEPTOR NO. 7-21	668.0	1533.0	6.0
22. RECEPTOR NO. 7-22	700.0	1533.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 SO2 BUILD 1-HOUR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
5.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.
10.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.
15.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	2.	2.	2.	1.	1.	1.
20.	1.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	2.	2.	2.	1.	1.	1.
25.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	2.	2.	2.	2.	1.	1.
30.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	1.
35.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
40.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
45.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
50.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
55.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
60.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
65.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
70.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
75.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
80.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
85.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
90.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
95.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
100.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
105.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
110.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
115.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
120.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
125.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
130.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
135.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
140.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
145.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
150.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
155.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
160.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
165.	1.	1.	1.	1.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	0.
170.	1.	1.	1.	1.	2.	2.	0.	1.	1.	1.	0.	0.	0.	0.	2.	2.	2.	1.	1.	0.
175.	1.	1.	1.	1.	2.	2.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	0.	0.
180.	1.	1.	1.	1.	1.	2.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
185.	1.	1.	1.	1.	1.	2.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.
190.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.
195.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.
200.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.
205.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 SO2 BUILD 1-HOUR FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20	REC21	REC22
210. *	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
215. *	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
220. *	0.	0.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.		
225. *	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.		
230. *	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
235. *	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
240. *	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
245. *	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	0.	0.		
250. *	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
255. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
260. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
265. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
270. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
275. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
280. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
285. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
290. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
295. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
300. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
305. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
310. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
315. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
320. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
325. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
330. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
335. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	2.	0.	0.	0.	0.	0.	0.		
340. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	1.	2.	0.	0.	1.	0.	0.	0.		
345. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	0.	0.	1.	0.	0.	0.		
350. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	1.	1.	1.	1.	1.	0.		
355. *	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.	1.	0.	0.		
MAX *	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.		
DEGR. *	35	35	35	170	170	180	210	215	215	220	185	185	345	350	15	10	15	25	30	30		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 SO2 BUILD 1-HOUR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
0.	1.	1.
5.	2.	1.
10.	2.	1.
15.	2.	0.
20.	2.	0.
25.	2.	0.
30.	1.	0.
35.	1.	0.
40.	1.	0.
45.	1.	0.
50.	1.	0.
55.	1.	0.
60.	1.	0.
65.	1.	0.
70.	1.	0.
75.	1.	0.
80.	1.	0.
85.	1.	0.
90.	1.	0.
95.	1.	0.
100.	1.	0.
105.	1.	0.
110.	1.	0.
115.	1.	0.
120.	1.	0.
125.	1.	0.
130.	1.	0.
135.	1.	0.
140.	1.	0.
145.	1.	0.
150.	1.	0.
155.	1.	0.
160.	1.	0.
165.	1.	0.
170.	2.	0.
175.	1.	1.
180.	1.	1.
185.	1.	1.
190.	0.	2.
195.	0.	1.
200.	0.	1.
205.	0.	1.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 SO2 BUILD 1-HOUR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
210.	0.	1.
215.	0.	1.
220.	0.	1.
225.	0.	1.
230.	0.	1.
235.	0.	1.
240.	0.	1.
245.	0.	1.
250.	0.	1.
255.	0.	1.
260.	0.	1.
265.	0.	1.
270.	0.	1.
275.	0.	1.
280.	0.	1.
285.	0.	1.
290.	0.	1.
295.	0.	1.
300.	0.	1.
305.	0.	1.
310.	0.	1.
315.	0.	1.
320.	0.	1.
325.	0.	1.
330.	0.	1.
335.	0.	1.
340.	0.	2.
345.	0.	2.
350.	1.	2.
355.	1.	2.
MAX	2.	2.
DEGR.	15	345

THE HIGHEST CONCENTRATION OF 2. ug/m**3 OCCURRED AT RECEPTOR REC8 .

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 SO2 CUMULATIVE BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:40:12

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	636.0	1668.0	1136.0	2534.0	*	1000.	30.	AG	1588.	0.0	0.0	67.7		
2. RTE 161 S FREE FLOW	*	636.0	1668.0	136.0	802.0	*	1000.	210.	AG	1393.	0.0	0.0	67.7		
3. RTE 17 OFF FRE FLOW	*	684.0	1746.0	684.0	746.0	*	1000.	180.	AG	1001.	0.0	0.0	31.7		
4. RT 17 OFF LT FRE FL	*	636.6	1668.9	684.0	1641.9	*	55.	120.	AG	42.	0.0	0.0	31.7		
5. RT 17 OFF LT QUEUE	*	651.0	1666.5	684.0	1647.0	*	38.	121.	AG	42.	0.0	0.0	31.7		
6. RT 17 OFF RT QUEUE	*	684.0	1722.0	684.0	1400.0	*	322.	180.	AG	959.	0.0	0.0	31.7		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 SO2 CUMULATIVE BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 10:40:12

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 7-1	582.0	1620.0	6.0
2. RECEPTOR NO. 7-2	612.0	1671.0	6.0
3. RECEPTOR NO. 7-3	627.0	1693.5	6.0
4. RECEPTOR NO. 7-4	644.0	1722.0	6.0
5. RECEPTOR NO. 7-5	660.0	1746.0	6.0
6. RECEPTOR NO. 7-6	675.0	1772.0	6.0
7. RECEPTOR NO. 7-7	711.0	1755.0	6.0
8. RECEPTOR NO. 7-8	700.0	1731.0	6.0
9. RECEPTOR NO. 7-9	700.0	1704.0	6.0
10. RECEPTOR NO. 7-10	700.0	1683.0	6.0
11. RECEPTOR NO. 7-11	700.0	1653.0	6.0
12. RECEPTOR NO. 7-12	700.0	1623.0	6.0
13. RECEPTOR NO. 7-13	700.0	1593.0	6.0
14. RECEPTOR NO. 7-14	700.0	1563.0	6.0
15. RECEPTOR NO. 7-15	668.0	1563.0	6.0
16. RECEPTOR NO. 7-16	668.0	1593.0	6.0
17. RECEPTOR NO. 7-17	668.0	1623.0	6.0
18. RECEPTOR NO. 7-18	648.0	1647.0	6.0
19. RECEPTOR NO. 7-19	634.5	1624.0	6.0
20. RECEPTOR NO. 7-20	606.0	1578.0	6.0
21. RECEPTOR NO. 7-21	668.0	1533.0	6.0
22. RECEPTOR NO. 7-22	700.0	1533.0	6.0

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 SO2 CUMULATIVE BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.	1.	1.
5.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.
10.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.
15.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.
20.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.
25.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	2.	2.	2.	2.	2.	1.
30.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.
35.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	1.	1.
40.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
45.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
50.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
55.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
60.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.
65.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
70.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
75.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
80.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
85.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
90.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
95.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
100.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
105.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
110.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
115.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
120.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
125.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
130.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
135.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
140.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
145.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
150.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
155.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
160.	1.	1.	1.	1.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.
165.	1.	1.	1.	1.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	0.
170.	1.	1.	1.	1.	2.	2.	0.	1.	0.	0.	0.	0.	0.	0.	2.	2.	2.	1.	1.	0.
175.	1.	1.	1.	1.	2.	2.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	0.	0.
180.	1.	1.	1.	1.	2.	2.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.
185.	1.	1.	1.	1.	1.	2.	1.	2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.
190.	1.	1.	1.	1.	1.	2.	1.	2.	2.	2.	2.	2.	2.	2.	0.	0.	0.	0.	0.	0.
195.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.
200.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.
205.	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 SO2 CUMULATIVE BUILD 1-HR FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20	REC21	REC22
210. *	1.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
215. *	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.		
220. *	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.		
225. *	0.	0.	0.	0.	1.	0.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.		
230. *	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.		
235. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.		
240. *	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
245. *	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.		
250. *	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	0.	0.		
255. *	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
260. *	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
265. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
270. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
275. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
280. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
285. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
290. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
295. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
300. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
305. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
310. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
315. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
320. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
325. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.		
330. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	0.	0.		
335. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	2.	0.	0.	0.	0.	0.	0.		
340. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	0.	1.	1.	1.	0.	0.		
345. *	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	1.	1.	0.		
350. *	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	2.	1.	1.	1.	1.	1.	0.		
355. *	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	2.	2.	1.	1.	1.	1.	1.	1.		
MAX *	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.		
DEGR. *	35	35	40	175	175	175	215	200	215	215	185	190	345	345	10	15	10	25	30	30		

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 SO2 CUMULATIVE BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
0.	1.	1.
5.	2.	1.
10.	2.	1.
15.	2.	1.
20.	2.	0.
25.	2.	0.
30.	1.	0.
35.	1.	0.
40.	1.	0.
45.	1.	0.
50.	1.	0.
55.	1.	0.
60.	1.	0.
65.	1.	0.
70.	1.	0.
75.	1.	0.
80.	1.	0.
85.	1.	0.
90.	1.	0.
95.	1.	0.
100.	1.	0.
105.	1.	0.
110.	1.	0.
115.	1.	0.
120.	1.	0.
125.	1.	0.
130.	1.	0.
135.	1.	0.
140.	1.	0.
145.	1.	0.
150.	1.	0.
155.	1.	0.
160.	1.	0.
165.	1.	0.
170.	2.	0.
175.	1.	1.
180.	1.	1.
185.	1.	1.
190.	0.	2.
195.	0.	1.
200.	0.	1.
205.	0.	1.

JOB: NY CASINO- (#7) CTY HWY 161/RTE 17 OFF RUN: 2018 SO2 CUMULATIVE BUILD 1-HR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC21	REC22
210.	0.	1.
215.	0.	1.
220.	0.	1.
225.	0.	1.
230.	0.	1.
235.	0.	1.
240.	0.	1.
245.	0.	1.
250.	0.	1.
255.	0.	1.
260.	0.	1.
265.	0.	1.
270.	0.	1.
275.	0.	1.
280.	0.	1.
285.	0.	1.
290.	0.	1.
295.	0.	1.
300.	0.	1.
305.	0.	1.
310.	0.	1.
315.	0.	1.
320.	0.	1.
325.	0.	1.
330.	0.	1.
335.	0.	1.
340.	0.	2.
345.	0.	2.
350.	1.	2.
355.	1.	2.
MAX	2.	2.
DEGR.	10	345

THE HIGHEST CONCENTRATION OF 2. ug/m**3 OCCURRED AT RECEPTOR REC8 .

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 SO2 BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 11:45:51

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	1596.0	3465.0	1596.0	4465.0	*	1000.	360.	AG	763.	0.0	0.0	55.7		
2. RTE 161 S FREE FLOW	*	1608.0	3465.0	1608.0	2465.0	*	1000.	180.	AG	1201.	0.0	0.0	79.7		
3. SITE DRIVE FRE FLOW	*	1600.0	3455.0	2100.0	3455.0	*	500.	90.	AG	2060.	0.0	0.0	79.7		
4. SITE DRIVE FRE FLOW	*	2100.0	3455.0	2453.6	3101.4	*	500.	135.	AG	2060.	0.0	0.0	43.7		
5. RT 161 NB RGT QUEUE	*	1632.0	3425.0	1632.0	-807.5	*	4232.	180.	AG	0.	100.0	0.0	12.0	2.04	215.0
6. RT 161 NB THR QUEUE	*	1614.0	3425.0	1614.0	3328.0	*	97.	180.	AG	0.	100.0	0.0	24.0	0.73	4.9
7. RT 161 SB LFT QUEUE	*	1596.0	3497.0	1596.0	3559.8	*	63.	360.	AG	0.	100.0	0.0	12.0	0.53	3.2
8. RT 161 SB THR QUEUE	*	1584.0	3497.0	1584.0	3551.5	*	55.	360.	AG	0.	100.0	0.0	12.0	0.30	2.8
9. SITE DR. LEFT QUEUE	*	1646.0	3461.0	1772.3	3461.0	*	126.	90.	AG	0.	100.0	0.0	24.0	0.72	6.4
10. SITE DR. RIGHT QUEUE	*	1646.0	3473.0	1702.3	3473.0	*	56.	90.	AG	0.	100.0	0.0	12.0	0.32	2.9

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 SO2 BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 11:45:51

5. RT 161 NB RGT QUEUE *	90	65	2.0	761	1600	0.02	2	3
6. RT 161 NB THR QUEUE *	90	65	2.0	547	1600	0.02	2	3
7. RT 161 SB LFT QUEUE *	90	68	2.0	169	1600	0.02	2	3
8. RT 161 SB THR QUEUE *	90	43	2.0	232	1600	0.02	2	3
9. SITE DR. LEFT QUEUE *	90	50	2.0	924	1600	0.02	2	3
10. SITE DR. RIGHT QUEUE*	90	50	2.0	206	1600	0.02	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 9-1	1568.0	3305.0	6.0
2. RECEPTOR NO. 9-2	1568.0	3385.0	6.0
3. RECEPTOR NO. 9-3	1568.0	3465.0	6.0
4. RECEPTOR NO. 9-4	1568.0	3505.0	6.0
5. RECEPTOR NO. 9-5	1568.0	3545.0	6.0
6. RECEPTOR NO. 9-6	1568.0	3585.0	6.0
7. RECEPTOR NO. 9-7	1568.0	3625.0	6.0
8. RECEPTOR NO. 9-8	1568.0	3665.0	6.0
9. RECEPTOR NO. 9-9	1624.0	3665.0	6.0
10. RECEPTOR NO. 9-10	1624.0	3585.0	6.0
11. RECEPTOR NO. 9-11	1624.0	3545.0	6.0
12. RECEPTOR NO. 9-12	1624.0	3513.0	6.0
13. RECEPTOR NO. 9-13	1624.0	3495.0	6.0
14. RECEPTOR NO. 9-14	1658.0	3495.0	6.0
15. RECEPTOR NO. 9-15	1698.0	3495.0	6.0
16. RECEPTOR NO. 9-16	1738.0	3495.0	6.0
17. RECEPTOR NO. 9-17	1778.0	3495.0	6.0
18. RECEPTOR NO. 9-18	1778.0	3415.0	6.0
19. RECEPTOR NO. 9-19	1698.0	3415.0	6.0
20. RECEPTOR NO. 9-20	1648.0	3415.0	6.0
21. RECEPTOR NO. 9-21	1648.0	3385.0	6.0
22. RECEPTOR NO. 9-22	1648.0	3345.0	6.0
23. RECEPTOR NO. 9-23	1648.0	3305.0	6.0
24. RECEPTOR NO. 9-24	1648.0	3265.0	6.0
25. RECEPTOR NO. 9-25	1648.0	3150.0	6.0
26. RECEPTOR NO. 9-26	1900.0	3495.0	6.0
27. RECEPTOR NO. 9-27	2000.0	3495.0	6.0
28. RECEPTOR NO. 9-28	1568.0	3800.0	6.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 SO2 BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
5.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
10.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
15.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
20.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
25.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
30.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
35.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
40.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
45.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
50.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
55.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
60.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
65.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
70.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
75.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
80.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
85.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
90.	1.	1.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.
95.	0.	1.	2.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.
100.	0.	1.	2.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
105.	0.	1.	1.	2.	1.	1.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	0.	0.	0.
110.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	0.	0.	0.
115.	0.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
120.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
125.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
130.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
135.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
140.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
145.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
150.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
155.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
160.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
165.	1.	1.	1.	1.	1.	1.	1.	1.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
170.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
175.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	1.
180.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	0.	0.	1.
185.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	1.
190.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	1.	1.	1.	0.	0.	1.
195.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	1.	1.	0.	0.	1.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	1.	1.	1.	0.	0.	1.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	1.	1.	1.	0.	0.	1.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 SO2 BUILD 1-HR FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28													
210. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	1.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	1.	1.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	1.	1.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	1.	1.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	1.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	1.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	1.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	1.	1.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
350. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.
355. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
MAX *	1.	1.	2.	2.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.
DEGR. *	30	70	90	105	110	165	165	170	180	180	180	180	180	195	105	240	225	80	80	75

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 SO2 BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
0.	1.	1.	1.	1.	1.	0.	0.	0.
5.	1.	1.	1.	1.	1.	0.	0.	0.
10.	1.	1.	0.	0.	0.	0.	0.	0.
15.	1.	1.	0.	0.	0.	0.	0.	0.
20.	1.	0.	0.	0.	0.	0.	0.	0.
25.	1.	0.	0.	0.	0.	0.	0.	0.
30.	1.	0.	0.	0.	0.	0.	0.	0.
35.	1.	0.	0.	0.	0.	0.	0.	0.
40.	1.	0.	0.	0.	0.	0.	0.	0.
45.	1.	0.	0.	0.	0.	0.	0.	0.
50.	1.	0.	0.	0.	0.	0.	0.	0.
55.	1.	0.	0.	0.	0.	0.	0.	0.
60.	1.	0.	0.	0.	0.	0.	0.	0.
65.	1.	0.	0.	0.	0.	0.	0.	0.
70.	1.	0.	0.	0.	0.	0.	0.	0.
75.	1.	0.	0.	0.	0.	0.	0.	0.
80.	1.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	1.	0.	0.
95.	0.	0.	0.	0.	0.	1.	0.	0.
100.	0.	0.	0.	0.	0.	1.	1.	0.
105.	0.	0.	0.	0.	0.	1.	1.	0.
110.	0.	0.	0.	0.	0.	1.	1.	0.
115.	0.	0.	0.	0.	0.	1.	1.	0.
120.	0.	0.	0.	0.	0.	1.	1.	0.
125.	0.	0.	0.	0.	0.	1.	1.	0.
130.	0.	0.	0.	0.	0.	1.	1.	1.
135.	0.	0.	0.	0.	0.	1.	1.	1.
140.	0.	0.	0.	0.	0.	1.	1.	0.
145.	0.	0.	0.	0.	0.	1.	1.	0.
150.	0.	0.	0.	0.	0.	1.	1.	1.
155.	0.	0.	0.	0.	0.	1.	1.	1.
160.	0.	0.	0.	0.	0.	1.	1.	1.
165.	0.	0.	0.	0.	0.	1.	1.	1.
170.	0.	0.	0.	0.	0.	1.	1.	1.
175.	1.	1.	1.	1.	1.	1.	1.	1.
180.	1.	1.	1.	1.	1.	1.	1.	1.
185.	1.	1.	1.	1.	1.	1.	1.	0.
190.	1.	1.	1.	1.	1.	1.	1.	0.
195.	1.	1.	1.	1.	1.	1.	1.	0.
200.	1.	1.	1.	1.	1.	1.	1.	0.
205.	1.	1.	1.	1.	1.	1.	1.	0.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 SO2 BUILD 1-HR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
210.	1.	1.	1.	1.	1.	1.	1.	0.
215.	1.	1.	1.	1.	1.	1.	1.	0.
220.	1.	1.	1.	1.	1.	1.	1.	0.
225.	1.	1.	1.	1.	1.	1.	1.	0.
230.	1.	1.	1.	1.	1.	1.	1.	0.
235.	1.	1.	1.	1.	1.	1.	1.	0.
240.	1.	1.	1.	1.	1.	1.	1.	0.
245.	1.	0.	0.	0.	0.	1.	1.	0.
250.	1.	1.	0.	0.	0.	1.	1.	0.
255.	1.	1.	0.	0.	0.	1.	1.	0.
260.	1.	1.	0.	0.	0.	1.	1.	0.
265.	1.	1.	0.	0.	0.	1.	1.	0.
270.	1.	1.	0.	0.	0.	1.	1.	0.
275.	1.	1.	0.	0.	0.	0.	0.	0.
280.	1.	1.	0.	0.	0.	0.	0.	0.
285.	1.	1.	0.	0.	0.	0.	0.	0.
290.	1.	1.	0.	0.	0.	0.	0.	0.
295.	1.	1.	0.	0.	0.	0.	0.	0.
300.	1.	1.	1.	0.	1.	0.	0.	0.
305.	1.	1.	1.	1.	1.	0.	0.	0.
310.	1.	1.	1.	1.	1.	0.	0.	0.
315.	1.	1.	1.	1.	1.	0.	0.	0.
320.	1.	1.	1.	1.	1.	0.	0.	0.
325.	1.	1.	1.	1.	1.	0.	0.	0.
330.	1.	1.	1.	1.	1.	0.	0.	0.
335.	1.	1.	1.	1.	1.	0.	0.	0.
340.	1.	1.	1.	1.	1.	0.	0.	0.
345.	1.	1.	1.	1.	1.	0.	0.	0.
350.	1.	1.	1.	1.	1.	0.	0.	0.
355.	1.	1.	1.	1.	1.	0.	0.	0.
MAX	1.	1.	1.	1.	1.	1.	1.	1.
DEGR.	190	340	335	350	350	105	125	170

THE HIGHEST CONCENTRATION OF 2. ug/m**3 OCCURRED AT RECEPTOR REC13.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 SO2 CUMULATIVE BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 11:46:19

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. RTE 161 N FREE FLOW	*	1596.0	3465.0	1596.0	4465.0	*	1000.	360.	AG	1019.	0.0	0.0	55.7		
2. RTE 161 S FREE FLOW	*	1608.0	3465.0	1608.0	2465.0	*	1000.	180.	AG	1398.	0.0	0.0	79.7		
3. SITE DRIVE FRE FLOW	*	1600.0	3455.0	2100.0	3455.0	*	500.	90.	AG	2060.	0.0	0.0	79.7		
4. SITE DRIVE FRE FLOW	*	2100.0	3455.0	2453.6	3101.4	*	500.	135.	AG	2060.	0.0	0.0	43.7		
5. RT 161 NB RGT QUEUE	*	1632.0	3425.0	1632.0	-838.6	*	4264.	180.	AG	0.	100.0	0.0	12.0	2.05	216.6
6. RT 161 NB THR QUEUE	*	1614.0	3425.0	1614.0	2848.4	*	577.	180.	AG	0.	100.0	0.0	24.0	1.10	29.3
7. RT 161 SB LFT QUEUE	*	1596.0	3497.0	1596.0	3558.7	*	62.	360.	AG	0.	100.0	0.0	12.0	0.52	3.1
8. RT 161 SB THR QUEUE	*	1584.0	3497.0	1584.0	3607.0	*	110.	360.	AG	0.	100.0	0.0	12.0	0.61	5.6
9. SITE DR. LEFT QUEUE	*	1646.0	3461.0	1772.9	3461.0	*	127.	90.	AG	0.	100.0	0.0	24.0	0.73	6.4
10. SITE DR. RIGHT QUEUE	*	1646.0	3473.0	1701.0	3473.0	*	55.	90.	AG	0.	100.0	0.0	12.0	0.31	2.8

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 SO2 CUMULATIVE BUILD 1-HR FRIDAY PM

DATE : 9/10/10
TIME : 11:46:19

5. RT 161 NB RGT QUEUE *	90	65	2.0	764	1600	0.02	2	3
6. RT 161 NB THR QUEUE *	90	65	2.0	818	1600	0.02	2	3
7. RT 161 SB LFT QUEUE *	90	68	2.0	166	1600	0.02	2	3
8. RT 161 SB THR QUEUE *	90	43	2.0	468	1600	0.02	2	3
9. SITE DR. LEFT QUEUE *	90	50	2.0	929	1600	0.02	2	3
10. SITE DR. RIGHT QUEUE*	90	50	2.0	201	1600	0.02	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECEPTOR NO. 9-1	1568.0	3305.0	6.0
2. RECEPTOR NO. 9-2	1568.0	3385.0	6.0
3. RECEPTOR NO. 9-3	1568.0	3465.0	6.0
4. RECEPTOR NO. 9-4	1568.0	3505.0	6.0
5. RECEPTOR NO. 9-5	1568.0	3545.0	6.0
6. RECEPTOR NO. 9-6	1568.0	3585.0	6.0
7. RECEPTOR NO. 9-7	1568.0	3625.0	6.0
8. RECEPTOR NO. 9-8	1568.0	3665.0	6.0
9. RECEPTOR NO. 9-9	1624.0	3665.0	6.0
10. RECEPTOR NO. 9-10	1624.0	3585.0	6.0
11. RECEPTOR NO. 9-11	1624.0	3545.0	6.0
12. RECEPTOR NO. 9-12	1624.0	3513.0	6.0
13. RECEPTOR NO. 9-13	1624.0	3495.0	6.0
14. RECEPTOR NO. 9-14	1658.0	3495.0	6.0
15. RECEPTOR NO. 9-15	1698.0	3495.0	6.0
16. RECEPTOR NO. 9-16	1738.0	3495.0	6.0
17. RECEPTOR NO. 9-17	1778.0	3495.0	6.0
18. RECEPTOR NO. 9-18	1778.0	3415.0	6.0
19. RECEPTOR NO. 9-19	1698.0	3415.0	6.0
20. RECEPTOR NO. 9-20	1648.0	3415.0	6.0
21. RECEPTOR NO. 9-21	1648.0	3385.0	6.0
22. RECEPTOR NO. 9-22	1648.0	3345.0	6.0
23. RECEPTOR NO. 9-23	1648.0	3305.0	6.0
24. RECEPTOR NO. 9-24	1648.0	3265.0	6.0
25. RECEPTOR NO. 9-25	1648.0	3150.0	6.0
26. RECEPTOR NO. 9-26	1900.0	3495.0	6.0
27. RECEPTOR NO. 9-27	2000.0	3495.0	6.0
28. RECEPTOR NO. 9-28	1568.0	3800.0	6.0

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 SO2 CUMULATIVE BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.
5.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
10.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
15.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
20.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
25.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
30.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
35.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
40.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
45.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
50.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
55.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
60.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
65.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
70.	1.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
75.	1.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
80.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
85.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
90.	1.	1.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.
95.	1.	1.	2.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.
100.	1.	1.	2.	2.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
105.	1.	1.	2.	2.	1.	1.	1.	0.	0.	0.	1.	1.	2.	1.	1.	1.	1.	0.	0.	0.
110.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.	2.	1.	1.	1.	1.	0.	0.	0.
115.	1.	1.	1.	1.	1.	1.	1.	1.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
120.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
125.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
130.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
135.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
140.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
145.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
150.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
155.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.
160.	1.	1.	1.	1.	1.	1.	1.	1.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
165.	1.	1.	1.	1.	1.	2.	1.	1.	0.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
170.	1.	1.	1.	1.	1.	1.	2.	1.	1.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	0.
175.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	1.	1.	1.	1.	0.	0.	1.
180.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	1.	1.	1.	0.	0.	1.
185.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.	1.	1.	1.	0.	0.	1.
190.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	2.	2.	2.	1.	1.	0.	1.	2.
195.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	2.	2.	1.	1.	0.	1.	2.
200.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	1.	1.	0.	1.	1.
205.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	1.	1.	0.	1.	1.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 SO2 CUMULATIVE BUILD 1-HR FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28													
210. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	1.	0.	1.	1.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	2.	1.	1.	0.	1.	1.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.	1.	1.	1.	0.	1.	1.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.	1.	1.	1.	0.	1.	1.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	1.	1.	1.	1.	1.	0.	1.	1.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	1.	1.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	1.	1.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	1.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	1.	1.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.	1.	1.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	1.	1.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	1.	1.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	1.	1.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	1.	1.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	1.	1.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	1.	1.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.
350. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.
355. *	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	1.	1.
MAX *	1.	2.	2.	2.	1.	2.	2.	1.	1.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	2.
DEGR. *	170	70	90	105	155	165	170	170	180	180	180	180	180	185	190	200	220	80	80	190

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 SO2 CUMULATIVE BUILD 1-HR FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
0.	1.	1.	1.	1.	1.	0.	0.	1.
5.	1.	1.	1.	1.	1.	0.	0.	1.
10.	1.	1.	1.	1.	0.	0.	0.	1.
15.	1.	1.	0.	0.	0.	0.	0.	1.
20.	1.	1.	0.	0.	0.	0.	0.	1.
25.	1.	0.	0.	0.	0.	0.	0.	0.
30.	1.	0.	0.	0.	0.	0.	0.	0.
35.	1.	0.	0.	0.	0.	0.	0.	0.
40.	1.	0.	0.	0.	0.	0.	0.	0.
45.	1.	0.	0.	0.	0.	0.	0.	0.
50.	1.	0.	0.	0.	0.	0.	0.	0.
55.	1.	0.	0.	0.	0.	0.	0.	0.
60.	1.	0.	0.	0.	0.	0.	0.	0.
65.	1.	0.	0.	0.	0.	0.	0.	0.
70.	1.	0.	0.	0.	0.	0.	0.	0.
75.	1.	0.	0.	0.	0.	0.	0.	0.
80.	1.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	1.	0.	0.
95.	0.	0.	0.	0.	0.	1.	0.	0.
100.	0.	0.	0.	0.	0.	1.	1.	0.
105.	0.	0.	0.	0.	0.	1.	1.	0.
110.	0.	0.	0.	0.	0.	1.	1.	0.
115.	0.	0.	0.	0.	0.	1.	1.	0.
120.	0.	0.	0.	0.	0.	1.	1.	0.
125.	0.	0.	0.	0.	0.	1.	1.	1.
130.	0.	0.	0.	0.	0.	1.	1.	1.
135.	0.	0.	0.	0.	0.	1.	1.	1.
140.	0.	0.	0.	0.	0.	1.	1.	1.
145.	0.	0.	0.	0.	0.	1.	1.	1.
150.	0.	0.	0.	0.	0.	1.	1.	1.
155.	0.	0.	0.	0.	0.	1.	1.	1.
160.	0.	0.	0.	0.	0.	1.	1.	1.
165.	0.	0.	0.	0.	0.	1.	1.	1.
170.	0.	0.	0.	0.	0.	1.	1.	1.
175.	1.	1.	1.	1.	1.	1.	1.	1.
180.	1.	1.	1.	1.	1.	1.	1.	1.
185.	1.	1.	1.	1.	1.	1.	1.	1.
190.	2.	2.	2.	2.	1.	1.	1.	0.
195.	2.	2.	2.	2.	2.	1.	1.	0.
200.	1.	1.	1.	1.	1.	1.	1.	0.
205.	1.	1.	1.	1.	1.	1.	1.	0.

JOB: NY CASINO- (#10B) CTY HWY 161/SITE DRIVE RUN: 2018 SO2 CUMULATIVE BUILD 1-HR FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28
210.	1.	1.	1.	1.	1.	1.	1.	0.
215.	1.	1.	1.	1.	1.	1.	1.	0.
220.	1.	1.	1.	1.	1.	1.	1.	0.
225.	1.	1.	1.	1.	1.	1.	1.	0.
230.	1.	1.	1.	1.	1.	1.	1.	0.
235.	1.	1.	1.	1.	1.	1.	1.	0.
240.	1.	1.	1.	1.	1.	1.	1.	0.
245.	1.	1.	1.	1.	1.	1.	1.	0.
250.	1.	1.	1.	1.	1.	1.	1.	0.
255.	1.	1.	1.	1.	1.	1.	1.	0.
260.	1.	1.	1.	1.	1.	1.	1.	0.
265.	1.	1.	1.	1.	1.	1.	1.	0.
270.	1.	1.	1.	1.	1.	1.	1.	0.
275.	1.	1.	1.	1.	1.	0.	1.	0.
280.	1.	1.	1.	1.	1.	0.	0.	0.
285.	1.	1.	1.	1.	1.	0.	0.	0.
290.	1.	1.	1.	1.	1.	0.	0.	0.
295.	1.	1.	1.	1.	1.	0.	0.	0.
300.	1.	1.	1.	1.	1.	0.	0.	0.
305.	1.	1.	1.	1.	1.	0.	0.	0.
310.	1.	1.	1.	1.	1.	0.	0.	0.
315.	1.	1.	1.	1.	1.	0.	0.	0.
320.	1.	1.	1.	1.	1.	0.	0.	0.
325.	1.	1.	1.	1.	1.	0.	0.	0.
330.	1.	1.	1.	1.	1.	0.	0.	0.
335.	1.	1.	1.	1.	1.	0.	0.	0.
340.	1.	1.	1.	1.	1.	0.	0.	0.
345.	1.	1.	1.	1.	1.	0.	0.	0.
350.	1.	1.	1.	1.	2.	0.	0.	0.
355.	1.	1.	1.	1.	1.	0.	0.	0.
MAX	2.	2.	2.	2.	2.	1.	1.	1.
DEGR.	190	190	190	190	195	250	125	175

THE HIGHEST CONCENTRATION OF 2. ug/m**3 OCCURRED AT RECEPTOR REC13.

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221 PAGE 1

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION S02 FRIDAY PM

DATE : 8/17/10
TIME : 16:44:16

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	* LINK COORDINATES (FT) X1	Y1	X2	Y2 *	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	125.	.0	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	125.	.0	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	125.	.0	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	125.	.0	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	59.	.0	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	59.	.0	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	59.	.0	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	59.	.0	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	59.	.0	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	59.	.0	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	45.	.0	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	45.	.0	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	45.	.0	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	45.	.0	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	45.	.0	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	51.	.0	.0	30.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	51.	.0	.0	30.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	51.	.0	.0	30.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	51.	.0	.0	30.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	1.	.0	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	1.	.0	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	1.	.0	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	101.	.0	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	101.	.0	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	101.	.0	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	101.	.0	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	101.	.0	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	153.	.0	.0	30.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	153.	.0	.0	30.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	48.	.0	.0	30.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	48.	.0	.0	30.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.0	.0	30.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.0	.0	30.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.0	.0	30.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.0	.0	30.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.0	.0	30.0		
37. Existing On Ramp 1	********	********	********	********	181.	240.	AG	105.	.0	.0	30.0		
38. Existing On Ramp 2	********	********	********	********	199.	278.	AG	105.	.0	.0	30.0		
39. Existing On Ramp 3	********	********	********	********	181.	314.	AG	105.	.0	.0	30.0		
40. Existing On Ramp 4	********	********	********	********	170.	344.	AG	105.	.0	.0	30.0		
41. CR 161 SB Queue	********	********	********	********	12.	212.	AG	0.	100.0	.0	12.0	.24	.6
42. RTE 173 Queue Ex	********	********	********	********	1152.	104.	AG	0.	100.0	.0	12.0	2.50	58.5

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION S02 FRIDAY PM

DATE : 8/17/10
TIME : 16:44:16

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
41. CR 161 SB Queue	48	200.	.02
42. RTE 173 Queue Ex	125	50.	.02

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION S02 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION S02 FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
DEGR. *	125	70	115	110	65	70	110	100	105	105	110	20	35	0	20	65	100	100	110	110

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION S02 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2010 EXISTING CONDITION S02 FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEGR.	120	115	110	115	125	85	95	90	90	100	110	110	120	130	0	0	120	135	0	25

THE HIGHEST CONCENTRATION OF 1. ug/m**3 OCCURRED AT RECEPTOR REC17.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION S02 FRIDAY PM

DATE : 9/10/10
TIME : 15:37:54

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	193.	.0	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	193.	.0	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	193.	.0	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	193.	.0	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	65.	.0	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	65.	.0	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	65.	.0	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	65.	.0	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	65.	.0	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	65.	.0	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	50.	.0	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	50.	.0	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	50.	.0	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	50.	.0	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	52.	.0	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	59.	.0	.0	30.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	59.	.0	.0	30.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	59.	.0	.0	30.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	59.	.0	.0	30.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	1.	.0	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	1.	.0	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	1.	.0	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	166.	.0	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	166.	.0	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	166.	.0	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	166.	.0	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	166.	.0	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	53.	.0	.0	30.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	53.	.0	.0	30.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	53.	.0	.0	30.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	53.	.0	.0	30.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.0	.0	30.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.0	.0	30.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.0	.0	30.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.0	.0	30.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.0	.0	30.0		
37. Existing On Ramp 1	********	********	********	********	181.	240.	AG	181.	.0	.0	30.0		
38. Existing On Ramp 2	********	********	********	********	199.	278.	AG	181.	.0	.0	30.0		
39. Existing On Ramp 3	********	********	********	********	181.	314.	AG	181.	.0	.0	30.0		
40. Existing On Ramp 4	********	********	********	********	170.	344.	AG	181.	.0	.0	30.0		
41. CR 161 SB Queue	********	********	********	********	12.	212.	AG	0.	100.0	.0	12.0	.26	.6
42. RTE 173 Queue Ex	********	********	********	********	394.	105.	AG	0.	100.0	.0	12.0	.96	20.0

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION S02 FRIDAY PM

DATE : 9/10/10
TIME : 15:37:54

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
41. CR 161 SB Queue	53	200.	.02
42. RTE 173 Queue Ex	193	200.	.02

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION S02 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION S02 FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
270. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
275. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
280. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
285. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
290. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
295. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
300. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
305. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355. *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX *	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
DEGR. *	0	0	110	120	70	70	105	105	0	115	0	20	35	0	20	0	85	280	255	195

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION S02 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 NO BUILD CONDITION S02 FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEGR.	225	120	150	190	220	90	85	90	95	100	0	135	160	0	340	0	195	0	0	0

THE HIGHEST CONCENTRATION OF 1. ug/m**3 OCCURRED AT RECEPTOR REC18.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION S02 FRIDAY PM

DATE : 9/10/10
TIME : 15:36:22

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	388.	.0	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	388.	.0	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	388.	.0	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	388.	.0	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	76.	.0	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	76.	.0	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	76.	.0	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	76.	.0	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	76.	.0	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	76.	.0	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	59.	.0	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	59.	.0	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	59.	.0	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	59.	.0	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	59.	.0	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	891.	.0	.0	42.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	891.	.0	.0	42.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	891.	.0	.0	42.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	891.	.0	.0	42.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	3.	.0	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	3.	.0	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	3.	.0	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	371.	.0	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	371.	.0	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	371.	.0	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	371.	.0	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	371.	.0	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	893.	.0	.0	42.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	893.	.0	.0	42.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	893.	.0	.0	42.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	893.	.0	.0	42.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.0	.0	42.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.0	.0	42.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.0	.0	42.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.0	.0	42.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.0	.0	42.0		
37. Future 173 WB Ramp A	********	********	********	********	63.	211.	AG	868.	.0	.0	30.0		
38. Future 173 WB Ramp B	********	********	********	********	60.	261.	AG	868.	.0	.0	30.0		
39. Future 173 WB Ramp C	********	********	********	********	72.	273.	AG	868.	.0	.0	30.0		
40. Route 173 Queue Futu	********	********	********	********	1789.	110.	AG	0.	100.0	.0	12.0	1.66	90.9
41. Route 173 Queue Futu	********	********	********	********	1789.	103.	AG	0.	100.0	.0	12.0	1.66	90.9
42. CR 161 SB Queue	********	********	********	********	12.	212.	AG	0.	100.0	.0	12.0	.12	.6

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION S02 FRIDAY PM

DATE : 9/10/10
TIME : 15:36:22

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
40. Route 173 Queue Futu	332	200.	.02
41. Route 173 Queue Futu	332	200.	.02
42. CR 161 SB Queue	24	200.	.02

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION S02 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	1.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	1.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	1.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	1.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	1.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	1.	0.	0.	0.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	1.	0.	0.	0.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	1.	0.	0.	0.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION S02 FRIDAY PM

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245. *	0.	0.	1.	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250. *	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255. *	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
260. *	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
265. *	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270. *	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275. *	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280. *	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285. *	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
290. *	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295. *	0.	0.	0.	1.	1.	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAX *	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	1.	0.	0.	0.
DEGR. *	125	10	110	270	300	30	130	125	120	150	295	10	15	345	60	80	285	125	110	270

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION S02 FRIDAY PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.	1.	1.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.	1.	0.	1.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
30.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
35.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
40.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
45.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
50.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 BUILD CONDITION S02 FRIDAY PM

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
220.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	1.	0.	0.	0.	0.
225.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	1.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
265.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
270.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
275.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	1.	0.	1.	0.	1.	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.	1.	1.	1.	0.	0.	0.	0.
MAX	0.	1.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
DEGR.	125	275	260	125	130	65	80	90	95	105	110	250	5	0	0	220	125	180	30	25

THE HIGHEST CONCENTRATION OF 1. ug/m**3 OCCURRED AT RECEPTOR REC26.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION S02 FRID

DATE : 9/10/10
TIME : 15:36:38

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 ug/m**3

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Route 173 EB 1	********	********	********	********	224.	148.	AG	683.	.0	.0	30.0		
2. Route 173 EB 2	********	********	********	********	190.	127.	AG	683.	.0	.0	30.0		
3. Route 173 EB 3	********	********	********	********	228.	108.	AG	683.	.0	.0	30.0		
4. Route 173 EB 4	********	********	********	********	80.	101.	AG	683.	.0	.0	30.0		
5. Route 173 EB 5	********	********	********	********	80.	98.	AG	73.	.0	.0	30.0		
6. Route 173 EB 6	********	********	********	********	151.	86.	AG	73.	.0	.0	30.0		
7. Route 173 EB 7	********	********	********	********	356.	60.	AG	73.	.0	.0	30.0		
8. Route 173 EB 8	********	********	********	********	177.	63.	AG	73.	.0	.0	30.0		
9. Route 173 EB 9	********	********	********	********	174.	79.	AG	73.	.0	.0	30.0		
10. Route 173 EB 10	********	********	********	********	276.	88.	AG	73.	.0	.0	30.0		
11. Route 173 WB 1	********	********	********	********	276.	268.	AG	56.	.0	.0	30.0		
12. Route 173 WB 2	********	********	********	********	174.	258.	AG	56.	.0	.0	30.0		
13. Route 173 WB 3	********	********	********	********	531.	240.	AG	56.	.0	.0	30.0		
14. Route 173 WB 4	********	********	********	********	151.	265.	AG	56.	.0	.0	30.0		
15. Route 173 WB 5	********	********	********	********	80.	281.	AG	56.	.0	.0	30.0		
16. Route 173 WB 6	********	********	********	********	149.	284.	AG	790.	.0	.0	42.0		
17. Route 173 WB 7	********	********	********	********	154.	290.	AG	790.	.0	.0	42.0		
18. Route 173 WB 8	********	********	********	********	177.	309.	AG	790.	.0	.0	42.0		
19. Route 173 WB 8	********	********	********	********	212.	326.	AG	790.	.0	.0	42.0		
20. Country Road NB 1A	********	********	********	********	273.	4.	AG	3.	.0	.0	20.0		
21. Country Road NB 1B	********	********	********	********	185.	6.	AG	3.	.0	.0	20.0		
22. Country Road NB 1C	********	********	********	********	236.	11.	AG	3.	.0	.0	20.0		
23. Country Road NB 2A	********	********	********	********	128.	21.	AG	663.	.0	.0	20.0		
24. Country Road NB 2B	********	********	********	********	135.	26.	AG	663.	.0	.0	20.0		
25. Country Road NB 2C	********	********	********	********	102.	31.	AG	663.	.0	.0	20.0		
26. Country Road NB 2D	********	********	********	********	148.	18.	AG	663.	.0	.0	20.0		
27. Country Road NB 2E	********	********	********	********	258.	12.	AG	663.	.0	.0	20.0		
28. Country Road SB 1A	********	********	********	********	242.	193.	AG	790.	.0	.0	42.0		
29. Country Road SB 1B	********	********	********	********	166.	196.	AG	790.	.0	.0	42.0		
30. Country Road SB 1C	********	********	********	********	106.	210.	AG	21.	.0	.0	42.0		
31. Country Road SB 1D	********	********	********	********	210.	204.	AG	21.	.0	.0	42.0		
32. Country Road SB 2A	********	********	********	********	127.	192.	AG	5.	.0	.0	42.0		
33. Country Road SB 2B	********	********	********	********	91.	193.	AG	5.	.0	.0	42.0		
34. Country Road SB 2C	********	********	********	********	64.	186.	AG	5.	.0	.0	42.0		
35. Country Road SB 2D	********	********	********	********	107.	187.	AG	5.	.0	.0	42.0		
36. Country Road SB 2E	********	********	********	********	351.	185.	AG	5.	.0	.0	42.0		
37. Future 173 WB Ramp A	********	********	********	********	63.	211.	AG	768.	.0	.0	30.0		
38. Future 173 WB Ramp B	********	********	********	********	60.	261.	AG	768.	.0	.0	30.0		
39. Future 173 WB Ramp C	********	********	********	********	72.	273.	AG	768.	.0	.0	30.0		
40. Route 173 Queue Futu	********	********	********	********	5228.	110.	AG	0.	100.0	.0	12.0	3.13	265.6
41. Route 173 Queue Futu	********	********	********	********	4009.	103.	AG	0.	100.0	.0	12.0	2.63	203.7
42. CR 161 SB Queue	********	********	********	********	12.	212.	AG	0.	100.0	.0	12.0	.10	.6

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION S02 FRID

DATE : 9/10/10
TIME : 15:36:38

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	APPROACH VOL (VPH)	CAPACITY (VPH)	IDLE EM FAC (gm/hr)
40. Route 173 Queue Futu	627	200.	.02
41. Route 173 Queue Futu	527	200.	.02
42. CR 161 SB Queue	21	200.	.02

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. House 1	********	********	5.9
2. House 2	********	********	5.9
3. Intersection NW	********	********	5.9
4. Intersection NE	********	********	5.9
5. Intersection SE	********	********	5.9
6. Intersection SW	********	********	5.9
7. 1	********	********	5.9
8. 2	********	********	5.9
9. 3	********	********	5.9
10. 4	********	********	5.9
11. 5	********	********	5.9
12. 6	********	********	5.9
13. 7	********	********	5.9
14. 8	********	********	5.9
15. 9	********	********	5.9
16. 10	********	********	5.9
17. 11	********	********	5.9
18. 12	********	********	5.9
19. 13	********	********	5.9
20. 14	********	********	5.9
21. 15	********	********	5.9
22. 16	********	********	5.9
23. 17	********	********	5.9
24. 18	********	********	5.9
25. 19	********	********	5.9
26. 20	********	********	5.9
27. 21	********	********	5.9
28. 22	********	********	5.9
29. 23	********	********	5.9
30. 24	********	********	5.9
31. 25	********	********	5.9
32. 26	********	********	5.9
33. 27	********	********	5.9
34. 28	********	********	5.9
35. 29	********	********	5.9
36. 30	********	********	5.9
37. 32	********	********	5.9
38. 33	********	********	5.9
39. 34	********	********	5.9
40. 35	********	********	5.9

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION S02 FRID

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	CONCENTRATION (ug/m**3) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
40.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
45.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
50.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
55.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
80.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
85.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
90.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
95.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
100.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	0.	0.
105.	0.	0.	1.	0.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	0.	0.
110.	0.	0.	1.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	0.	0.
115.	0.	0.	1.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
120.	0.	0.	1.	0.	1.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
125.	0.	0.	1.	0.	1.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
130.	0.	0.	1.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
135.	0.	0.	1.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
140.	0.	0.	1.	0.	0.	0.	1.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.
145.	0.	0.	1.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	1.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	1.	0.	0.	0.	1.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	1.	0.	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	1.	0.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	1.	0.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	1.	0.	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
185.	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION S02 FRID

WIND * CONCENTRATION
ANGLE * (ug/m**3)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40	
210. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
225. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
230. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
235. *	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
240. *	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
245. *	0.	0.	1.	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
250. *	0.	0.	1.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
255. *	0.	0.	1.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
260. *	0.	0.	1.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
265. *	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
270. *	0.	0.	0.	1.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
275. *	0.	0.	0.	1.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
280. *	0.	0.	0.	1.	1.	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	1.	2.	0.	0.
285. *	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	2.	0.	0.
290. *	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	1.	2.	0.	0.
295. *	0.	0.	0.	0.	1.	1.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	2.	2.	0.	0.
300. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	1.	1.	0.	0.
305. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.	0.	0.
310. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
315. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
320. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
325. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
330. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
340. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
345. *	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
350. *	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
355. *	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
MAX *	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	2.	2.	0.	0.
DEGR. *	355	85	200	270	300	25	120	120	120	125	140	5	60	320	60	80	295	105	115	110

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION S02 FRID

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	1.	0.	0.	1.	1.	1.	0.	0.	0.	0.
5.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	0.
10.	0.	0.	0.	0.	0.	1.	1.	0.	0.	1.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.
15.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.
20.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
25.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
35.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
40.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
45.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
50.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
55.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
60.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
65.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
70.	0.	0.	0.	0.	0.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
75.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
80.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
85.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
100.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
110.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
120.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
125.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
130.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
140.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
160.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
170.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
175.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
180.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
185.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
190.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
195.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
200.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
205.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

JOB: OLD RTE 17 AND CTY 161 RUN: 2018 CUMULATIVE BUILD CONDITION S02 FRID

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
215.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
220.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
225.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
230.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
235.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
240.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
245.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
255.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
260.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
265.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
270.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
275.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
280.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
285.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
290.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
295.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
300.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
305.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
310.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
315.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
320.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
325.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
330.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
335.	0.	0.	0.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
340.	0.	0.	0.	0.	0.	1.	0.	1.	1.	1.	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
345.	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.
350.	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.
355.	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.	1.	1.	1.	0.	0.	0.	0.
MAX	0.	1.	0.	0.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.	0.	1.	1.
DEGR.	110	265	265	110	115	65	80	90	105	105	110	230	10	0	0	0	25	35	30	35

THE HIGHEST CONCENTRATION OF 2. ug/m**3 OCCURRED AT RECEPTOR REC18.

Mesoscale Analyses

Total Daily Volatile Organic Compound (VOC) Emissions in the Mesoscale Study Area (Orange County) - Stockbridge-Munsee Casino, Thompson, New York

		MOBILE6 VOC Emission Rate (gram/mile)	Vehicle Miles Traveled (VMT) (miles/day)			Mesoscale VOC Emissions (kg/day)		
Route I.D.	Speed (mph)	2018	2018 No-Build	2018 Build	2018 Cumulative Build	2018 No-Build	2018 Build	2018 Cumulative Build
6	45	0.25	535,023	556,228	585,501	133.8	139.1	146.4
9W	45	0.25	395,371	395,538	395,809	98.8	98.9	99.0
17	60	0.28	2,994,026	3,198,359	3,480,402	838.3	895.5	974.5
17A	45	0.25	183,593	183,913	184,461	45.9	46.0	46.1
17K	45	0.25	301,699	303,669	306,450	75.4	75.9	76.6
17M	45	0.25	256,369	256,562	256,847	64.1	64.1	64.2
32	40	0.26	382,156	382,627	383,335	99.4	99.5	99.7
42	45	0.25	49,162	49,261	49,559	12.3	12.3	12.4
52	45	0.25	160,658	160,914	161,319	40.2	40.2	40.3
94	45	0.25	297,154	297,481	297,904	74.3	74.4	74.5
97	40	0.26	17,198	17,231	17,297	4.5	4.5	4.5
202	40	0.26	722	723	724	0.2	0.2	0.2
207	45	0.25	171,527	171,878	172,372	42.9	43.0	43.1
208	45	0.25	264,367	264,588	264,847	66.1	66.1	66.2
209	45	0.25	77,953	79,971	82,773	19.5	20.0	20.7
210	45	0.25	18,786	18,786	18,867	4.7	4.7	4.7
211	40	0.26	244,220	244,577	245,140	63.5	63.6	63.7
218	40	0.26	65,388	65,489	65,589	17.0	17.0	17.1
284	45	0.25	36,761	36,761	36,941	9.2	9.2	9.2
293	40	0.26	28,644	28,712	28,780	7.4	7.5	7.5
300	45	0.25	237,710	237,955	238,263	59.4	59.5	59.6
302	45	0.25	106,064	106,169	106,274	26.5	26.5	26.6
416	40	0.26	22,175	22,218	22,260	5.8	5.8	5.8
980P	40	0.26	26,094	26,115	26,181	6.8	6.8	6.8
980T	40	0.26	53,693	53,768	53,843	14.0	14.0	14.0
980U	40	0.26	1,716	1,729	1,742	0.4	0.4	0.5
980W	40	0.26	2,976	2,976	2,989	0.8	0.8	0.8
982E	40	0.26	1,284	1,287	1,290	0.3	0.3	0.3
982P	40	0.26	2,426	2,429	2,433	0.6	0.6	0.6
984C	40	0.26	16,347	16,347	16,354	4.3	4.3	4.3
984K	40	0.26	3,396	3,400	3,404	0.9	0.9	0.9
987C	40	0.26	36,646	36,673	36,705	9.5	9.5	9.5
987E	40	0.26	11,505	11,585	11,664	3.0	3.0	3.0
I-84	65	0.28	2,699,507	2,753,756	2,828,854	755.9	771.1	792.1
I-87	65	0.28	3,148,114	3,198,428	3,267,986	881.5	895.6	915.0
				Total Daily VOC Emissions (kg/day):		3,487.0	3,580.7	3,710.3

Total Daily Oxides of Nitrogen (NO_x) Emissions in the Mesoscale Study Area (Orange County) - Stockbridge-Munsee Casino, Thompson, New York

		MOBILE6 NO_x Emission Rate (gram/mile)	Vehicle Miles Traveled (VMT) (miles/day)			Mesoscale NO_x Emissions (kg/day)		
Route I.D.	Speed (mph)	2018	2018 No-Build	2018 Build	2018 Cumulative Build	2018 No-Build	2018 Build	2018 Cumulative Build
6	45	0.25	535,023	556,228	585,501	133.8	139.1	146.4
9W	45	0.25	395,371	395,538	395,809	98.8	98.9	99.0
17	60	0.66	2,994,026	3,198,359	3,480,402	1,976.1	2,110.9	2,297.1
17A	45	0.25	183,593	183,913	184,461	45.9	46.0	46.1
17K	45	0.25	301,699	303,669	306,450	75.4	75.9	76.6
17M	45	0.25	256,369	256,562	256,847	64.1	64.1	64.2
32	40	0.24	382,156	382,627	383,335	91.7	91.8	92.0
42	45	0.25	49,162	49,261	49,559	12.3	12.3	12.4
52	45	0.25	160,658	160,914	161,319	40.2	40.2	40.3
94	45	0.25	297,154	297,481	297,904	74.3	74.4	74.5
97	40	0.24	17,198	17,231	17,297	4.1	4.1	4.2
202	40	0.24	722	723	724	0.2	0.2	0.2
207	45	0.25	171,527	171,878	172,372	42.9	43.0	43.1
208	45	0.25	264,367	264,588	264,847	66.1	66.1	66.2
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980W	40	0.24	2,976	2,976	2,989	0.7	0.7	0.7
982E	40	0.24	1,284	1,287	1,290	0.3	0.3	0.3
982P	40	0.24	2,426	2,429	2,433	0.6	0.6	0.6
984C	40	0.24	16,347	16,347	16,354	3.9	3.9	3.9
984K	40	0.24	3,396	3,400	3,404	0.8	0.8	0.8
987C	40	0.24	36,646	36,673	36,705	8.8	8.8	8.8
987E	40	0.24	11,505	11,585	11,664	2.8	2.8	2.8
I-84	65	0.73	2,699,507	2,753,756	2,828,854	1,970.6	2,010.2	2,065.1
I-87	65	0.73	3,148,114	3,198,428	3,267,986	2,298.1	2,334.9	2,385.6
				Total Daily NO_x Emissions (kg/day):		7,237.8	7,456.2	7,758.0

Appendix J

Socioeconomic Report

TETRA TECH

Stockbridge-Munsee Casino

Thompson, New York

Socioeconomic Conditions & Impacts

Appendix J: Final Environmental Impact Statement

Prepared for:
Tetra Tech

On Behalf of:
Stockbridge-Munsee Band of Mohican Indians

Prepared by:
AKRF, Inc.
440 Park Avenue South
New York, New York

March 2012

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A. INTRODUCTION

The Stockbridge-Munsee Community, Band of Mohican Indians, a federally-recognized Indian tribe, is proposing the development of a destination casino resort (the "Casino Project") that includes a Class III gaming complex, as well as such ancillary facilities as a hotel, food and beverage outlets, retail facilities, and a service station. The Casino Project would be located in the Town of Thompson, Sullivan County, New York. The proposed site is immediately adjacent to State Route 17, a major transportation corridor, and is located approximately 100 miles away from New York City.

For the Casino Project to be developed, the U.S. Department of Interior, Bureau of Indian Affairs (BIA) must take the lands on which the casino would be developed into trust for the Tribe. To do so, the BIA must comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 et seq.) and the Council on Environmental Quality Guidelines for Implementing NEPA (40 CFR Parts 1500-1508).

Among the considerations that the BIA must take into account are the effects of the proposed Casino Project on the socioeconomic conditions of the affected area. This analysis describes the probable impacts of the Casino Project on local and regional socioeconomic conditions.

The Casino Project would have a generally beneficial influence by introducing new jobs, sales and tax revenues, and visitors to the area during both its short-term construction period and long-term operation. On the other hand, the Casino Project would increase the demand for certain municipal services such as police and schools, and their corresponding costs. In addition, there exists the likelihood that certain competing sectors of the localized economy, such as movie theaters and restaurants, may experience decreased economic activity as a result of the presence of the proposed casino. This report assesses the public sector financial implications of constructing and operating the proposed Casino Project, and describes the likely socioeconomic effects of the Casino Project on the existing housing and labor markets, as well as the area's tourist industry.

To place the effects of the Casino Project in the appropriate socioeconomic context, the chapter begins by establishing the economic baseline for the region that would potentially be affected by the Casino Project. For this region, termed the economic study area, the chapter describes existing demographic characteristics, including population and household trends, median household income, and a comparison of income distribution throughout the study area. The chapter then presents a discussion of the workforce in the study area, outlining overall labor supply and labor force demographics, and defining several challenges specific to a rural workforce. The existing conditions discussion concludes with a quantitative and qualitative discussion of the region's tourism-based industry, outlining trends in the retail trade and service sectors.

The report then describes the economic activity that would be generated by the Casino Project during both the construction and operation periods, including employment and sales. The economic and fiscal impacts are projected using the U.S. Department of Commerce's Regional Input-Output Modeling System (RIMS II), which measures the direct effects of the Casino Project as well as the secondary "ripple effects" through the local and regional economies. The report then describes the likely effects of the Casino Project on employment and housing in the study area. Since the Casino Project would introduce a new resort-type destination attraction to the County, the likely effects on the existing tourism industry are discussed, particularly for the entertainment, eating and drinking, and lodging markets within the service and retail sectors. Finally, using information collected as part of the analysis of community resources, this chapter discusses how the Casino Project might affect municipal services.

B. METHODOLOGY

The analysis of potential impacts on socioeconomic conditions focuses on an economic study area, which is the area most likely to be affected by the proposed Casino Project. Based on a geographic evaluation of the region and patterns identified through journey-to-work data, it is estimated that approximately 84 percent of the future employees for the Casino Project would be located within a one-hour driving distance of the Casino Project site. This extensive study area includes the immediate vicinity of the proposed Casino Project, as well as the larger area from which employees would be drawn and new employees would establish residence. The study area used in this chapter is therefore defined by this driving distance, and it encompasses all of Sullivan and Orange Counties in New York, as well as portions of Ulster and Delaware Counties in New York, and portions of Wayne and Pike Counties in Pennsylvania (see Figure 1). The baseline economic conditions presented in this chapter focus on this study area, with comparative information provided for New York State, as well as for the Town of Thompson, which would be the local municipality most directly affected by the Casino Project.[1]

Various sources have been used to prepare this chapter. In rural areas such as this, in which there are few employers in particular industry categories, the Census Bureau and Bureau of Labor Statistics follow a common policy to suppress industry-specific data for any jurisdiction that might inadvertently reveal information about a specific firm which by itself employs a substantial share of the workforce in that industry. This problem of suppression of data arose frequently in evaluations of business data at the municipal level. Given these limits and the changing nature of the economy under examination, data were collected from multiple sources and at a variety of municipal levels in an effort to present the most accurate data available. In several cases, county level data were used to ensure that the information presented was as robust as possible. In addition to analyzing existing data from the U.S. Census Bureau and the New York State and Pennsylvania Departments of Labor, data from ESRI Business Analyst, Inc.—a demographic and market data provider—were used to provide industry-specific data for Sullivan County.

Several data sets presented in the 2005 Draft EIS have been updated or supplemented in this updated report in order to depict more current conditions: demographic data was updated with 2010 Census data and 2006-2010 American Community Survey data; New York and Pennsylvania State Departments of Labor data have been updated to reflect 2010 industrial employment figures and wages; New York State Department of Labor data have been updated to

[1] The use of drive times for defining commuter behavior and market area is well established and employed by the U.S. Census Bureau.

reflect 2010 unemployment characteristics; updated New York Metropolitan Transportation Council (NYMTC) population and employment forecasts were applied to the analysis; and more recent school enrollment and budget data were obtained from the New York State Education Department. In addition, all dollar values are reported in 2011 dollars, unless otherwise indicated.

The report also relies upon interviews conducted with individuals involved in business operations, housing, employment and employment training, as well as county officials and New York State Department of Labor analysts. Interviews were conducted prior to issuance of the 2005 Draft EIS, and were supplemented by additional interviews conducted in October 2007 and July 2010. In addition to interviews, information on the real estate market was gathered from the Catskill Buyer Agency Market Condition Reports for the period from 2007 through July 2010. This qualitative data provided a practical and up-to-date verification of other data sources, and provided local input and perspective absent in more readily obtainable data sources.

C. EXISTING CONDITIONS

DEMOGRAPHIC CHARACTERISTICS

POPULATION TRENDS

The residential population in the Town of Thompson, as well as in Sullivan County and the study area as a whole, increased from 2000 to 2010 (see Table 1). The Town of Thompson, with a year 2010 residential population of 15,308, was the most populous township in Sullivan County, representing approximately 19.7 percent of the countywide population of 77,547. Thompson had a faster rate of growth compared to Sullivan County as a whole from 2000 to 2010, meaning that Thompson is growing at a faster rate than other areas within Sullivan County. Over half of the residents of Thompson reside within the villages of Monticello (6,726 residents in 2010) and Rock Hill (1,742 residents in 2010); outside of these municipalities, Thompson remains a low-density, largely rural area.

Table 1
Population 2000-2010

Area	2000	2010	2000-2010 % Change
Town of Thompson	14,189	15,308	7.9%
Sullivan County	73,966	77,547	4.8%
Study Area	489,262	529,892	8.3%
New York State	18,976,457	19,378,102	2.1%

Sources: 2000 data from U.S. Census, Summary File 1; 2010 data 2010 Census Summary File 1.

As shown in Table 1, the study area grew at a rate approximately four-times that of New York State from 2000 to 2010. Orange County contributed heavily to the growth in the study area, with a gain in population of over 31,000 residents, and a nine percent growth rate for the decade. Sullivan County had a slower growth rate at 4.8 percent, but still was higher than the 2.1 percent growth rate for New York State. The townships in Pike County that are within the study area experienced a 10.7 percent growth rate from 2000 to 2010, with a net increase of 1,432 residents.

It is important to note that the population data collected by the U.S. Census Bureau do not include seasonal residents, or those who own second homes in the area. This is a major factor in the Catskill mountain region, which has a high percentage of seasonal/second homes. According to the Sullivan County Division of Planning and Community Development, there are 10,085 second home owners in the County,[1] and the County's population increases at least 2.5 times during the summer months due to seasonal residents (not including those staying overnight in hotels).[2] The population growth in Pike County is attributable in large part to the conversion of seasonal/second homes to permanent homes due to the increasing popularity of the area as bedroom communities to the greater metropolitan region.

In terms of race and ethnicity, the Town of Thompson contains a racial composition similar to New York State as a whole, with the greatest difference in the percentage of Asian residents (see Table 2). Compared to the state and the Town of Thompson, Sullivan County and the study area have substantially higher percentages of white residents, as well as lower percentages of blacks/African Americans and Hispanics compared to the state. The Town of Thompson, Sullivan County, and the study area all have smaller proportions of Asian residents compared to New York State.

Table 2
2010 Race and Ethnicity as a Percentage of Total Population

Race/Ethnicity	Town of Thompson	Sullivan County	Study Area	New York State
White	61.8%	77.2%	74.0%	60.4%
Black/African American	16.1%	8.1%	8.3%	13.9%
Hispanic or Latino	17.7%	11.6%	14.1%	16.2%
American Indian and Alaska Native	0.4%	0.3%	0.3%	0.3%
Asian	2.3%	1.4%	2.0%	7.4%
Native Hawaiian/Other Pacific Islander	0.0%	0.0%	0.0%	0.0%
Other	0.3%	0.2%	0.2%	0.4%
Two or more races	1.4%	1.1%	1.2%	1.3%

Notes: * The racial and ethnic categories provided are further defined as: White (White alone, not Hispanic or Latino); Black (Black or African American alone, not Hispanic or Latino); Asian (Asian alone, not Hispanic or Latino); Other (American Indian and Alaska Native alone, not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone, not Hispanic or Latino; Some other race alone, not Hispanic or Latino; Two or more races, not Hispanic or Latino); Hispanic (Hispanic or Latino; Persons of Hispanic origin may be of any race).

Source: U.S. Census Bureau, Census 2010.

[1] Sullivan County Division of Planning and Community Development, *Second Home Owner Study 2008*. Accessed July 2010. p. 3. http://co.sullivan.ny.us/Departments/DepartmentsNZ/PlanningandEnvironmentalManagement/SecondHomeOwnerStudy/tabid/3259/Default.aspx

[2] Sullivan County Division of Planning and Community Development, *Building Activity Report, 1990-1998*. June 1999. p. 3.

HOUSEHOLD TRENDS

Reflecting growth in the residential population, the number of households in the Town of Thompson, Sullivan County, and the study area increased between 2000 and 2010, with all of these areas experiencing a higher rate of growth compared to the State as a whole during this time period. As of 2010, Thompson contained 5,982 households, or approximately 20 percent of the County total of 30,139 (see Table 3). Similar to the population trends discussed above, growth in the number of households increased at a slower rate in the Town of Thompson compared to Sullivan County as a whole (7.9 percent compared to 9.0 percent). The number of households in the study area in 2010 was 185,439, which was a 9.5 percent increase since 2000, or more than double the growth rate for households in New York State during the same period.

Table 3
Household Trends 2000-2010

Area	2000	2010	2000-2010 % Change
Number of Households			
Town of Thompson	5,543	5,982	7.9%
Sullivan County	27,661	30,139	9.0%
Study Area	169,389	185,439	9.5%
New York State	7,056,860	7,317,755	3.7%
Average Household Size			
Town of Thompson	2.44	2.45	0.4%
Sullivan County	2.50	2.45	-2.0%
Study Area	2.75*	2.74	-0.5%
New York State	2.61	2.57	-1.5%

Notes: * Average Household Size for the Study Area is a weighted average based on the number of households in each County/Township.
Sources: 2000 data from U.S. Census, Summary File 1; 2010 data 2010 Census, Summary File 1.

The average size of households has decreased in each area, except for the Town of Thompson. As of 2010, the average household size in the Town of Thompson was 2.45 persons per household, slightly higher than the average household size of 2.44 persons per household in 2000 (see Table 3). Sullivan County had the same average household size as the Town of Thompson in 2010, down from 2.50 persons per household in 2000. This decline generally reflects the aging of the population, as older populations generally have fewer children living at home.

The Town of Thompson, Sullivan County, and the study area as a whole all have higher percentages of vacant housing units compared to New York State in 2010 (see Table 4). As discussed above, this is primarily due to the relatively high numbers of seasonal and second homes in these areas; as shown in Table 4, a vast majority of the vacant housing units in the study area are for seasonal, recreational, or occasional use. In fact, the percentages of vacant housing units for rent or sale are higher for New York State than in the Town of Thompson, Sullivan County, and the study area. Within the study area, 12.7 percent of the year 2010 vacant housing units (5,382 housing units) were available for rent, while 8.8 percent (3,747 housing units) were available for sale only.

Table 4
Characteristics of 2010 Housing Stock

	Town of Thompson	Sullivan County	Study Area	New York State
2010 Housing Units	9,130	49,186	227,782	8,108,103
Occupancy status for all housing units				
Occupied	65.5%	61.3%	81.4%	90.3%
Vacant	34.5%	38.7%	18.6%	9.7%
Tenure of occupied housing units				
Owner occupied	52.5%	67.0%	69.7%	53.3%
Renter occupied	47.5%	33.0%	30.3%	46.7%
Vacancy status of vacant housing units				
For rent	10.8%	7.5%	12.7%	25.3%
For sale only	7.5%	5.4%	8.8%	9.8%
Rented or sold, not occupied	1.8%	1.5%	2.6%	4.3%
For seasonal, recreational, or occasional use	68.1%	75.3%	61.7%	36.6%
Other vacant	11.8%	10.3%	14.1%	24.0%

Source: U.S. Census, 2010 Summary File 1.

According to 2010 U.S. Census data, approximately 23.5 percent of the housing units in the Town of Thompson and 29.2 percent of all housing units in Sullivan County were classified as units for seasonal, recreational, or occasional use.[1] Other sources site even higher percentages for the area; a study conducted by the Northeast Center for Rural Development at Penn State University calculated that 52 percent of all housing units in Sullivan County and 44 percent of housing units in Pike County were seasonal homes.[2] The study area as a whole had a lower percentage of seasonal homes compared to the Town of Thompson, due to smaller percentages of seasonal homes in Ulster and Orange Counties (8.1 percent and 1.8 percent, respectively). Second-home owners and users are not accounted for in the residential population data cited above.

As one would expect in largely rural areas, the Town of Thompson, Sullivan County, and the study area all have significantly higher percentages of single-family detached housing units compared to the State (see Table 5). Approximately two-thirds of the housing units in the study area are single-family, detached homes, while another five percent are single-family attached homes.

[1] These are vacant units used or intended for use only seasonally or for weekend or other occasional use throughout the year. Seasonal units include those used for summer or winter sports or recreation, such as hunting cabins. Seasonal units also may include quarters for such workers as loggers. Interval ownership units, sometimes called shared-ownership or time-sharing condominiums, are also included.

[2] http://pike.extension.psu.edu/Family/NDN/2002/Aug-Oct/cd.html

Table 5
2006 -2010 Type of Housing Units (Units per structure)

Housing Type	Town of Thompson	Sullivan County	Study Area	New York State
Single family, detached	51.0%	67.4%	66.4%	42.1%
Single family, attached	10.5%	4.3%	5.0%	4.9%
2 to 4 units	14.4%	9.8%	12.4%	18.2%
5 to 9 units	8.9%	4.4%	5.1%	5.3%
10 to 19	4.3%	1.6%	2.6%	4.2%
20 to 49	1.9%	0.7%	1.3%	7.9%
50 or more	1.3%	0.8%	1.5%	14.9%
Mobile home	7.7%	11.0%	5.7%	2.5%
Boat, RV, van, etc.	0.0%	0.0%	0.0%	0.0%
Source: U.S. Census, 2006-2010 American Community Survey.				

The vacant housing stock in the study area in 2000 closely mirrored the overall composition of housing units in the study area (see Table 6). This indicates that within the study area, there were no disproportionately high vacancy rates for any one type of housing unit.

Table 6
Type of Vacant Housing Units (Units per structure) in 2000

Housing Type	Town of Thompson	Sullivan County	Study Area	New York State
Single family, detached	55.1%	68.8%	65.1%	42.9%
Single family, attached	12.6	5.4	4.1	3.9
2 to 4 units	13.8	9.6	11.8	21.6
5 to 9 units	8.0	3.7	3.0	6.0
10 to 19	2.0	0.6	0.7	3.9
20 to 49	3.6	0.9	0.7	5.3
50 or more	0.1	2.6	1.6	10.0
Mobile home	4.8	8.2	12.4	5.8
Boat, RV, van, etc.	0.0	0.2	0.8	0.7
Source: U.S. Census, 2000 Summary File 3.				

Overall, the Town of Thompson, Sullivan County, and the study area all contain relatively young housing stocks compared to New York State, with higher percentages of growth in recent years (see Table 7). According to the 2006-2010 ACS, approximately 36.2 percent of the study area's housing units were built after 1980, compared to 18.7 percent in New York State.

Table 7
Year Housing Units Built

Year Structure Build	Town of Thompson	Sullivan County	Study Area	New York State
Built 2000 and later	11.1%	7.3%	9.4%	5.2%
Built 1990 to 1999	5.6%	8.9%	11.2%	6.0%
Built 1980 to 1989	20.2%	18.3%	15.6%	7.5%
Built 1960 to 1979	30.7%	25.3%	24.0%	22.6%
Built 1940 to 1959	19.7%	19.4%	16.3%	24.7%
Built 1939 or earlier	12.8%	20.8%	23.5%	34.0%
Source: U.S. Census, 2006-2010 American Community Survey.				

Based on the 2006-2010 ACS, the median housing value in the Town of Thompson and Sullivan County were approximately $171,300 and $186,900, respectively (in 2010 dollars), well below the median housing values for the study area as a whole and New York State (see Table 8). The relatively high median housing value for the study area is due to the high median value for Orange County, in which a majority (67.5 percent) of the study area's owner-occupied housing is located. Sullivan County contains approximately 15.3 percent of the owner-occupied housing in the study area. Over the 2006-2010 time period, 40.8 percent of the owner-occupied housing units in the Town of Thompson and 35.3 percent of the owner-occupied housing units in Sullivan County were valued at less than $150,000; approximately 15.3 percent of the housing units in the study area and 29.7 percent of housing units in New York State were valued at less than $150,000.

Table 8
Value of Owner-Occupied Housing Units (2006 -2010)

Value	Town of Thompson	Sullivan County	Study Area	New York State
Less than $40,000	10.5%	7.6%	3.3%	3.8%
$40,000 to $79,999	5.4%	6.2%	2.6%	8.6%
$80,000 to $99,999	5.1%	6.0%	2.4%	6.3%
$100,000 to $149,999	19.8%	15.5%	7.0%	11.0%
$150,000 to $199,999	20.6%	19.3%	11.7%	8.6%
$200,000 to $399,999	29.7%	34.6%	51.7%	23.4%
$400,000 to $999,999	7.6%	8.6%	19.8%	33.4%
$1,000,000 or more	1.3%	2.2%	1.5%	5.0%
Median Housing Value (in 2010 dollars)	$171,300	$186,900	$280,176*	$303,900

Notes: *Median housing value for the study area is an estimate based on the weighted average by township based on the number of owner-occupied housing in each township.
Source: U.S. Census, 2006-2010 American Community Survey.

As shown in Table 9, according to the 2006-2010 ACS, the median home value in the Town of Thompson is approximately $177,999 (in 2011 dollars), representing a 46 percent increase since 2000. Sullivan County and New York State experienced larger increases (59 and 58 percent, respectively), while the Study Area's median housing value grew by 65 percent, to approximately $291,133 over the 2006-2010 time period.

Table 9
Median Value of Owner-Occupied Housing Units in 2000 and over the 2006-2010 time period

	Town of Thompson		Sullivan County		Study Area		New York State	
	2000	2005-2009	2000	2005-2009	2000	2005-2009	2000	2005-2009
Median Housing Value	$122,320	$177,999 (+46%)	$122,455	$194,209 (+59%)	$176,523	$291,133 (+65%)	$199,938	$315,785 (+58%)

Notes: *All values are reported in 2011 dollars, based on U.S. Department of Labor, Bureau of Labor Statistics Consumer Price Index for all urban consumers in the Northeast.
Sources: U.S. Census, 2000 and 2006-2010 American Community Survey

Interviews with local real estate professionals were conducted to obtain information about residential sales and rentals in Sullivan County and the study area more generally. All individuals interviewed perceived a dramatically changed housing market since 2000, when

demand for housing was relatively low. In 2004 there was perceived to be a heavy demand for first and second homes, as well as rental units. According to Jim Cavello of Rieber Realty in Monticello, rental units were at a minimum in Sullivan County, and there was a real shortage of available affordable housing. He attributed the sellers' market in Sullivan County to first and second home buyers from the New York metropolitan area, as well as the relatively high cost of housing in neighboring Orange County, where rental units can be as much as three times the price of an equivalent unit in Sullivan. Fueling this trend, Sullivan County has been promoted in several popular magazines as a new, undiscovered bucolic vacation area for urbanites (e.g., "Head for the Hills," New York Magazine, August 4, 2003).

Interviews conducted in October of 2007 identified continued heavy demand for first and second homes and dramatic increases in housing values. According to David Knudsen, an associate broker of the Catskills Buyer Agency, the dramatic increases in median household values as of 2007 were attributable to improvements to the quality of housing stock, namely the recent construction of lakefront homes[1]. Since 2001, according to Knudsen, both increased press coverage, and the development of Bethel Woods Center for the Arts have also heightened buyers' interest in the area. Additionally, developments such as Chapin Estates of Bethel, New York have also had an influence on market appreciation.

A followup interview was conducted with David Knudsen in July 2010 to identify changes in Sullivan County residential real estate market conditions since 2007. According to David Knudsen, the national recession has resulted in depressed market conditions in both the primary and second-home markets compared to 2007 market conditions. Primary home buyers that previously considered Sullivan County are now drawn to closer in suburbs, such as those in Orange County, because home prices have decreased in those areas and are more competitive with Sullivan County than in the past. In the second-home market, Sullivan County continues to attract second home buyers, but these buyers are often focused primarily on the lower end of the housing market, with little activity in the mid and upper end. With the national recession, buyers are generally reluctant to make large discretionary purchases, such as for a second home.

INCOME TRENDS

The 2005-2009 median household income for the study area is estimated to be $67,619, about $9,800 greater than the New York State median of $57,777. However, there is great variability within the counties that are part of the Study Area; the median household income in Sullivan County is estimated to be $49,984 compared to $72,242 in Orange County.

As shown in Table 10, estimates reveal a decrease (in real dollars) in median household income in the Town of Thompson, Sullivan County, and New York State from 1999 to the 2005-2009 time period. During this time period, the Town of Thompson experienced the most dramatic decline, with a 21.8 percent decrease. In 1999, the median household income in Thompson was $49,739, and below the county median. Over the 2005-2009 time period, the median household income in Thompson was $38,880, which was $11,104 lower than the county median, and well below the median of the Study Area and New York State.

[1] Knudsen, David. Personal interview conducted on October 8, 2007.

Table 10
Median Household Income (in 2011 dollars)

Area	1999	2005-2009	% Change
Town of Thompson	$49,739	$38,880	-21.8%
Sullivan County	$51,822	$49,984	-3.5%
Study Area*	$68,156	$67,619	-0.8%
New York State	$60,779	$57,777	-4.9%

Notes:
All values reported in 2011 dollars, based on U.S. Department of Labor, Bureau of Labor Statistics Consumer Price Index for all urban consumers in the Northeast.
* Median Household Income for the Study Area was estimated based on a weighted average of the number of households in each county/township.
Sources: Data from U.S. Census, 2000 Summary File 3 and 2006-2010 American Community Survey

As illustrated in Table 11, the Town of Thompson has a relatively large percentage of households with incomes less than $25,000, and relatively few households with incomes greater than $100,000 as compared to the Study Area and New York State.

As with median household income, the per capita incomes in both the Town of Thompson and Sullivan County are lower than that for New York State as a whole (see Table 12). However, unlike median household incomes, the per capita income for the Study Area was also lower than that of New York State. Per capita incomes in the Town of Thompson and Sullivan County decreased in real dollar terms between 1999 and the 2005-2009 time period. Per capita income in the Town of Thompson ($20,199) is nearly $12,000 lower than per capita income for New York State as a whole ($32,158). The Study Area and New York State were estimated to have experienced minor decreases in per capita income between 1999 and the 2005-2009 time period (1.2 and 1.8 percent decreases, respectively).

Table 11
Percentage Distribution of Household Income (2005-2009)

Area	Household Income								
	Less than $15,000	$15,000 to $24,999	$25,000 to $34,999	$35,000 to $49,999	$50,000 to $74,999	$75,000 to $99,999	$100,000 to $149,999	$150,000 to $199,999	$200,000 or more
Town of Thompson	21.6%	14.3%	11.4%	17.6%	15.1%	8.0%	6.8%	2.5%	2.7%
Sullivan County	14.1%	12.3%	10.7%	15.1%	19.6%	12.5%	9.9%	3.2%	2.6%
Study Area*	9.5%	8.9%	9.0%	12.1%	18.7%	14.3%	17.2%	6.1%	4.2%
New York State	13.4%	10.0%	9.4%	12.6%	17.4%	12.2%	13.5%	5.5%	6.1%

Notes: Incomes in 2010 dollars. Distribution for the Study Area is based on a weighted average based on the number of households in each county and township.
Source: U.S. Census, 2006-2010 American Community Survey.

Table 12
Per Capita Income (in 2011 dollars)

Area	1999	2005-2009	% Change
Town of Thompson	$26,147	$20,199	-22.7%
Sullivan County	$26,461	$24,338	-8.0%
Study Area	$29,142	$28,800	-1.2%
New York State	$32,760	$32,158	-1.8%

Notes: Values have been adjusted to 2011 dollars using the U.S. Department of Labor Consumer Price Index for all urban consumers in the Northeast.
Sources: Data from U.S. Census, 2000 Summary File 3, 2006-2010 American Community Survey.

In terms of persons living in poverty, the Town of Thompson had a higher percentage of people with incomes below the poverty level compared to New York State, as reported in the 2006-2010 ACS (see Table 13). The study area had a lower overall percentage of persons below the poverty level compared to New York State, due to the lower poverty rate in Orange County (11.1 percent).

Table 13
Percentage of Population with 2005-2009 Income Below the Poverty Level

Area	% of Population in Poverty
Town of Thompson	25.4%
Sullivan County	16.6%
Study Area	12.0%
New York State	14.2%

Source: U.S. Census, 2006-2010 American Community Survey.

WORKFORCE CAPACITY AND OPPORTUNITIES

LABOR FORCE AND EMPLOYMENT

Over the long term, labor force and employment growth have been variable in the six counties in which the study area is located. As shown in Table 14, the counties experienced overall gains in the labor supply between 1980 and 1990, with five of the six counties well above the 10.4 percent growth rate for the state. However, between 1990 and 2000, overall labor force trends shifted compared to the previous decade, with Sullivan County, Ulster County, and Orange County all experiencing far less dramatic increases in their total labor force. Pike County continued to experience substantial growth in its labor force at a rate comparable to the previous decade, due to its large population growth during that period. From 1990 to 2000, Pike County's total labor force grew by 54 percent, the highest percentage among all counties evaluated. The Pennsylvania Department of Labor and Industry indicated that many of the county's new residents were from New York and New Jersey, and moved to the county primarily because of better housing opportunities, lower taxes, and better schools.[1]

Between 2000 and 2010, the labor force in several of the counties in which the study area is located continued to grow, with Pike County maintaining the highest growth rate (31.1 percent). However, the labor force in Delaware County decreased by 0.9 percent from 22,200 in 2000 to 22,000 in 2010. During this 10-year time frame, Ulster County's labor force remained fairly constant, growing by only 0.3 percent from 88,600 in 2000 to 88,900 in 2010.

[1] Phone interview with Scott Meckley, a regional analyst for Northeastern Pennsylvania, Pennsylvania department of Labor and Industry, November 2003.

Table 14
Average Labor Force Trends 1980-2010

Area	1980	1990	1980-1990 % Change	2000	1990-2000 % Change	2010	2000-2010 % Change
Sullivan County	28,300	33,300	17.7%	33,200	-0.3%	35,000	5.4%
Ulster County	67,300	84,400	25.4%	88,600	5.0%	88,900	0.3%
Orange County	108,400	152,600	40.8%	162,300	6.4%	179,100	10.4%
Delaware County	21,100	21,700	2.8%	22,200	2.3%	22,000	-0.9%
New York State	7,980,100	8,808,900	10.4%	9,167,000	4.1%	9,630,900	5.1%
Wayne County, PA	16,700	19,500	16.8%	22,600	15.9%	25,600	13.3%
Pike County, PA	8,400	13,800	64.3%	21,200	53.6%	27,800	31.1%

Notes:
Labor force trends are annual averages, not seasonally adjusted.
Sources: New York State Department of Labor, Pennsylvania Department of Labor, Local Area Unemployment Statistics (LAUS), accessed October 2003, August 2007, July 2010, and December 2010.

Similar to labor force trends, employment growth in five of the six study area counties was also well above the State rate during the 1980s, with less substantial increases for those same counties between 1990 and 2000 (see Table 15). These counties were hard hit by the recession of the late 1980s and early 1990s, resulting in declines in workforce and residential employment growth. Between 2000 and 2010, the employment growth rates were higher in Wayne and Pike Counties as compared to the study area counties in New York State. Of the New York counties evaluated, Orange County had the highest growth in employment at 4.8 percent. However, Ulster County and Delaware County experienced declines in employment during this time period (by -4.6 percent and -5.6 percent, respectively). Similar to previous years, Pike County experienced the most dramatic increase in employment between 2000 and 2010 (22.5 percent).

Table 15
Employment Trends, 1980-2010

Area	1980	1990	1980-1990 % Change	2000	1990-2000 % Change	2010	2000-2010 % Change
Sullivan County	26,000	31,600	21.5%	31,700	0.3%	31,800	0.3%
Ulster County	61,900	81,300	31.3%	85,500	5.2%	81,600	-4.6%
Orange County	100,200	146,000	45.7%	156,800	7.4%	164,300	4.8%
Delaware County	19,800	20,600	4.0%	21,300	3.4%	20,100	-5.6%
New York State	7,378,700	8,339,800	13.0%	8,751,400	4.9%	8,806,800	0.6%
Wayne County, PA	15,200	18,200	19.7%	21,600	18.7%	23,700	9.7%
Pike County, PA	7,700	13,100	70.1%	20,400	55.7%	25,000	22.5%

Notes:
Employment trends are annual averages, not seasonally adjusted.
Sources: New York State Department of Labor, Pennsylvania Department of Labor, Local Area Unemployment Statistics (LAUS), accessed October 2003, October 2007, July 2010, and December 2011.

EMPLOYMENT SECTORS AND WAGES

As shown in Table 16, in 2000 the services and retail trade sectors comprised well over half the jobs in the study area; services accounted for 46.4 percent of all jobs, while retail trade

accounted for 12.2 percent of all employment. Compared to the state, the study area had a higher proportion of the working population in the agriculture, construction, retail trade, and public administration sectors.

Table 16
Job Distribution by SIC Sectors, 2000 (percent)

SIC Sector	Town of Thompson	Sullivan County	Orange County	Ulster County	Delaware County	Study Area	New York State	Wayne County	Pike County
Agriculture, Forestry, Fishing and Hunting, and Mining	0.7%	1.7%	1.0%	1.4%	6.2%	1.7%	0.6%	3.4%	0.7%
Construction	6.0	8.0	6.8	6.8	7.7	7.2	5.2	9.3	8.9
Manufacturing	3.6	5.8	10.2	10.0	14.5	9.2	10.0	10.6	10.0
Wholesale Trade	2.8	3.3	4.1	2.8	2.4	3.1	3.4	3.0	3.2
Retail Trade	15.7	11.6	13.4	12.3	10.3	12.2	10.5	14.9	14.0
Transportation and Utilities	4.4	5.4	6.0	4.9	3.7	5.1	5.5	5.4	6.5
Information	2.2	2.4	3.5	2.8	2.6	2.6	4.1	2.6	2.9
Finance, Insurance, and Real Estate	7.3	6.1	6.4	5.1	3.6	5.3	8.8	4.3	7.4
Services	49.1	47.5	41.2	47.3	43.1	46.4	46.8	41.6	41.6
Public Administration	8.1	8.3	7.6	6.6	5.9	7.1	5.2	5.0	4.7

Note: Job distribution for all employed persons 16 years of age and older.
Source: U.S. Census, 2000 Summary File 3.

U.S. Census Bureau's 2006-2010 five-year estimates show similar concentrations of jobs in the services and retail trade industries (see Table 17). This data is categorized by NAICS sectors, which is divided into more detailed categories compared to year 2000 SIC data shown in Table 16. In all counties evaluated, the educational services, health care, and social assistance sector had the highest percentage of employees, ranging from 21.7 percent in Wayne County to 28.3 percent in Sullivan County. The retail trade sector also represented a significant portion of employment, between 11.2 percent in Sullivan County to 15.0 percent in Wayne County. The arts, entertainment, and recreation, accommodation, and food services sector was also strong in the counties evaluated, making up between 6.8 percent in Orange County and 10.3 percent of employment in Pike County and Sullivan County. The construction sector made up a significant portion of employment in the study area, particularly in Wayne County (10.4 percent) and Sullivan County (9.9 percent).

Within the services sector, in 2001, all counties in which the study area is located had a higher proportion of employees within the accommodation and food services sub-sectors compared to New York State (see Table 18). On the other hand, the professional and technical services sub-sectors employed a smaller proportion in each of the six counties compared to New York State.

Table 17
Job Distribution by NAICS Sectors, 2006-2010 (percent)

	Town of Thompson	Sullivan County	Ulster County	Orange County	Delaware County	Study Area	New York State	Wayne County, PA	Pike County, PA
Agriculture, forestry, fishing and hunting, and mining	0.9%	1.8%	1.1%	1.1%	5.7%	1.3%	0.6%	2.2%	1.1%
Construction	7.1%	9.9%	7.6%	7.2%	9.4%	8.0%	5.9%	10.4%	9.5%
Manufacturing	6.1%	4.8%	7.3%	7.9%	11.5%	7.3%	7.2%	8.0%	7.0%
Wholesale trade	2.8%	2.5%	2.6%	3.7%	1.8%	3.4%	2.8%	2.1%	2.2%
Retail trade	14.6%	11.2%	12.9%	12.8%	11.4%	12.7%	10.6%	15.0%	14.4%
Transportation and warehousing, and utilities	2.6%	4.9%	4.9%	5.6%	4.8%	5.7%	5.3%	5.1%	6.2%
Information	0.4%	2.0%	2.1%	2.5%	1.6%	2.3%	3.1%	1.9%	2.7%
Finance and insurance, and real estate and rental and leasing	6.2%	5.3%	5.7%	6.2%	3.4%	5.9%	8.6%	4.7%	7.6%
Professional, scientific, and management, and administrative and waste management services	4.6%	6.5%	8.3%	8.6%	5.2%	8.1%	10.8%	8.9%	7.5%
Educational services, health care, and social assistance	33.1%	28.3%	27.6%	26.7%	27.2%	26.4%	26.6%	21.7%	21.8%
Arts, entertainment, and recreation, and accommodation, and food services	12.9%	10.3%	9.0%	6.8%	7.9%	7.7%	8.5%	9.3%	10.3%
Other services, except public administration	4.7%	5.3%	4.8%	3.7%	4.8%	4.1%	5.0%	5.2%	5.8%
Public administration	4.2%	7.1%	6.0%	7.2%	5.4%	7.1%	4.9%	5.3%	4.0%

Notes: Job distribution for all employed persons 16 years of age and older.
Sources: US Census, 2006-2010 American Community Survey

Table 18
Job Distribution Within NAICS Services Sector, 2001 (percent)

NAICS Sector	Sullivan County	Ulster County	Orange County	Delaware County	New York State	Wayne County, PA	Pike County, PA
Professional and Technical Services	5.4%	7.6%	10.4%	9.2%	15.9%	4.9%	5.3%
Management of Companies and Enterprises	1.8%	1.7%	3.3%	1.3%	3.4%	0.0%	0.0%
Administrative and Waste Services	4.3%	9.4%	9.3%	3.2%	13.0%	8.3%	2.7%
Educational Services	1.7%	3.3%	5.4%	0.0%	7.2%	2.0%	0.0%
Health Care and Social Assistance	40.5%	38.3%	37.4%	44.8%	32.4%	33.9%	17.3%
Arts, Entertainment, and Recreation	3.2%	2.7%	3.5%	2.9%	3.6%	2.2%	6.6%
Accommodation and Food Services	28.6%	27.8%	19.1%	25.5%	15.2%	38.4%	51.2%
Other Services	14.4%	9.1%	11.6%	13.1%	9.3%	10.3%	16.9%

Notes: Percentages presented are for the universe of service sector employment only.
Sources: New York State Department of Labor, Quarterly Census of Employment and Wages (QCEW), accessed December 2011; PA Dept. of Labor and Industry, QCEW data, accessed December 2011.

As of 2010, New York State Department of Labor data reflect a slightly lower concentration of service sector employment in the accommodation and food services industry within five of the six counties in which the study area is located as compared to 2001 (see Table 19). However,

within all six counties, there was a greater percentage of sector employment within the health and social assistance industries.

Table 19
Job Distribution Within NAICS Services Sector, 2010 (percent)

NAICS Sector	Sullivan County	Ulster County	Orange County	Delaware County	New York State	Wayne County, PA	Pike County, PA
Professional and Technical Services	4.5%	6.6%	10.5%	4.4%	14.8%	4.4%	4.7%
Management of Companies and Enterprises	2.6%	1.0%	1.3%	0.6%	3.5%	1.1%	2.5%
Administrative and Waste Services	4.7%	9.5%	10.6%	1.7%	11.1%	8.3%	2.4%
Educational Services	1.5%	3.8%	4.4%	0.0%	8.0%	2.5%	0.0%
Health Care and Social Assistance	49.7%	40.0%	41.5%	51.4%	34.4%	42.3%	22.7%
Arts, Entertainment, and Recreation	4.9%	3.5%	3.3%	2.9%	3.7%	2.5%	8.0%
Accommodation and Food Services	19.5%	26.8%	17.9%	25.7%	15.9%	28.2%	40.0%
Other Services	12.7%	8.8%	10.6%	13.2%	8.6%	10.7%	19.7%

Notes: Percentages presented are for the universe of service sector employment only.
Sources: New York State Department of Labor, Quarterly Census of Employment and Wages (QCEW), accessed December 2011; PA Dept. of Labor and Industry, QCEW data, accessed December 2011.

The average annual wages for all industries in the six counties in which the study area is located are lower than the average annual wage for New York State ($62,620) as a whole (see Table 20). Among the study area counties, Orange County has the highest average annual wage for all industries ($41,834) and the highest annual wages within about half of the sectors. The average annual retail sector wage in the six counties ranged from $23,212 in Pike County to $27,278 in Delaware County, compared to $30,739 in New York State. Within the arts, entertainment and recreation sector wages ranged from $15,853 in Delaware County to $26,894 in Sullivan County, compared to $46,940 in New York State. Within the accommodation and food services industry—which posted the lowest annual wages for all sectors within New York State—wages ranged from $13,058 in Delaware County to $19,622 in Wayne County, as compared to $23,059 in New York State.

Between 2001 and 2010, retail wages in Sullivan County increased by 6.6 percent, and by between 2.0 percent and 4.8 percent in Delaware, Ulster, and Wayne Counties. Orange County, Pike County, and New York State as a whole saw a decrease of 5.7 percent, 4.8 percent, and 3.8 percent, respectively (see Table 21). Among the arts, entertainment and recreation services sectors, wages increased by over 48 percent in Sullivan County, while decreasing in all other areas. Wages in the accommodation and food services sector increased in Delaware County by 8.4 percent—approximately four times higher than the 1.9 percent increase in the state. In addition, wages in this sector increased by between 2.8 percent and 3.7 percent in Orange County, Sullivan County, and Wayne County.

Table 20
2010 Annual Wages by NAICS Sectors (in 2011 dollars)

NAICS Sector	Sullivan County	Orange County	Ulster County	Delaware County	New York State	Wayne County, PA	Pike County, PA
Total, all industries	$36,988	$41,834	$38,496	$37,342	$62,620	$33,642	$31,067
Agriculture, Forestry, Fishing & Hunting	$29,591	$23,698	$28,188	$26,858	$30,167	$43,831	NA
Mining	$46,055	$67,695	$47,148	$41,601	$60,857	$34,311	NA
Utilities	NA	$109,322	NA	NA	$101,765	$47,715	$50,605
Construction	$39,416	$47,938	$42,933	$44,210	$62,625	$45,894	$37,655
Manufacturing	$30,988	$47,413	$45,762	$59,082	$61,764	$39,316	$38,213
Wholesale Trade	$41,941	$53,263	$48,780	$52,230	$74,504	$39,734	$43,230
Retail Trade	$27,262	$26,454	$27,048	$27,278	$30,739	$24,853	$23,212
Transportation and Warehousing	$26,906	$41,611	$31,567	$37,943	$45,604	$25,055	$19,712
Information	$46,759	$55,888	$42,913	$38,637	$94,451	$48,135	$43,538
Finance and Insurance	$64,700	$52,460	$51,223	$42,758	$201,811	$47,446	$37,856
Real Estate and Rental and Leasing	$23,109	$34,905	$34,776	$25,448	$56,742	$26,675	$23,892
Professional and Technical Services	$35,527	$59,045	$42,748	$29,583	$94,440	$33,780	$42,785
Management of Companies and Enterprises	$45,287	$67,089	$53,044	$27,110	$145,626	$59,482	$79,489
Administrative and Waste Services	$30,777	$30,787	$35,927	$30,920	$44,192	$20,018	$31,570
Educational Services	$19,151	$31,699	$26,583	NA	$49,149	$15,604	NA
Health Care and Social Assistance	$37,761	$41,172	$36,751	$30,967	$46,399	$32,864	$31,132
Arts, Entertainment, and Recreation	$26,894	$20,241	$22,115	$15,853	$46,940	$20,188	$21,866
Accommodation and Food Services	$18,594	$16,743	$17,302	$13,058	$23,059	$19,622	$18,403
Other Services	$20,602	$27,190	$25,054	$21,620	$36,054	$21,069	$21,262
Total, All Government	$50,542	$57,484	$53,791	$33,113	$56,318	NA	NA
Unclassified	$24,805	$26,538	$76,061	$31,105	$48,021	NA	NA

Notes:
Wages adjusted to 2011 dollars using the U.S. Department of Labor Consumer Price Index for all urban consumers in the Northeast.
Sources: New York State Department of Labor, Quarterly Census of Employment and Wages (QCEW), accessed December 2011; Pennsylvania Department of Labor and Industry, accessed December 2011.

Table 21
Percent Change in Real Annual Wages by NAICS Sectors (2001-2010)

NAICS Sector	Sullivan County	Orange County	Ulster County	Delaware County	New York State	Wayne County, PA	Pike County, PA
Total, all industries	3.6%	5.1%	8.1%	5.6%	1.7%	3.7%	-2.7%
Agriculture, Forestry, Fishing & Hunting	1.1%	-5.5%	21.2%	1.9%	4.4%	122.6%	NA
Mining	-15.9%	11.0%	-12.1%	1.4%	5.1%	-5.2%	NA
Utilities	NA	39.9%	NA	NA	9.8%	-20.3%	NA
Construction	13.0%	-3.9%	1.4%	2.3%	2.0%	11.0%	-2.6%
Manufacturing	-6.5%	0.0%	2.7%	25.3%	5.3%	11.6%	-28.0%
Wholesale Trade	5.2%	5.2%	5.6%	29.9%	1.9%	12.3%	9.9%
Retail Trade	6.6%	-5.7%	4.7%	2.0%	-3.8%	4.8%	-4.8%
Transportation and Warehousing	-6.7%	-5.7%	-3.6%	33.2%	-4.0%	2.9%	22.1%
Information	-13.4%	24.8%	62.4%	-5.3%	6.2%	14.1%	-34.3%
Finance and Insurance	4.2%	15.5%	6.4%	14.1%	11.9%	14.0%	-22.5%
Real Estate and Rental and Leasing	14.1%	4.1%	17.2%	-8.4%	3.7%	-10.1%	2.8%
Professional and Technical Services	9.5%	8.3%	10.5%	23.4%	4.2%	-37.0%	10.3%
Management of Companies and Enterprises	-3.2%	-28.0%	54.5%	-6.8%	4.0%	NA	NA
Administrative and Waste Services	14.3%	8.6%	11.1%	56.3%	10.6%	-16.5%	-6.8%
Educational Services	9.4%	66.3%	3.6%	NA	8.2%	36.0%	NA
Health Care and Social Assistance	7.1%	14.1%	6.8%	18.6%	5.4%	0.8%	1.8%
Arts, Entertainment, and Recreation	48.3%	-1.1%	-10.7%	-2.3%	-2.2%	-9.6%	-1.1%
Accommodation and Food Services	3.4%	2.8%	-3.2%	8.4%	1.9%	3.7%	-2.9%
Other Services	-3.6%	3.1%	1.5%	5.9%	8.9%	-3.4%	-5.3%
Total, All Government	0.3%	16.6%	15.0%	-15.9%	1.6%	NA	NA
Unclassified	21.5%	11.0%	169.6%	85.1%	15.4%	NA	NA

Notes:
Wages adjusted to 2011 dollars using the U.S. Department of Labor Consumer Price Index for all urban consumers in the Northeast.
Sources: New York State Department of Labor, Quarterly Census of Employment and Wages (QCEW), accessed December 2011; Pennsylvania Department of Labor and Industry, accessed December 2011.

LABOR FORCE DEMOGRAPHICS

Education

Levels of education and income are often used to evaluate the ability of a workforce to meet the challenges of high-value-added occupations. Existing high levels of education and income provide workers with the foundations needed to maintain their competitive edge in the workforce. A review of the demographic composition of the study area reveals a labor force that generally falls slightly below state averages in secondary educational attainment.

While all counties in which the study area is located are about on par with New York State in the proportion of the population over 25 years old with a high school diploma, the Town of Thompson falls below the state percentage (see Table 22). Furthermore, the proportions of the population in the Town of Thompson, the study area, and all counties in which the study area is located, have a lower share of its population with college degree compared with New York State. Approximately 40 percent of all New Yorkers over 25 have a college degree. In Sullivan

County, the proportion is only 30.3 percent, while in the study area 34.6 percent of the population over 25 years old have college degrees. Ulster County's high concentration of college graduates is likely due to the presence of a State University of New York (SUNY) four-year institution in New Paltz.

Table 22
Education Level for Persons Over 25

Area	Percent High School Graduates	Percent College Graduates
Town of Thompson	82.6%	27.3%
Sullivan County	83.9%	30.3%
Orange County	86.7%	36.8%
Ulster County	87.5%	39.0%
Delaware County	87.0%	29.7%
Study Area	86.2%	34.6%
New York State	84.4%	40.3%
Wayne County	86.7%	25.2%
Pike County	91.5%	31.1%

Notes: This table is based on data on the highest degree or the highest level of schooling completed for residents above 25 years in age. Percent College Graduates counts respondents who answered that the highest degree achieved was Associates degree, Bachelor's degree, Master's degree, Professional school degree, and Doctorate degree.
Source: U.S. Census, 2006-2010 American Community Survey.

As discussed previously and shown in Table 10, the median household income for the Study Area was $67,619 and was higher than the state median ($57,777). However, the estimated 2005-2009 per capita income for the Study Area was $28,800, which was lower than the per capita income for New York State as a whole ($32,158). The potential problems associated with relatively low levels of education and incomes are exacerbated by labor force dynamics typically associated with rural areas: a geographically dispersed economy; global competitive pressures on manufacturing; and the out-migration of young people to locales where more and diverse employment opportunities are available. Further, this area is subject to the economic downturn resulting from the decline of the hotel and resort industry that formerly characterized the so-called "Borscht Belt" region.

Commuting Patterns

Like many rural areas, the study area is generally one of wide dispersion of activities limiting the informal connections and cross-sectoral contacts that promote economic innovation and growth in more metropolitan areas. As shown in Table 23, a comparison of travel times to work for the shows that there is a substantial labor market that is localized in nature. Compared to New York State, the study area has a larger percentage of workers that travel less than 30 minutes to their place of work (57.5 percent for the study area versus 52.7 percent for the state).

Data from the 2000 Census indicates that the proportion of residents that work in the county in which they live is variable within the study area, ranging from 28.3 percent in Pike County to 71.0 percent in Delaware County (see Table 24). Approximately 63.9 percent of the population in the Study Area work in their county of residence. Within the Town of Thompson, a high portion of the residents work in Sullivan County (79.0 percent).

Table 23
Travel Time to Work, as a Percentage of All Workers

Travel Time	Town of Thompson	Sullivan County	Orange County	Ulster County	Delaware County	Study Area	New York State	Pike County	Wayne County
Less than 5 minutes	3.2%	3.7%	3.7%	4.3%	10.6%	3.9%	2.8%	3.9%	4.6%
5 to 14 minutes	43.8%	27.4%	24.9%	27.7%	33.5%	25.0%	19.8%	19.5%	30.0%
15 to 29 minutes	32.5%	35.2%	27.1%	32.8%	27.4%	28.6%	30.1%	22.8%	32.6%
30 to 44 minutes	12.3%	17.6%	15.7%	19.1%	16.6%	16.8%	21.1%	17.4%	16.1%
45 to 89 minutes	4.8%	10.0%	19.5%	11.6%	9.7%	17.6%	21.4%	20.3%	11.7%
90 or more minutes	3.5%	6.0%	9.1%	4.5%	2.2%	8.2%	4.8%	16.1%	5.0%

Notes: Travel time to work statistics are based on the universe of workers 16 years and older.
Source: U.S. Census, 2006-2010 American Community Survey.

Table 24
Location of Residents' Workplaces in 2000

Area	Percent in County of Residence	Percent Outside County	Percent Outside State
Town of Thompson	79.0	18.9	2.1
Sullivan County	67.4	29.2	3.4
Orange County	65.5	25.6	8.9
Ulster County	66.5	32.0	1.4
Delaware County	71.0	26.9	2.1
Study Area	63.9	27.5	8.6
New York State	64.6	32.7	2.7
Pike County	28.3	24.0	47.7
Wayne County	63.6	26.5	9.9

Source: U.S. Census, 2000 Summary File 3.

For workers in the study area counties that commute out of their county of residence, the commuting patterns shown in Table 25 suggest that this workforce is dispersed among several different labor markets. For residents of Sullivan County, the major destination counties for their place of work were Orange, Ulster, Wayne, and Delaware. Within the areas surrounding Sullivan County, in 2000 approximately 865 Orange County residents, 729 Ulster County residents, 649 Wayne County residents, and 448 Delaware County residents worked in Sullivan County.

Conversely, Table 26 shows the major counties of residence for Sullivan County employees. Of the counties within the study area, only Wayne and Delaware residents increased their employment numbers within Sullivan County between 1990 and 2000, reflecting the increased trend toward the residential settlement of these areas, as well as the conversion of seasonal homes to full-time residential units.

Table 25

Major Destination Counties for Out-Commuters in Six Study Area Counties

County	Total Out-Commuters	Major Destination Counties	Total Commuters
Sullivan	9,622 (33%)	Orange Co., NY	865
		Ulster Co., NY	729
		Wayne Co., PA	649
		Delaware Co., NY	448
Ulster	27,353 (33%)	Dutchess Co., NY	10,685
		Orange Co., NY	8,676
		New York Co., NY	1,565
		Westchester Co., NY	1,157
		Sullivan Co., NY	729
Orange	52,588 (34%)	Rockland Co., NY	9,746
		New York Co., NY	9,610
		Bergen Co., NJ	7,310
		Westchester Co., NY	5,569
Delaware	5,870 (29%)	Ostego Co., NY	2,240
		Broome Co., NY	589
		Sullivan Co., NY	448
		Chenango Co., NY	445
Wayne	7,250 (36%)	Lackawana, PA	3,132
		Monroe Co., PA	715
		Sullivan Co., NY	649
		Pike Co., PA	447
Pike	13,838 (72%)	Orange Co., NY	1,976
		Wayne Co., PA	1,928
		Monroe Co., PA	1,841
		Sussex Co., NJ	1,662

Source: U.S. Census, 2000 Summary File 3.

Table 26

Sullivan County Employees' Major Counties of Residence

County of Residence	1990	2000	% Change
Sullivan	22,115	19,922	-9.9%
Orange	1,214	865	-28.7
Ulster	867	729	-15.9
Wayne	603	649	7.6
Delaware	443	448	1.1
Rockland	28	182	550.0
Pike	108	162	50.0

Notes: This table lists only the top seven counties of residence for Sullivan County employees.

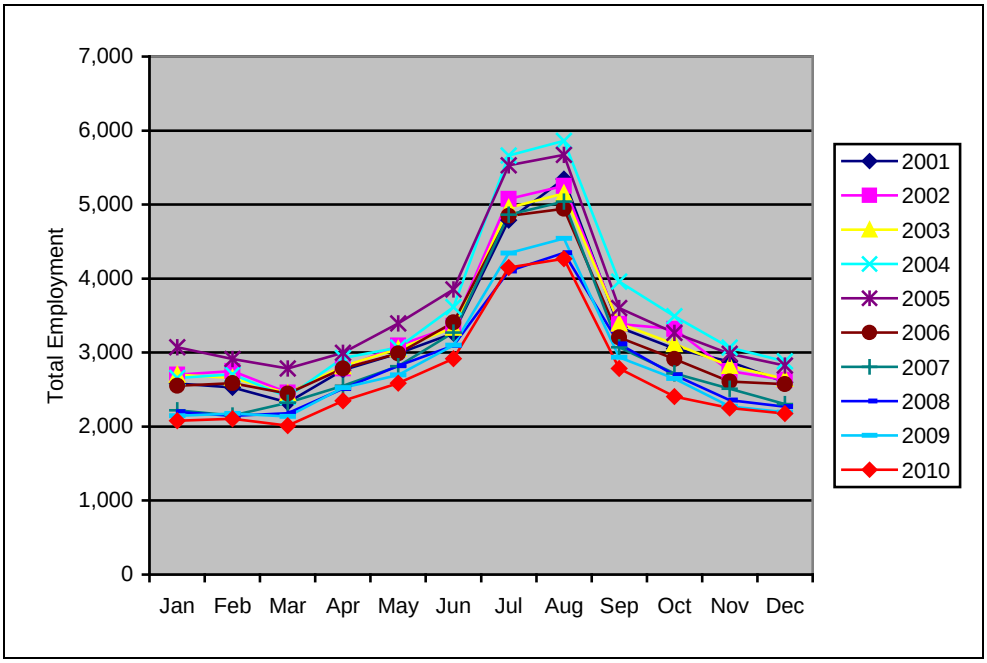
Source: U.S. Census, 2000 Summary File 3.

Part-Time and Seasonal Employment

According to the Sullivan County Workforce Development Center, Sullivan County has the highest share of part-time workers of all counties in New York State. In 2000, approximately 47 percent of all private sector employees worked part-time. The largest numbers of part-time workers were employed in service businesses with fewer than 100 employees.

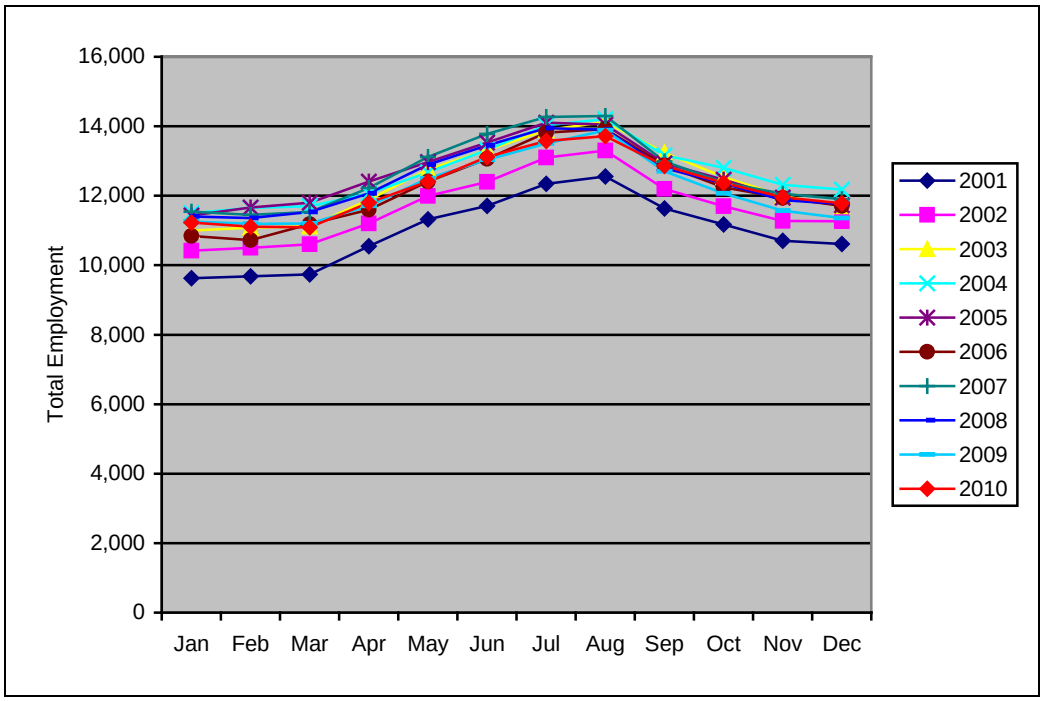
A large percentage of the workforce in Sullivan County and the study area more generally is seasonally employed, due in large part to the Catskill Mountain region's emphasis on tourism and outdoor recreational activity. The Sullivan County Workforce Development Center reported that in 2000, approximately 25 percent of all private sector employment was classified as temporary, which includes seasonal employment, short-term positions, and individuals substituting for workers on leave. As shown in Figure 2 below, which presents monthly employment in Sullivan County's leisure and hospitality industry between 2001 and 2010, employment in Sullivan County's leisure and hospitality industry increases dramatically during the summer months, and falls just as dramatically as winter approaches. A similar, but less pronounced trend exists for the Newburgh Primary Metropolitan Statistical Area, which includes Orange and Pike Counties (see Figure 3).

Figure 2
Sullivan County Monthly Employment in Leisure and Hospitality Industry



Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages [Accessed July 2010 and December 2011].

Figure 3
Newburgh NY-PA PMSA Monthly Employment in Leisure and Hospitality Industry



Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages [Accessed July 2010 and December 2011].

As shown in Table 27, approximately 54.1 percent and 50.7 percent of workers in the Town of Thompson and Sullivan County, respectively, worked less than 50 weeks per year, compared to 45.4 percent in New York State. As shown in Table 28, 39.9 percent of workers in the study area work less than 35 hours per week, compared to 40.4 percent in New York State.

Table 27
Weeks worked in the past 12 months, All Workers 16 to 64 Years of Age

Weeks Worked	Town of Thompson	Sullivan County	Orange County	Ulster County	Delaware County	Study Area	New York State	Pike County	Wayne County
50 to 52 weeks	45.9%	49.3%	57.0%	52.8%	50.5%	55.0%	54.6%	50.6%	51.1%
48 to 49 weeks	1.1%	1.5%	2.3%	2.5%	2.0%	2.2%	2.2%	1.4%	1.8%
40 to 47 weeks	5.0%	6.3%	6.0%	6.6%	7.0%	6.0%	5.1%	5.2%	5.1%
27 to 39 weeks	4.7%	4.6%	4.1%	5.5%	6.0%	4.3%	4.4%	4.6%	5.0%
14 to 26 weeks	4.7%	4.5%	4.1%	5.6%	4.8%	4.2%	4.3%	5.3%	4.2%
1 to 13 weeks	3.3%	5.5%	4.9%	6.1%	6.8%	5.1%	5.4%	6.8%	7.0%
Did not work in the past 12 months	35.3%	28.3%	21.5%	21.0%	22.8%	23.3%	24.1%	26.0%	25.8%

Notes: Travel time to work statistics are based on the universe of workers 16 to 64 years.
Source: U.S. Census, 2006-2010 American Community Survey.

Table 28
Hours Usually Worked per Week in the past 12 months,
All Workers 16 to 64 Years of Age

Hours Usually Worked/Week	Town of Thompson	Sullivan County	Orange County	Ulster County	Delaware County	Study Area	New York State	Pike County	Wayne County
35 or more hours per week	51.5%	57.3%	61.6%	58.0%	59.4%	60.2%	59.6%	56.0%	57.1%
15 to 34 hours per week	10.8%	11.9%	13.5%	16.8%	13.5%	13.3%	13.0%	14.4%	13.4%
1 to 14 hours per week	2.3%	2.5%	3.4%	4.3%	4.2%	3.3%	3.3%	3.6%	3.7%
Did not work in the past 12 months	35.3%	28.3%	21.5%	21.0%	22.8%	23.3%	24.1%	26.0%	25.8%

Notes: Travel time to work statistics are based on the universe of workers 16 to 64 years.
Source: U.S. Census, 2006-2010 American Community Survey.

UNEMPLOYMENT

As shown in Table 29, in counties in which the study area is located the unemployment rate in 2010 ranged from 7.7 percent in Wayne County to 10.0 percent in Pike County. In general, between 2000 and 2004, the unemployment rates increased in all areas and then experienced decreases between 2004 and 2007. Between 2007 and 2010, there was a significant increase in the unemployment rate, reflecting the economic downturn. In all areas, the unemployment rate in 2010 was the highest unemployment rate in the period from 2000 to 2010. In 2010, a monthly average of 50,200 people were unemployed in the six counties. Delaware County had 20,100 unemployed persons, representing 40 percent of the unemployed population in the six-county area. Orange County and Ulster County followed with 14,800 unemployed persons and 7,300 unemployed persons, respectively.

Table 29
Unemployment Rate 2000-2010 (percent)

Area	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sullivan County	4.3	4.6	5.0	5.3	5.3	4.9	5.2	5.3	6.4	8.7	9.2
Ulster County	3.6	3.8	4.4	4.6	4.9	4.4	4.2	4.4	5.4	7.7	8.2
Orange County	3.4	3.7	4.4	4.7	4.7	4.3	4.3	4.3	5.3	7.8	8.3
Delaware County	4.2	4.2	4.8	4.9	4.5	4.5	4.4	4.4	5.9	8.5	8.7
New York State	4.5	4.9	6.2	6.4	5.8	5.0	4.6	4.5	5.3	8.4	8.6
Wayne County, PA	4.6	4.9	5.1	5.1	5.2	4.8	4.1	4.1	5.2	7.5	7.7
Pike County, PA	3.8	4.8	5.6	5.8	6.0	5.9	5.6	5.4	5.6	9.1	10.0

Notes: Unemployment rate is annual average, not seasonally adjusted.
Sources: New York State Department of Labor, July 2010 and December 2011. PA Dept of Labor and Industry, July 2010 and December 2011.

Characteristics of the Unemployed

Data on unemployment insurance beneficiaries provided by the New York State and Pennsylvania Departments of Labor show that in all six counties, slightly less than one half of

the unemployment insurance beneficiaries were between the ages of 25 and 44 (see Table 30). Orange and Delaware Counties had a disproportionately high percentage of unemployed between the ages of 20 and 24 compared to the other study area counties. Sullivan and Ulster Counties had the highest percentage of unemployed over the age of 45.

Table 30
Unemployment Insurance Beneficiaries: Age Breakdown

Age	Percentage of Recipients					
	Sullivan	Orange	Ulster	Delaware	Pike	Wayne
Under 20	1.2	1.2	1.0	1.2	1.2	0.8
20 to 24	9.5	10.9	9.1	11.2	5.8	6.3
25 to 44	43.1	44.8	41.5	44.4	52.0	47.4
45 to 64	40.8	38.8	42.6	38.7	36.7	40.7
65 and Over	5.4	4.2	5.7	4.5	4.2	4.8

Sources: Sullivan, Orange, Ulster, and Delaware County data from New York State Department of Labor, Division or Research and Statistics, September 2010 (based on data from January - June 2010); Pike and Wayne County data from Pennsylvania Department of Labor and Industry, Center for Workforce Information and Analysis, October 2003 (annual average for all months in 2002; more current unemployment insurance beneficiary data is not publicly available.)

The New York State Department of Labor tracks previous work experience of unemployment insurance beneficiaries, which is shown in Table 31. According to the New York State Department of Labor, these "experienced unemployed" members of the labor force typically represent about one third of the total unemployed population. The industry sectors for which 2010 unemployment insurance beneficiaries had the most experience across the reported counties included construction, manufacturing, retail trade, and health care and social assistance. Sullivan and Ulster Counties also had a high percentage of unemployed with experience in the accommodations and food services sector.

Similar to the residential population as a whole, unemployment insurance beneficiaries in the counties generally have a total of 12 years of education. In Sullivan County, approximately 60 percent of the beneficiaries in the first two quarters of 2010 had 12 years of education or less, followed by Delaware County (59 percent), and Ulster County (54 percent).

Table 31
Unemployment Insurance Beneficiaries:
Previous Work Experience by Industry, 2010

Industry	Sullivan		Orange		Ulster		Delaware	
	Number	%	Number	%	Number	%	Number	%
Agriculture, forestry, etc.	8	0.2	52	0.3	46	0.5	25	1.2
Mining	58	1.5	99	0.6	112	1.3	44	2.1
Utilities or Mgmt of Companies	12	0.3	100	0.6	78	0.9	7	0.3
Construction	668	17.3	2,884	18.2	1,521	17.7	419	20.2
Manufacturing	243	6.3	1,500	9.5	935	10.9	450	21.7
Wholesale Trade	131	3.4	946	6.0	363	4.2	63	3.0
Retail Trade	453	11.7	1,932	12.2	910	10.6	178	8.6
Trans. and Warehousing	229	5.9	1,122	7.1	445	5.2	35	1.7
Information	65	1.7	371	2.3	165	1.9	16	0.8
Finance and Insurance	95	2.5	596	3.8	196	2.3	19	0.9
Real estate	118	3.1	312	2.0	147	1.7	16	0.8
Prof., Science, and Tech.	145	3.8	848	5.4	404	4.7	71	3.4
Admin., Support, etc.	228	5.9	1,313	8.3	835	9.7	102	4.9
Educational Services	99	2.6	429	2.7	224	2.6	66	3.2
Healthcare, Social Servs.	429	11.1	1,283	8.1	684	8.0	180	8.7
Arts, Ent., and Recreation	110	2.8	268	1.7	205	2.4	55	2.7
Accom. and food services	478	12.4	688	4.3	779	9.1	179	8.6
Other services	98	2.5	397	2.5	225	2.6	53	2.6
Public Administration	151	3.9	498	3.1	223	2.6	75	3.6
Unclassified/Unknown	43	1.1	204	1.3	84	1.0	18	0.9
Total	**3,861**	**100**	**15,842**	**100**	**8,581**	**100**	**2,071**	**100**

Source: New York State Department of Labor, Division or Research and Statistics, September 2010 (based on a year-to-date monthly average from January – June 2010).

ECONOMIC TRENDS AND CONDITIONS

This section provides a portrait of the region's business and industrial base, particularly as it relates to the tourism, retail trade, and service sectors. These are the sectors most likely to be affected by the proposed Casino Project. This section focuses primarily on Sullivan County, the county in which the Casino Project would be located and the county for which a majority of the direct spending from Casino Project visitors would take place.

In 2010, there were 2,135 firms that employed 25,088 workers in Sullivan County. Approximately one-quarter of this employment was in the government sector (6,209 employees). The health care and social assistance sector followed with 5,404 employees, representing 21.5 percent of total employment in the county. The average annual wages ranged from $18,594 in the accommodation and food services sector to $64,700 in the finance and insurance sector (see Table 32).

Overall, the total number of jobs in the County increased by approximately 2.4 percent (or about 582 jobs) between 2000 and 2010 (see Table 33). Several industries experienced substantial growth over this period, including: health care and social assistance (1,398 new jobs or 34.9 percent growth), manufacturing (344 new jobs or 39.3 percent growth), and arts, entertainment, and recreation (233 new jobs or 76.6 percent growth). The overall growth in Sullivan County

was restrained by a 24.1 percent decline in employment in the accommodation and food services sector (or 671 lost jobs) and a 43.3 percent decline in employment in the finance and insurance sector (or 593 lost jobs). The loss of employment in the finance and insurance industry was due in part to the collapse of Frontier Insurance, which was formerly one of Sullivan County's largest employers.

Table 32

Industry Employment and Wages, Sullivan County 2010 (in 2011 dollars)

Industry	Reporting Units	Annual Average Employment		Annual Average Wages
		Number	%	
Agriculture, Forestry, Fishing and Hunting	14	284	1.13%	$29,591
Mining	10	95	0.38%	$46,055
Construction	267	784	3.13%	$39,416
Manufacturing	51	1,220	4.86%	$30,988
Wholesale Trade	65	509	2.03%	$41,941
Retail Trade	295	3,119	12.43%	$27,262
Transportation and Warehousing	40	514	2.05%	$26,906
Information	33	172	0.69%	$46,759
Finance and Insurance	89	775	3.09%	$64,700
Real Estate and Rental and Leasing	115	385	1.53%	$23,109
Professional and Technical Services	158	486	1.94%	$35,527
Management of Companies and Enterprises	8	284	1.13%	$45,287
Administrative and Waste Services	87	506	2.02%	$30,777
Educational Services	18	163	0.65%	$19,151
Health Care and Social Assistance	203	5,404	21.54%	$37,761
Arts, Entertainment, and Recreation	56	537	2.14%	$26,894
Accommodation and Food Services	262	2,119	8.45%	$18,594
Other Services	177	1,378	5.49%	$20,602
Government	138	6,209	24.75%	$50,542
Unclassified	42	43	0.17%	$24,805
Total	2,135	25,088	100.00%	$36,988

Notes: Wages adjusted to 2011 dollars using the U.S. Department of Labor Consumer Price Index for all urban consumers in the Northeast.

State law prohibits New York State Department of Labor from disclosing information that would reveal the identity of individual employers. In order to ensure the anonymity of individual employers, employment and wage data are not released for any industry level in any location that a) consists of fewer than three reporting units; or b) contains a single unit that accounts for 80 percent or more of the industry's employment. Therefore, reporting units and annual average employment may not add to totals.

Source: New York State Department of Labor, December 2011

Table 33
Industrial Trends in Sullivan County

Industry by NAICS Codes	No. of Jobs				No. of Firms
	2000	2010	# Change	% Change	2010
Agriculture, Forestry, Fishing & Hunting	249	284	35	14.1%	14
Mining	77	95	18	23.4%	10
Construction	858	784	-74	-8.6%	267
Manufacturing	876	1,220	344	39.3%	51
Wholesale Trade	704	509	-195	-27.7%	65
Retail Trade	3,234	3,119	-115	-3.6%	295
Transportation and Warehousing	518	514	-4	-0.8%	40
Information	269	172	-97	-36.1%	33
Finance and Insurance	1,368	775	-593	-43.3%	89
Real Estate and Rental and Leasing	376	385	9	2.4%	115
Professional and Technical Services	572	486	-86	-15.0%	158
Management of Companies and Enterprises	163	284	121	74.2%	8
Administrative and Waste Services	418	506	88	21.1%	87
Educational Services	132	163	31	23.5%	18
Health Care and Social Assistance	4,006	5,404	1,398	34.9%	203
Arts, Entertainment, and Recreation	304	537	233	76.6%	56
Accommodation and Food Services	2,790	2,119	-671	-24.1%	262
Other Services	1,422	1,378	-44	-3.1%	177
Government	6,033	6,209	176	2.9%	138
Unclassified	137	43	-94	-68.6%	42
Total	24,506	25,088	582	2.4%	2,135

Note: State law prohibits New York State Department of Labor from disclosing information that would reveal the identity of individual employers. In order to ensure the anonymity of individual employers, employment and wage data are not released for any industry level in any location that a) consists of fewer than three reporting units; or b) contains a single unit that accounts for 80 percent or more of the industry's employment. Therefore, number of jobs and number of firms may not add to totals.

Source: New York State Department of Labor; July 2010 and December 2011

TOURISM INDUSTRY

The economy of Sullivan County has been based traditionally on the tourism industry. Given its natural assets, Sullivan County has been considered an ideal escape from city life. During the mid 1900's, the Catskill Mountain region was considered a major vacation destination for residents of the Greater New York Metropolitan area. Numerous camps, bungalow colonies, and resorts were established over the last century, including such famous hotels as Grossinger's, Brown's, the Concord Hotel, Kutsher's and many others. During the 1940's and 1950's, the Catskills (including Sullivan County), boasted over 1,000 facilities that included resorts, hotels, inns, motels, and bungalow communities. With the rise in air travel and competition from more modern resorts, Sullivan County's tourism sector began to decline in the 1960s. As shown in Table 34, below, this downward trend persisted through 2000. Between 1995 and 2000, employment in the tourism industry (consisting of food services, lodging, amusement and recreation) decreased by 1,456 jobs, or almost 32 percent. The hotel and lodging sector experienced the largest decline, losing almost 40 percent of its employment base during the 5-year period. Sullivan County currently has fewer than 100 operating resort/hotel-type locations.

Table 34
Tourism Trends in Sullivan County 1995 and 2000

Tourism Industries (by SIC Category)	Number of Jobs			
	1995	2000	# Change	% Change
Eating and Drinking Places	1,049	885	-164	-15.6%
Hotels and Other Lodging Places	3,116	1,890	-1,226	-39.3%
Amusement and Recreation Services	436	370	-66	-15.1%
Total	4,601	3,145	-1,456	-31.6%

Source: New York State Department of Labor, September 2001.

Since 2000, Sullivan County appears to be showing signs of reversing the downward trend of previous decades. Between 2000 and 2010, the number of employees in the arts, entertainment, and recreation sector increased by 76.6 percent, from 304 employees in 2000 to 537 employees in 2009 (see Table 35). This was likely due in part to the opening of Monticello's Casino and Raceway and the opening of the Bethel Woods Center for the Arts. There was also an 18.4 percent increase in the number of employees at food services and drinking places, from 896 employees in 2000 to 1,061 employees in 2010.

Table 35
Recent Tourism Trends in Sullivan County 2000 and 2010

Tourism Industries (by NAICS Category)	Number of Jobs			
	2000	2010	# Change	% Change
Food Services and Drinking Places	896	1,061	165	18.4
Accommodation	1,894	1,058	-836	-44.1
Arts, Entertainment, and Recreation	304	537	233	76.6
Total	**3,094**	**2,656**	**-438**	**-14.2**

Notes: The total number of jobs presented in Tables 33 and 34 differ slightly due to the New York State Departments of Labor's conversion from SIC to NAICS codes for categorizing employment within industries.

Source: New York State Department of Labor, July 2010 and December 2011. Quarterly Census of Employment and Wages (QCEW).

Despite a lack of overall employment growth within the tourism-based industries, those services continue to provide a high percentage of jobs in Sullivan County. As shown in Table 35, in 2010, there were 2,656 jobs in the tourism sectors, employing approximately 10.6 percent of all workers in Sullivan County.

AGRICULTURE SECTOR

Agriculture is another important foundation of the Sullivan County economy. As of 1997, farming in Sullivan County generated sales of approximately $23.36 million, of which 91 percent involved livestock, namely poultry and dairy operations.[1] This figure grew to a total of $42.11 million in the year 2007, according to the 2007 Agricultural Census. As shown in Table 33, agriculture, forestry, fishing and hunting accounted for 284 jobs in 2010.

[1] U.S. Department of Agriculture. New York Agricultural Statistics Service. *1997 Census of Agriculture: County Profile.*

ECONOMIC TRENDS IN THE STUDY AREA

As discussed above, the study area is the area most likely to be affected by the proposed Casino Project and is defined as a one-hour driving distance of the Casino Project site. This study area includes the immediate vicinity of the proposed Casino Project, as well as the larger area from which a vast majority of new employees would be drawn, and in which a vast majority of new employees would establish residence. Below is a discussion on the retail sector and the service sector in the economic study area.

RETAIL SECTOR

Table 36 displays estimated current business data for retail sector categories in the study area. As shown in Table 36, there are an estimated 4,956 retail establishments that employ 41,080 workers. The retail sector accounts for approximately 22.7 percent of all study area businesses and 21.5 percent of all employment.[1] The largest retail sector in terms of employment is eating and drinking establishments, with an estimated 11,415 workers, or approximately 27.8 percent of all retail employees.

Table 36
Current Business Data for Retail SIC Categories in the Study Area, 2010

SIC Sector	Establishments	Employees
Retail Trade Summary	4,956	41,080
Home Improvement	360	3,256
General Merchandise Stores	143	4,237
Food Stores	524	6,359
Auto Dealers, Gas Stations, Auto Aftermarket	544	3,784
Apparel & Accessory Stores	309	2,135
Furniture & Home Furnishings	428	1,818
Eating & Drinking Places	1,346	11,415
Miscellaneous Retail	1,302	8,076

Source: ESRI Business Analyst, 2010.

SERVICE SECTOR

Table 37 displays estimated current business data for service sector categories in the study area. As shown in Table 37, there are an estimated 7,933 service sector establishments employing approximately 83,105 workers in the study area. The service sector accounts for approximately 36.4 percent of all study area businesses, and 43.5 percent of all employment. Apart from "Other Services," the largest service sector employment categories are education institutions and health services, which employ an estimated 19,845 workers and 19,405 workers, respectively. Hotels and other lodging places follow with 8,523 employees, representing 10.3 percent of employees in the service sector.

[1] According to ESRI Business Analyst, in 2010 there are an estimated 21,814 businesses with 190,932 employees in the study area.

Table 37
Current Business Data for Service SIC Categories in the Study Area, 2010

SIC Sector	Establishments	Employees
Services Summary	7,933	83,105
Hotels & Lodging	387	8,523
Automotive Services	755	2,700
Motion Pictures & Amusements	602	3,692
Health Services	945	19,405
Legal Services	312	1,543
Education Institutions & Libraries	454	19,845
Other Services	4,478	27,397
Sources: ESRI Business Analyst, 2010.		

D. THE FUTURE WITHOUT THE PROPOSED CASINO PROJECT

This section addresses the anticipated socioeconomic conditions of the affected areas in the future absent the proposed Casino Project. The purpose of considering the future without the project is to identify any major trends or factors that would alter the existing conditions at the point in time when the Casino Project would come into being. The conditions at this future point then become the baseline against which potential effects of the Casino Project would be evaluated.

Following a steady trend established decades earlier, population in Sullivan County as a whole would be expected to grow in the future without the Casino Project. Based on projections provided by the New York Metropolitan Transportation Council (NYMTC), total population in Sullivan County will be approximately 82,900 in 2015, an approximately 6.9 percent increase from the 2010 population (77,547 residents, see Table 1). The 2020 Sullivan County population is projected to be approximately 86,800 residents, an 11.9 percent increase from the 2010 population. Employment in Sullivan County is also expected to increase in the future. Based on projections provided by NYMTC, employment is expected to increase by approximately 7.5 percent from 2010 to 2015, and by 14.1 percent from 2010 to 2020.

It is important to note that these population and employment projections do not specifically account for the numerous projects proposed for development within the area surrounding the Casino Project site. Aside from the Casino Project which is the subject of this analysis, some of the more prominent development plans include: the proposed Sackett Lake Resort Hotel in Thompson, which would include a 350-room hotel and conference center, golf course, and 30,000 square feet of retail space; Phase 1 of the Rock Hill Town Center in Thompson, which would include 540 residential units and 60,000 square feet of commercial space; Gan Eden Estates, a 905-unit residential development; and the Concord Resort Hotel and Casino, which would include a 500-room hotel, a 120,000-square foot casino, and retail uses (for a more detailed listing and description of proposed projects see Section H, “Cumulative Effects.”) Given that the development years for these projects is currently unknown, it is difficult to identify with any specificity the level of development that would be expected to occur in Sullivan County prior to the development of the proposed Casino Project.

There are also numerous proposed and speculative housing development projects planned for the Town of Thompson and for the broader six-county study area. Table 38 lists the estimated number of units (including apartments, mobile homes, townhouses, and single family units) that

are part of projects that have been approved, are being applied for, or are in the planning stages within the study area boundary.

Table 38
Proposed Residential Development in Casino Project Study Area

Area	Units
Sullivan County	4,382
Orange County	580
Ulster County	287
Wayne County	155
Pike County	230
Study Area Total	5,634

Notes: Housing units include apartments, mobile homes, townhouses, and single-family units. These residential development projects are in various stages of planning and approval, and the number of units and timing of development will be dictated by market forces.

Sources: Sullivan County data was collected and utilized in the traffic analysis presented in this FEIS, and the Orange County, Ulster County, Wayne County, and Pike County data are US Census 2009 New Privately-Owned Residential Building Permit Estimates.

E. SOCIOECONOMIC EFFECTS OF THE PROPOSED CASINO PROJECT

This section examines the effects of the Casino Project on the labor pool, housing market, and local and regional economies. It is anticipated that the project would be constructed in two phases, and the analysis examines each phase in turn. The analysis, then, examines the projected effects of the construction and operations of Phase I, and then cumulatively adds in the projected effects of the Phase II hotel construction and operation activities.

Based on an estimation of the projected effects such as jobs directly and indirectly created and economic activity generated (e.g., spending and tax revenues), the effects of the Casino Project on the study area's employment base, housing market, and local and regional economies are estimated. In addition, the effects of patrons visiting the Casino Project are discussed in terms of visitor spending and other visitor-related considerations.

As a federally recognized Indian tribe, the Stockbridge-Munsee Community is exempt from sales taxes on purchases made by the Tribe. The Tribe has sovereign authority to promulgate sales of goods (e.g., gasoline and cigarettes) and intends to do so consistent with a Tribal-State agreement with New York State that will also provide for the collection of certain taxes on sales to non-Indians and the remission of a certain percentage to the State. For purposes of this analysis, the Tribe is assumed to be exercising its tax-exempt status, and therefore the economic and fiscal analyses that follow do not reflect the payment of sales taxes on tribal purchases.

ECONOMIC BENEFITS OF CONSTRUCTION AND CAPITAL INVESTMENTS

INTRODUCTION

Construction of the proposed Casino Project would result in activity in the Sullivan County and New York State economies. Effects during construction would stem from the direct construction employment and spending from the Casino Project, as well as the secondary, or indirect, economic activity generated throughout the economy by the direct spending (often referred to as the "ripple" effect). This analysis examines the effect of the Casino Project in terms of employment, wages and salaries, and tax dollars generated during the construction period.

PHASE I DEVELOPMENT

Phase I of the proposed development would contain approximately 350,000 gross square feet, comprising a 90,000 square foot casino with 2,000 slot machines and 60 table games, 40,000 square foot multi-purpose venue, a racebook, a 250-seat entertainment venue and bar, food court outlets, a coffee shop, three specialty restaurants, a buffet and various snack and beverage outlets, back-of-house and employee areas. Parking for 3,500 cars will also be provided.

CONSTRUCTION

Overview of Methodology

Construction of the Casino Project would result in considerable activity in the regional and New York State economies. Effects during construction would stem from the direct construction employment and spending from the Casino Project, as well as the secondary, or indirect, economic activity generated throughout the economy by the direct spending (often referred to as the "ripple" effect). This analysis examines the effect of the Casino Project in terms of employment, wages and salaries, and tax dollars generated during the projected two-year construction period.

For this analysis, the method used for modeling the direct and indirect (or generated) effects of construction activity on the state's economy was the Regional Input-Output Modeling System, known as RIMS II, developed by the U.S. Department of Commerce, Bureau of Economic Analysis. The model contains data on 406 economic sectors, showing how each sector affects every other sector as a result of a change in the quantity of its product or service. For this FEIS analysis, an updated model was obtained from the Department of Commerce in July 2010. The model has been further adjusted to reflect changes in the consumer price index. Using the model and the specific characteristics of the development, the total economic effect of the Casino Project has been estimated.

Construction Cost

Development of the proposed Casino Project would be undertaken by a private investment of funds into the area. Based on preliminary estimates, the total investment for the development of Phase I of the Casino Project is estimated to exceed $500 million. Excluding the cost of gaming equipment, financing, pre-development and pre-opening expenses, and similar amounts not directly related to the physical improvement of the site, the construction cost for Phase I is estimated at approximately $400 million. This amount reflects the cost of physical improvements to the property, including site preparation and hard costs (actual construction), and design, legal, and related costs.

Economic Benefits

Table 39 presents an overview of the projected employment and economic activity in the region as a result of the construction activities of Phase I of the proposed Casino Project. Jobs during the construction period would include many different specialty contractors, some employed for only a brief period and others, such as those employed by the general contractors, employed for a much longer period. For this reason, jobs during the construction period are measured in "person-years." A person-year is the equivalent of one person working full time for one year. The table shows separately the direct (construction), indirect (secondary and induced), and total direct and indirect economic effects from constructing Phase I of the proposed Casino Project. The table shows the estimated cumulative effects of the Casino Project's investments over the approximately 18-month construction period, and models the projected benefits on an annual basis.

Employment. Based on the direct expenditures on construction activities, the direct employment for constructing the capital program anticipated for Phase I would directly create 2,654 person-years of employment over the 18 month construction period. As shown on Table 39, on average during the period the Casino Project would directly support approximately 1,769 person-years of employment on an annual basis.

In addition to direct employment resulting from construction activities, the total employment resulting from construction expenditures would include jobs in businesses providing goods and services to the contractors and workers, thereby resulting in the creation of indirect, or generated employment. As shown in Table 39, based on the RIMS II model's economic multipliers for the state's industrial sectors, construction of Phase I of the proposed Casino Project would indirectly generate another 1,986 person-years of employment, or an average of 1,324 jobs annually. In total, construction of Phase I of the proposed Casino Project would create an estimated 4,639 person-years of employment, or an average of 3,093 jobs annually.

Wages and Salaries. The direct and indirectly-generated employment attributed to the construction activities would result in the creation of wages and salaries earned by the workers. Direct wages and salaries generated by the capital improvement expenditures are estimated at $150.96 million. On an annual basis, construction activities are expected to directly support wages and salaries valued at an average of $100.64 million per year. In total, including indirect and generated wages and salaries, construction of Phase I of the proposed Casino Project is projected to have wages and salaries equaling approximately $252.57 million, or an average of $168.38 million on an annual basis.

Economic Activity. Based on the RIMS II model for New York State, the total economic activity, including indirect expenditures, is estimated at $767.04 million. This figure is a measure of the estimated output, or demand, for state industries, and expresses the amount of total effect of the proposed Casino Project on the economy.

Although construction of the proposed Casino Project is projected to have a substantial economic effect on the regional economy in southern New York State, it would be expected to have a positive, but more marginal, effect on the local economy. This is because the existing construction sector of the local economy is relatively small, with (according to the New York State Department of Labor) Sullivan County's entire construction sector averaging 780 workers in 2010.

Table 39
Employment and Economic Benefits from Construction of Phase I of the Stockbridge-Munsee Casino

	Total in New York State during 18-month Construction Period	Average Amount Per Year
Employment (Person-Years)[1]		
Direct (Construction)	2,654	1,769
Indirect (Secondary and Induced)	1,986	1,324
Total	4,639	3,093
Wages and Salaries (Millions of dollars)		
Direct (Construction)	$150.96	$100.64
Indirect (Secondary and Induced)	$101.61	$67.74
Total	$252.57	$168.38
Total Economic Output or Demand [2] (Millions of dollars)		
Direct (Construction)	$400.00	$266.67
Indirect (Secondary and Induced)	$367.04	$244.69
Total	$767.04	$511.36
	Fiscal	
Tax Revenues. Exclusive of Real Estate[3] (Dollars)		
Direct (Construction)	$8,649,600	$5,766,400
Indirect (Secondary and Induced)	$11,028,000	$7,352,000
Total	$19,677,600	$13,118,400

Notes:

1 A person-year is the equivalent of one person working full-time for a year.

2 The economic output or total effect on the local economy derived from the direct construction spending.

3 The figures assume no sales tax will be paid on construction materials; figures Include personal income taxes, corporate and business taxes for contractors and subcontractors, sales tax on indirectly generated activity, and numerous other taxes on construction and secondary expenditures.

Source: The characteristics and construction cost of the Phase I development; the Regional Input-Output Modeling System (RIMS II), U.S. Department of Commerce, Bureau of Economic Analysis; and the tax rates by applicable jurisdiction.

In addition, much of the existing construction in the local economy is oriented toward construction of single-family homes, as well as contracting for municipal and county governments on road, water and sewer, and similar projects. The components of Phase I of the proposed Casino Project that would employ specialty trades that currently occur in the County, but are underemployed locally, would be expected to have the largest local effect.

As a result, the economic effects from construction of the Phase I of the proposed Casino Project would, to a large degree, not be localized but would occur throughout the regional economy in southern New York State. With the exception of those trade specialties mentioned above, construction workers would be expected to travel fairly long distances to work at the Casino Project site, as there are not enough specialized construction workers locally within Sullivan County. Vendors and businesses serving the construction activities would also be expected to be drawn from a wide area. Construction activity is not permanent but is temporary; therefore

construction workers would not be expected to relocate closer to the site. Rather, the construction workers and suppliers who would serve the construction activities would commute to the site from a broad area. Therefore, construction of the proposed Casino Project would not be expected to induce changes to the local or regional population settlement pattern, nor stimulate the development of new homes. In addition, the construction would not be expected to induce permanent growth in the construction industry at the state, county, or local levels.

Fiscal Benefits. Although the Tribe itself is tax exempt, construction activity would generate several forms of tax revenue, including personal income taxes, corporate and business taxes from contractors and subcontractors, and sales taxes on materials purchased directly by contractors and subcontractors. Most of the tax revenues (income taxes and indirectly generated sales taxes) would accrue to New York State; however Sullivan County would be expected to receive a modest amount of increased tax revenues from construction activity. As shown on Table 39, in total, construction of Phase I of the proposed Casino Project is estimated to create approximately $19.68 million in tax revenue, or an average of $13.12 million on an annual basis.

ECONOMIC BENEFITS OF PHASE I OPERATIONS

Overview and Methodology

Based on projections provided by the Applicant, the potential economic effects of annual operation have been analyzed. The economic benefits from the operation of Phase I of the proposed Casino Project would include direct employment, the creation of wages and salaries, and gross revenues from operations. To the extent the economic activity is taxable, annual tax revenues also would be generated from the operation of the Phase I of the proposed Casino Project. Direct economic benefits would generate additional indirect economic benefits as funds are re-circulated through the local and regional economy. Phase I of the proposed Casino Project would also be expected to result in other, more qualitative, effects, as a result of its presence in Sullivan County as an attractive destination for tourists and visitors.

Indirect economic effects are derived from two types of secondary economic activities. The first type, referred to as “induced” or “generated” activities, includes increases in employment and incomes created by successive rounds of spending. For example, the take-home income earned by the proposed Casino Project’s employees would be spent on food, housing, and other goods and services. Some of this spending translates into income for local businesses, business owners, and their employees. Part of these second round incomes are, in turn, spent locally and thus become income to another set of individuals. As successive rounds of spending occur, additional income is created. Since it is projected that a relatively high proportion of the Casino Project’s employees would be dispersed throughout a large commuting zone, and a high proportion of the Casino Project’s expenses would be incurred regionally, this induced effect can be expected to be spread over an extensive region encompassing Sullivan and Orange Counties in New York, as well as portions of Ulster and Delaware Counties in New York, and portions of Wayne and Pike Counties in Pennsylvania (see Figure 1).[1]

For the economic evaluation of the operation of Phase I, the model used to analyze this type of indirect economic activity was the RIMS II model of Sullivan County, as the Casino Project is centrally located within Sullivan County, and this county is expected to receive the majority of the economic benefits of the Casino Project’s operations. The model was developed for Sullivan

[1] Thomas A. Garrett, Federal Reserve Bank of St. Louis, “Casino Gambling in America and Its Economic Impacts,” August, 2003.

County by the U.S. Department of Commerce, Bureau Economic Activity, using the latest available data in July 2010. A similar RIMS II model for the state's economy was also developed by the Department of Commerce in July 2010 to assess the project's effect on the broader regional economy. These models have been further updated using changes in the Consumer Price Index (CPI) through November 2011. Using the models and the projected direct permanent jobs, earnings and other direct spending at the proposed Casino Project, the total annual, recurring economic effects of Phase I operations were projected.

The principal RIMS sectors utilized for this analysis of Phase I were Sectors 713A00 and Aggregate Sector 58, which include casino and similar amusement and recreational services. For Phase II, an additional sector was Sector 7211A0, hotels and motels, which explicitly includes casino hotels.

The other type of secondary activities included are those that originate entirely off site but are attributable to the operations of the proposed Casino Project. These activities include goods and services provided to project-generated visitors by local service and retail establishments. For example, visitors to the casino that spend money at off-site businesses (e.g., gas stations, restaurants, lodging establishments, etc.) are considered to be creating an indirect economic impact because money generated from these expenditures is dispersed into the local and regional economy. This other type of secondary activity is analyzed in the section dealing with visitor and patron spending.

Economic Benefits

Employment. Based on personnel estimates at similar facilities and a preliminary review of the proposed Casino Project, approximately 3,000 persons are projected to work at Phase I of the Stockbridge-Munsee Casino. Table 40 summarizes the estimated permanent employment from the operation of Phase I of he proposed Casino Project.

Table 40
Estimated Phase I Permanent Employment
(Full-Time Equivalent Jobs)

Business Unit	Managers	Staff	Total
Casino	292	970	1,262
Food & Beverage/Retail & Other	87	635	722
Security	20	180	200
Parking & Transportation	26	125	151
Engineering & Facilities Maintenance	10	165	175
Information Technology	5	35	40
General & Administration	100	350	450
TOTAL	**540**	**2,460**	**3,000**

The employment opportunities created by the casino would be diverse, catering to a wide range of skill sets already substantially existing within the study area's employment base. New jobs created would include opportunities in the fields of casino operations, such as machine technicians, cashiers, dealers, and table game supervisors; marketing, such as public relations, market research, and advertising; casino services, such as security, food and beverage preparation and service, retail purchasing, and maintenance and facilities specialists; human resources, such as employee relations, compensation, and staffing and training specialists; and

finance and administration, such as accounts payable, audit, payroll, income control specialists, information technology, and legal.[1]

The Casino Project expects to implement a recruitment program well ahead of the opening of the facilities. Rigorous initial training programs are necessary for all full-time employees. It is anticipated that the Casino Project will establish training programs in order to develop basic technical skills as well as a commitment to the highest levels of services in the industry. The Casino Project is expected to utilize trainers to install such programs as well as to develop individuals within the operation of the Casino Project to fulfill trainer roles on an ongoing basis. Retraining programs are also expected to be established for those individuals that wish to change careers.

Illustrative economic benefits from the annual operation of Phase I of the Casino Project are presented in Table 41. The table shows separately the direct (on-site), indirect (secondary and induced), and total direct and indirect effects from the annual operation of Phase I of the proposed Casino Project. The annual benefits are for a year after achieving "normal visitation," i.e., a period several years after opening when the newness of the facility is no longer a factor in annual patronage. As indicated in the table, in addition to the above direct employment, the expenditures associated with the annual operation of the casino are projected by the RIMS II model to create an additional 548 full-time equivalent jobs off site throughout Sullivan County, bringing the total direct and indirect jobs to 3,548 full-time equivalent jobs. While the RIMS II analysis discussed above is calibrated for Sullivan County, the actual effects would not be concentrated in the county, per se, but would more likely be more regionally dispersed within the overall study area (Figure 1). In the broader scale, or within the overall New York State economy, the RIMS II model's economic multipliers for the state's industrial sectors estimate that the Phase I of the Casino Project would create an additional 1,068 indirect and generated jobs, bringing the total direct and indirect jobs to 4,068 full-time equivalent jobs dispersed widely in New York State.

Wages and Salaries. The direct and indirectly-generated employment attributed to the annual operation of the casino would result in the creation of wages and salaries earned by the workers. Direct wages and salaries generated by the annual operation of Phase I of the proposed Casino Project are estimated at approximately $110.30 million (all figures in this section are in constant 2011 dollars). This amount, like the figures for the employment, does not include the amount for the performers at shows and special events, which would be additional. In total, including indirect and generated wages and salaries, the annual operation of Phase I of the proposed Casino Project is projected to have wages and salaries equaling approximately $148.06 million in Sullivan County and dispersed throughout the wider study area. In the broader New York State economy, the total direct and indirect wages and salaries from the annual operation of Phase I of the proposed Casino Project are projected to equal approximately $181.11 million.

Economic Activity. Phase I of proposed Casino Project is projected to have a direct effect on the local economy, measured as economic output or demand from the direct spending during operation, equal to approximately $311.47 million annually. This amount includes the direct wages and salaries and other spending associated with annual operation. Based on the RIMS II model for Sullivan County, the total economic activity, including indirect expenditures that would result from Phase 1 of the proposed Casino Project, is estimated at $448.83 million annually. In the broader New York State economy, the operation of Phase I of the proposed Casino Project is estimated to have a total effect of approximately $579.86 million annually.

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[1] Trading Cove Associates; Harrah's Entertainment, Inc.

Fiscal Benefits. In addition to the fiscal benefits that local governments are provided under the Local Government Agreement, the Casino Project will also generate certain tax revenues. Although the Tribe itself is tax exempt, the operation of the casino facility would generate tax revenues in the form of personal income taxes, corporate and business taxes from contractors and suppliers, and sales taxes on materials purchased directly by contractors and suppliers. In addition, the Tribe anticipates that it will enter into a Tribal-State agreement with New York State to provide for the collection and remission to the State of a portion of certain taxes on sales to non-Indians for items like tobacco and petroleum products. These revenues would be in addition to any other payments to the State required under the Tribal-State Compact with New York State.

Despite the tax-exempt nature of the Casino Project as analyzed, the development of Phase I would generate other tax revenues resulting in substantial public sector revenues. These tax revenues would be the result of personal income taxes paid by workers, corporate and business taxes paid by taxable entities involved in the construction activities, sales tax on indirectly generated activity, and numerous other taxes. Most of the tax revenues (income taxes and indirectly generated sales taxes) would accrue to New York State; however Sullivan County would be expected to receive a modest amount of increased annual tax revenues.

Table 41
Illustrative Economic Benefits from the Annual Operation of Phase I
(Upon Achieving Normal Visitation)

	Sullivan County	Total in New York State
Employment (Full-Time Equivalent Jobs) [1]		
Direct (On-Site)	3,000	3,000
Indirect (Secondary and Induced)	548	1,068
Total	3,548	4,068
Wages and Salaries (Millions of Constant 2011 dollars)		
Direct (On-Site)	$110.30	$110.30
Indirect (Secondary and Induced)	$37.76	$70.81
Total	$148.06	$181.11
Total Economic Output or Demand [2] (Millions of Constant 2011 dollars)		
Direct (On-Site)	$311.47	$311.47
Indirect (Secondary and Induced)	$137.36	$268.39
Total	$448.83	$579.86

Notes:
[1] Full-time equivalent jobs express part-time jobs, based on the number of hours worked in a year, in terms of their equivalent amount of full-time jobs.
[2] The economic output or total effect on the economy derived from the direct spending during operation.
Source: The projected operating characteristics of Phase I of the Proposed Casino Project; and the Regional Input-Output Modeling System (RIMS II), U.S. Department of Commerce, Bureau of Economic Analysis.

PHASE II DEVELOPMENT

Upon the full operation of the Phase I development, the Stockbridge-Munsee casino would initiate Phase II of the construction program. The second phase is assumed for the purpose of this analysis to begin in 2016, with Phase I and II to be fully operational in 2018.

The analysis that follows examines the Casino Project cumulatively, with Phase I and Phase II together, enabling an overview of the total economic effects on job creation, wages and salaries, and tax revenues.

CONSTRUCTION

Phase II would add to the casino complex a 750-key hotel and related amenities, and would expand gaming space to include 1,000 additional slot machines and 130 table games and related facilities . Like Phase I, the construction of the Phase II development would create employment, wages and salaries, and economic activity in the local and regional economies.

Construction Cost

Based on preliminary estimates, the total investment for the development of Phase II of the Casino Project is estimated to equal about $400 million. This amount reflects the cost of physical improvements to the property, including site preparation and hard costs (actual construction), and design, legal, and related costs. The total estimated construction cost of the combined Phases I and II is approximately $800 million.

Economic Benefits

Table 42 presents an overview of the projected employment and economic activity from the construction of the entire Phase I and Phase II of Casino Project. The table shows separately the direct (construction), indirect (secondary and induced), and total direct and indirect economic effects from constructing the entire Casino Project. The table shows the estimated cumulative effects of the Casino Project's investments over the development period. Assuming that the entire development period, including non-construction time between phases, will be six years in duration, the table also models the projected benefits on an annual basis.

Employment. Based on the direct expenditures on construction activities, the direct employment for constructing the Phase I and Phase II capital program would directly create 5,307 person-years of employment over the 6-year construction period.

In addition to this direct employment resulting from the construction activities, the total employment resulting from these construction expenditures would include jobs in business establishments providing goods and services to the contractors and workers, thereby resulting in the creation of indirect, or generated employment. As shown in Table 42, based on the RIMS II model's economic multipliers for the state's industrial sectors, construction of the entire Casino Project would indirectly generate another 3,971 person-years of employment. In total, construction of the entire Casino Project would create an estimated 9,279 person-years of employment.

Table 42
Employment and Economic Benefits from Construction of the Entire Phase I and Phase II

	Total in New York State during Entire Development Period[1]	Average Amount Per Year[1]
Employment (Person-Years)[2]		
Direct (Construction)	5,307	885
Indirect (Secondary and Induced)	3,971	662
Total	9,279	1,547
Wages and Salaries (Millions of dollars)		
Direct (Construction)	$301.91	$50.32
Indirect (Secondary and Induced)	$203.22	$33.87
Total	$505.13	$84.19
Total Economic Output or Demand [3] (Millions of dollars)		
Direct (Construction)	$800.00	$133.33
Indirect (Secondary and Induced)	$734.08	$122.35
Total	$1,534.08	$255.68
	Fiscal	
Tax Revenues. Exclusive of Real Estate[4] (Dollars)		
Direct (Construction)	$17,299,000	$2,883,200
Indirect (Secondary and Induced)	$22,056,100	$3,676,000
Total	$39,355,100	$6,559,200

Notes:

1 Assumes that the entire development period, including non-construction time between phases, will be six years in duration.

2 A person-year is the equivalent of one person working full-time for a year.

3 The economic output or total effect on the local economy derived from the direct construction spending.

4 The figures assume no sales tax will be paid on construction materials; figures Include personal income taxes, corporate and business taxes for contractors and subcontractors, sales tax on indirectly generated activity, and numerous other taxes on construction and secondary expenditures.

Source: The characteristics and construction cost of the completed Casino Project; the Regional Input-Output Modeling System (RIMS II), U.S. Department of Commerce, Bureau of Economic Analysis; and the tax rates by applicable jurisdiction.

Wages and Salaries. The direct and indirectly-generated employment attributed to the construction activities would result in the creation of wages and salaries earned by the workers. Direct wages and salaries generated by the entire Casino Project's capital improvement expenditures are estimated at $301.91 million. The construction activities are expected to directly support wages and salaries valued at an average of $50.32 million per year, assuming a six-year development period. In total, including indirect and generated wages and salaries, construction of the Casino Project is projected to have wages and salaries equaling approximately $505.13 million, or an average of $84.19 million per year.

Economic Activity. Based on the RIMS II model for New York State, the total economic activity from constructing the Casino Project, including indirect expenditures, is estimated at more than $1.5-billion dollars ($1,534.08 million). This figure is a measure of the estimated output, or demand, for state industries, and expresses the amount of total effect of the proposed Casino Project on the economy. Over the six-year period, the total effect is estimated to average $255.68 million annually.

Although construction of the Casino Project is projected to have a substantial economic effect on the regional economy in southern New York State, it would be expected to have a positive, but more marginal, effect on the local economy. As was the case with Phase I, those components of the Casino Project that would employ specialty trades that currently occur in the County, but are underemployed locally, would be expected to have the largest direct local effect. Local vendors and businesses that would serve the construction activities would also be indirectly positively affected. However, as was the case with the Phase I development, the economic effects from construction of the Casino Project would, to a large degree, not be localized but would occur throughout the regional economy in southern New York State.

Fiscal Benefits. Construction of Phase II would add to the tax revenues generated by the Casino Project. Although the Tribe itself is tax exempt, construction activity would generate several forms of tax revenue, including personal income taxes, corporate and business taxes from contractors and subcontractors, and sales taxes on materials purchased directly by contractors and subcontractors.

Most of the tax revenues would accrue to New York State; however Sullivan County would be expected to receive a modest amount of increased tax revenues from construction activity. As shown on Table 42, in total, construction of Phase I and Phase II of the proposed Casino Project is estimated to create approximately $39.36 million in tax revenue, or, assuming a 6-year period, an average of about $6.56 million annually.

ECONOMIC BENEFITS OF PHASE II OPERATIONS

Overview and Methodology

The Phase II development would be expected to add permanent employment, wages and salaries, and economic activity to the local and regional economies. Illustrative economic benefits from the annual operation of the completed Phase I and II of the Casino Project are presented in Table 43. The table shows separately the direct (on-site), indirect (secondary and induced), and total direct and indirect effects from the annual operation of the completed proposed Casino Project. As with the Phase I development, the annual benefits are for a year after achieving “normal visitation,” i.e., a period several years after opening when the newness of the facility is no longer a factor in annual patronage.

Table 43
Illustrative Economic Benefits from the Annual Operation of the Completed Phase I and II

	Sullivan County	Total in New York State
Employment (Full-Time Equivalent Jobs) [1]		
Direct (On-Site)	4,907	4,907
Indirect (Secondary and Induced)	936	1,820
Total	5,843	6,727
Wages and Salaries (Millions of constant 2011 dollars)		
Direct (On-Site)	$177.28	$177.28
Indirect (Secondary and Induced)	$60.94	$115.11
Total	$238.22	$292.39
Total Economic Output or Demand [2] (Millions of constant 2011 dollars)		
Direct (On-Site)	$514.96	$514.96
Indirect (Secondary and Induced)	$225.90	$443.62
Total	$740.86	$958.58

Notes:
[1] Full-time equivalent jobs express part-time jobs, based on the number of hours worked in a year, in terms of their equivalent amount of full-time jobs.
[2] The economic output or total effect on the economy derived from the direct spending during operation.
Source: The projected operating characteristics of the completed Proposed Casino Project; and the Regional Input-Output Modeling System (RIMS II), U.S. Department of Commerce, Bureau of Economic Analysis.

Employment. As indicated in the table, the proposed Phase II development would bring the direct employment from the Casino Project up to an estimated 4,907 full-time equivalent jobs. In addition to direct employment, the expenditures associated with the annual operation of the proposed Casino Project are projected by the RIMS II model to create an additional 936 full-time equivalent jobs off site throughout Sullivan County, bringing the total direct and indirect jobs to 5,843 full-time equivalent jobs in Sullivan County. In the broader New York State economy, the RIMS II model's economic multipliers for the state's industrial sectors estimate that the Casino Project would create an additional 1,820 indirect and generated jobs, bringing the total direct and indirect jobs to 6,727 full-time equivalent jobs in New York State.

Wages and Salaries. The direct and indirectly-generated employment attributed to the annual operation the completed Casino Project would result in the creation of wages and salaries earned by the workers. Direct wages and salaries generated by the annual operation of the completed Phase I and Phase II of the Casino Project are estimated at approximately $177.28 million (all figures in this section are in constant 2011 dollars). In total, including indirect and generated wages and salaries, the annual operation of the completed proposed project is projected to have wages and salaries equaling approximately $238.22 million in Sullivan County. In the broader New York State economy, the total direct and indirect wages and salaries from the annual operation of the completed proposed project are projected to equal approximately $292.39 million.

Economic Activity. The completed proposed project is projected to have a direct effect on the local economy, measured as economic output or demand from the direct spending during operation, equal to approximately $514.96 million annually. This amount includes the direct wages and salaries and other spending associated with annual operation. Based on the RIMS II model for Sullivan County, the total economic activity, including indirect expenditures that would result from the completed proposed project, is estimated at $740.86 million annually. In the broader New York State economy, the operation of the completed proposed project is estimated to have a total effect of approximately $958.58 million annually.

Fiscal Benefits. In addition to the fiscal benefits that local governments are provided under the Local Government Agreement, the Casino Project will also generate certain tax revenues. Although the Tribe itself is tax exempt, the operation of the casino facility would generate tax revenues in the form of personal income taxes, corporate and business taxes from contractors and suppliers, and sales taxes on materials purchased directly by contractors and suppliers. In addition, the Tribe anticipates that it will enter into a Tribal-State agreement with New York State to provide for the collection and remission to the State of a portion of certain taxes on sales to non-Indians for items like tobacco and petroleum products. These revenues would be in addition to any other payments to the State required under the Tribal-State Compact with New York State.

PROPERTY TAXES

EXISTING PROPERTY TAXES

Based on real property tax bills for fiscal year 2010 and school tax bills for fiscal year 2009, the Casino Project site generated approximately $25,086 in property tax revenues for the Town of Thompson and Sullivan County and $33,812 in taxes for Monticello School District, for a total of $58,898 (see Table 44). Of this total, 24.1 percent was directed to County and Court expenses, 6.9 percent was allocated to highways outside of the village, 5.7 percent was allocated from the town to highways, 2.2 percent to the Monticello Fire District, 1.1 percent to the Rock Hill Fire District, 0.9 percent to the Ethel B. Crawford Public Library, 0.2 percent to the Rock Hill Ambulance District, and 1.5 percent for the solid waste fee. The allocation of these taxes is shown in Table 44.

FUTURE PROPERTY TAX REVENUES/PAYMENTS IN LIEU

Upon designation as trust land by the Bureau of Indian Affairs, the parcels comprising the Casino Project site would become exempt from all real property taxation, and County, School District, Town of Thompson, or other local district real property taxes would cease to be levied on the parcels comprising the site. As a result, the approximately $58,898 in property tax revenues allocated among the taxing jurisdictions discussed above would no longer be available to these jurisdictions.

Although the Casino Project site would no longer generate these real property taxes, the Tribe has entered into a Local Government Agreement with the local governments. This Agreement is a binding agreement with Sullivan County that provides funding to locally impacted entities to mitigate impacts to the local community. Under the Agreement, the Tribe would make an annual payment to Sullivan County of $15 million. This amount would be allocated among the impacted local and county government entities to mitigate the effects of the proposed Casino Project.

Table 44

Stockbridge-Munsee Casino Parcel Taxing Districts, Taxable Value, Tax Rates, and Tax Payments (2010 County/Town Rates, 2009 School Rates)

Taxing District	Assessed Valuation	Tax Rate/$1,000	Estimated Total Tax Paid
County & Court Expense	$1,815,000	$7.81	$14,179
Town to Highway	$1,815,000	$1.85	$3,357
Highway outside village	$1,815,000	$2.24	$4,063
Gen Fund outside of village	$1,815,000	$0.000031	$0.06
Rock Hill Fire District	$521,800	$1.23	$639
Monticello Fire District	$770,800	$1.72	$1,323
Crawford Memorial Library	$1,815,000	$0.30	$542
Rock Hill Ambulance	$521,800	$0.22	$114
Solid Waste Fee			$870
Total County/Town Taxes			**$25,086**
Monticello School District Taxes	$1,815,000	$18.63	$33,812
TOTAL TAXES PAID			**$58,898**

Sources: Real Property Tax Bills for fiscal year 2010 (fiscal year 1/1/2010-12/31/2010) and Statement of School Taxes for Monticello Central School for fiscal year 2009 (fiscal year 7/1/2009-6/30/2010) provided by Trading Cove Associates, LLC.

In addition to the Local Government Agreement, the Tribe will also enter into a Tribal-State Compact with New York State. This Compact is expected to include provisions for payments to the State to mitigate costs incurred by State agencies resulting from the project. While this Compact is not yet in place, it is anticipated to include, for example, a provision to establish a State Police Casino Detail that focuses on law enforcement issues associated with the casino; funding for this Detail would be covered under the Compact and is discussed in more detail in this analysis under "Effects on Community Services."

ECONOMIC EFFECTS OF EMPLOYEES

As discussed earlier, the homes of workers filling Casino Project jobs and those whose jobs are indirectly created as a result of the Casino Project are expected to be dispersed widely throughout the study area depicted in Figure 1 and beyond. It is anticipated that approximately 84 percent of the Casino Project employees would be drawn from an extensive commuting area comprising all of Sullivan and Orange Counties, portions of Ulster and Delaware Counties in New York, and portions of Wayne and Pike Counties in Pennsylvania. These workers are expected to exhibit commuting characteristics not unlike those of the existing labor pool as described by the 2006-2010 ACS, as shown in Table 23. Approximately 70 percent of the workers would be expected to drive at least 15 minutes to work, and approximately 40 percent would commute at least one half-hour to the casino location. Thus, approximately 30 percent, or approximately 1,472 of the Casino Project employees would be expected to live within a 15 minute driving distance from the casino. Given the accessibility of Route 17 to the casino site, these travel times roughly equate to mileage distances. Therefore, a substantial number of these workers could be drawn from Middletown and other Orange County communities within this 15 minute drive radius, with others being drawn from population concentrations in Liberty and nearby Monticello.

Given the dispersal of project employees throughout a relatively expansive commuter zone, the effects of employee concentration, such as localized commuter congestion and school over burdens, is expected to be minimal. The following discussion further illuminates this finding through an estimation of in-migration and job shifting within the existing labor pool.

PROJECTED IN-MIGRATION RESULTING FROM DIRECT CASINO EMPLOYMENT

The project expects to implement a recruitment program well ahead of the opening of the project, with preferential hiring policies directed at attracting tribal members. Although few Stockbridge-Munsee members are anticipated to relocate for casino jobs, the following discussion does take into account limited in-migration.

Of the 4,907 full-time-equivalent (FTE) positions projected for the operational period of the Casino Project, it is anticipated that 70 percent of the staff, or about 3,435 FTE positions, would be recruited from within an approximate 100-mile radius of the Project site. The remaining 30 percent of the staff, or approximately 1,472 FTE positions, would be filled by individuals recruited from beyond the 100-mile radius, and would include individuals filling positions requiring specialized degrees or a more advanced skill-set than could be provided through the initial training program that would be required for all employees.

It is assumed that a vast majority of the 1,472 FTE employees recruited from beyond the 100-mile radius of the Project site would move with their families to a location within the study area, the radius of which is defined by a one-hour driving distance from the Project site. Table 45 shows the projected counties of residence (post-relocation) for all employees recruited from beyond the 100-mile radius of the project site. It is expected that a majority of these new employees (approximately 54 percent, or 795 FTE employees) would chose to locate within Sullivan County in order to minimize their commuting distance. Approximately 23 percent are expected to locate in nearby Orange County, in part to locate closer to the New York City Metropolitan area, where there are greater employment opportunities for other family members. Smaller percentages would locate in the other counties within the study area, such as Wayne or Pike Counties in Pennsylvania, in part to take advantage of lower property taxes. Of those recruited from beyond the 100-mile radius of the Project site, approximately 90 percent, or 1,325 FTE employees and their families, would be new residents to the study area.

Table 45
Projected Counties of Residence: Project Employees Recruited from Beyond 100-mile Radius of Project Site

Location	Full-Time-Equivalent Employees	Percent of Total from Beyond 100-mile Radius
Within study area		
Sullivan County	795	54%
Orange County	331	23%
Ulster County	53	4%
Delaware County	40	3%
Wayne County	73	5%
Pike County	33	2%
Study Area Total	**1,325**	**90%**
Outside study area		
Outside Study Area Total	**147**	**10%**

Source: AKRF, Inc.

Table 46 shows the projected distribution of counties of residence (post-relocation) for the remaining 3,435 FTE Project employees that would be recruited from within a 100-mile radius of the Project Site. For purposes of analysis it is assumed that approximately 82 percent, or 2,812 FTE employees, would ultimately live within the study area. While a vast majority of these 2,812 FTE employees would already be living within the study area, there would be some future employees that, upon being hired for a Project position, would move from their residence outside of the study area to a new residence within the study area, and would therefore be considered a new study area resident. If such a move were to a new county (e.g., from Rockland County to Sullivan County), they would also be considered a new member of the workforce in their new county of residence. It is estimated that of the 2,812 FTE employees recruited from within the 100-mile radius that would live in the study area, 269 of those employees would be new residents within the study area. Combined with the 1,325 new residents expected to migrate to the study area from beyond the 100-mile radius, in total there would be an estimated 1,594 new FTE employees residing in the study area.

Table 46
Projected County of Residence: Project Employees Recruited from Within 100-mile Radius of Project Site

Location	Full-Time-Equivalent Employees	Percent of Total from Within 100-mile Radius
Within study area		
Sullivan County	1,678	49%
Orange County	658	19%
Ulster County	91	3%
Delaware County	91	3%
Wayne County	204	6%
Pike County	90	3%
Study Area Total	**2,812**	**82%**
Outside study area		
Outside Study Area Total	**623**	**18%**

Notes: A number of factors were used to allocate the future employment among residents within the 100-mile radius of the Project site, including consideration of existing labor markets and unemployment rates within the study area counties, travel times to the Project site, housing costs, and relative wage rates within the counties compared to the compensation packages to be provided by the Project.
Source: AKRF, Inc.

Table 47 summarizes the projected distribution of counties of residence (post-relocation) for all of the estimated 4,907 FTE Project employees. As shown in Table 47, it is estimated that 84 percent, or 4,137 FTE employees, would ultimately live within the study area. This is consistent with the 2006-2010 commuting times in the study area, in which approximately 83 percent of employees lived within a one-hour commuting distance from their jobs. In total, 1,594 FTE employees, or approximately 32 percent of all Project employees, would be new residents within the study area. About 50 percent of all employees (2,473 FTE employees) would ultimately reside within Sullivan County, and approximately 47 percent or those workers, or 1,160 FTE employees, would be new residents within Sullivan County. Another 34 percent (1,664 FTE) would reside outside of Sullivan County within the study area, and approximately 38 percent of those workers, or 639 FTE employees, would be new residents within the study area. The remaining 16 percent would reside outside of the study area boundary.

Table 47
Projected County of Residence: All Project Employees

Location	Full-Time-Equivalent Employees	Percent of Total Project Employment
Within study area		
Sullivan County	2,473	50%
Orange County	989	20%
Ulster County	144	3%
Delaware County	130	3%
Wayne County	277	6%
Pike County	124	2%
Study Area Total	**4,137**	**84%**
Outside study area		
Outside Study Area Total	**770**	**16%**
Source: AKRF, Inc.		

PROJECTED IN-MIGRATION RESULTING FROM INDIRECT EMPLOYMENT

The operation of the proposed casino, hotel, and associated restaurants and entertainment amenities would require the ongoing purchase of a wide range of goods and services, many of which would be purchased within the study area. The demand generated within the local and regional economies would represent powerful opportunities for the expansion and creation of businesses, and the growth of employment, to serve the operational needs of the Project.

The expenditures associated with the annual operation of the Project would create an estimated 936 full-time-equivalent jobs off site throughout Sullivan County. Similar to direct Casino Project employment, this indirect employment would be met by a combination of existing and new study area residents, including: current residents that are unemployed; employed residents of the study area that vacate existing full- or part-time positions; and new residents to the study area.

The in-migration resulting from indirect employment is more difficult to quantify than in-migration from Casino Project employment due to several factors. First, the locations where indirect employment is generated would be dispersed throughout Sullivan County and beyond, meaning that the potential commuting area would vary depending on the location of employment. In addition, the labor pool is "elastic" in the sense that not all available workers are necessarily working to full capacity, e.g., there are part-time workers able to work full-time jobs if the opportunity arose. Therefore, many of the indirectly-generated FTE positions would be filled by current residents working additional hours at an existing job. For example, a local laundry service used by the Casino Project may elect to meet additional demand by first asking existing employees to work more hours, e.g., asking part-time workers to work full-time, before hiring new employees. In other words, there may be a higher percentage of underemployed residents meeting the employment demand generated indirectly by the Casino Project, compared to the direct Casino Project employment.

Despite these factors, for purposes of analysis it is conservatively assumed that indirect employment generated by the Casino Project would exhibit a similar distribution as direct employment in terms of proportions of existing versus new residents employed, and their location in the study area. As shown in Table 43, the Project would result in the indirect employment of approximately 936 full-time equivalent jobs in the region. Under these

assumptions, approximately 84 percent of the indirect employment generated in the region, or 789 FTE employees, would ultimately live within the study area (see Table 48). Of these employees, an estimated 343 (over 40 percent) would be new residents of the study area. The remaining employment would be met through existing residents that are currently unemployed, underemployed, or employed job-changers. As with direct Project employment, it is assumed that Sullivan County would experience the most dramatic influx of residents, with an estimated 221 FTE employees and their families newly residing in Sullivan County.

Table 48
Projected County of Residence: Indirect Employees

Location	Full-Time-Equivalent Employees	Percent of Total Indirect Employment
Within study area		
Sullivan County	472	50%
Orange County	189	20%
Ulster County	27	3%
Delaware County	25	3%
Wayne County	53	6%
Pike County	23	2%
Study Area Total	**789**	**84%**
Outside study area		
Outside Study Area Total	**147**	**16%**

Source: AKRF, Inc.

PROJECTED EFFECTS ON STUDY AREA HOUSING MARKET

As discussed above, 1,594 project employees would be new residents of the study area, and would place new demands on the housing market. In addition, housing demand would result from current study area residents who would relocate within the study area to be closer to the project site. Of the 2,543 FTE Project employees who currently reside within the study area, the new job offering would prompt some to relocate within the study area, either for better living quarters and/or to locate closer to the Project site. For purposes of analysis it is assumed that 204 FTE employees who currently reside within the study area would move from outside of Sullivan County to a place of residence within Sullivan County. Therefore, there would be 1,798 direct employees would place new demands on the study area's housing market.

Accounting for both the direct and indirect employment generated by the project, it is estimated that 2,140 FTE employees (and their families) would be new residents within the study area (1,798 direct employees and 343 indirect employees), and would therefore place new demands on the study area's housing market.

Table 49 shows the number of new households estimated within each of the study area counties, as well as the projected demand in terms of the expected allocation of renters/buyers.

Table 49
New Study Area Housing Demand from Project Employees and Indirect Employment

Location	New Households	Projected Renters	Projected Home Buyers
Sullivan County	1,381	455	926
Orange County	475	148	327
Ulster County	76	24	52
Delaware County	57	15	42
Wayne County	104	20	84
Pike County	47	7	40
Study Area Total	**2,140**	**669**	**1,471**

Sources: AKRF, Inc. Projected allocation of renters/buyers based on county ratios from 2010 Census.

There are other, less quantifiable factors that could alter the Project-generated housing demand within the study area. There would be some current study area residents that, upon receiving a new Project job, would move elsewhere within the study area, particularly to Sullivan County to be closer to the Project. There may also be new households in which more than one household member is employed by the Project or a business with new indirect employment generated by the Project, which would reduce the overall demand projected. In addition, as described in greater detail below, there would be many currently employed workers within the study area that would vacate other positions for employment with the Project or businesses with new indirect employment generated by the Project. The positions vacated by those employees would be filled by other workers, some of whom would migrate to the study area. Conservatively assuming that all workers that filled vacated positions were new to the study area, there would be an additional demand for housing within the study area from as many as 2,174 FTE employees (in addition to the FTE employees described above). Depending on the location of residence for these new replacement employees, the Project could result in a net increase in housing demand of anywhere from 1,381 to 2,488 units in Sullivan County, and from 2,140 to 4,314 units within the study area as a whole (including Sullivan County).

The Casino Project-generated housing demand within Sullivan County would be greater than the existing supply of vacant housing for rent and sale. Based on the U.S. Census Bureau's 2010 Census, there were approximately 1,424 housing units for rent and 1,029 units for sale in Sullivan County. However, as shown in Table 38 above, there are approximately 5,634 housing units proposed for development in Sullivan County. The amount of future housing development in Sullivan County will be heavily influenced by the major project initiatives proposed, such as the Casino Project. Given the amount of housing in the planning stages, it is expected that the housing demand generated by the Casino Project would be met by a combination of the existing housing stock and new housing development in the study area.

PROJECTED EFFECTS ON STUDY AREA WORKFORCE

Sullivan County's labor force would experience the most dramatic benefits from Project operations. As shown in Table 47 above, it is estimated that 2,473 FTE Project employees would ultimately be residents of Sullivan County. Based on the annual average workforce for Sullivan County in 2010 (35,000 workers), the additional 2,473 FTE Project employees would represent approximately 7.1 percent of the total workforce in Sullivan County.

Of the 3,435 Project employees recruited from within the 100-mile radius of the Project site, approximately 443 would be unemployed Sullivan County residents, representing approximately 14 percent of the current unemployed workforce in Sullivan County.[1] As described above and shown in Table 31, Sullivan County has a relatively high percentage of unemployed persons with previous work experience in the retail trade and accommodation and food services sectors, which are complementary experience bases for Project employment. Overall, it is estimated that the Project would employ approximately 835 unemployed persons residing within the study area.

According to industry research and employee surveys conducted at similar casino operations, casino employment opportunities attract workers due to highly competitive benefit packages, including attractive health and life insurance benefit programs, paid vacations, and disability insurance. Job security and opportunities for advancement in the operation and within the industry are also cited as attractive reasons for unemployed or "underemployed" persons (those currently in part-time or seasonal positions) to take full-time casino jobs.[2] Among Harrah's employees, 11 percent report that they no longer receive food stamps as a result of their jobs; 12 percent indicate that they have been able to get off welfare; 19 percent indicated that they have been able to get off unemployment; and 73 percent have indicated that they have been able to get better health benefits because of their jobs.[3]

Approximately 870 residents of Sullivan County are projected to vacate existing full-time, part-time, and seasonal positions for Project employment. The Project would offer better wages and benefits than existing positions in comparable industry sectors in Sullivan County. In addition, given the high rates of part-time and seasonal employment in Sullivan County, many workers interested in full-time, year-round work would be attracted by the positions and benefit packages offered by the Project. Given that an estimated 870 Sullivan County residents would be vacating other positions for Project work, the Project would generate a demand for new employment within those vacated positions, some of which would be filled by unemployed Sullivan County residents, as well as new residents to Sullivan County.

In addition to direct employment, the expenditures associated with the annual operation of the Project would create an estimated 936 full-time-equivalent jobs off-site throughout Sullivan County. It is estimated that 472 existing and future Sullivan County residents would benefit from indirect employment opportunities. Combined with direct employment, the 2,945 Sullivan County residents holding positions directly and indirectly generated by the Project would represent 8.4 percent of Sullivan County's annual average workforce (based on the 2010 estimate of 35,000 workers). As with the direct Casino Project employment, many of the indirect jobs generated by the Project would be filled by study area residents that are currently unemployed; applying the same ratios used for the analysis of direct employment, it is estimated

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[1] Based on the 2010 annual average unemployment of 3,200 unemployed persons in Sullivan County. New York State Department of Labor, Local Area Unemployment Statistics (LAUS).

[2] U.S. General Accounting Office, "Impact of Gambling: Economic Effects More Measurable than Social Effects," April 2000; Thomas A. Garrett, Federal Reserve Bank, "Casino Gambling in America and its Economic Impacts,", August 2003; National Gambling Impact Study Commission, "National Gambling Impact Study Commission Report," June 18, 1999; Harrah's Entertainment, Inc., "Capturing the Benefits of Casino Gaming: An Economic Development Initiative for Rhode Island," March 14, 2003; and others.

[3] Harrah's, ibid.

that as many as 85 currently unemployed Sullivan County residents would be employed by indirect job opportunities generated by the Project.

The Project would have positive employment benefits, although far less substantial, outside of Sullivan County within the study area. It is estimated that 467 currently unemployed residents within the study area boundary outside of Sullivan County would be employed due to the Project (392 direct Casino employees and 75 jobs generated indirectly). In total, approximately 1,981 workers (1,664 Project employees and 317 in jobs generated indirectly) would reside outside of Sullivan County within the study area.

EFFECTS OF CASINO VISITORS

PROJECTED CASINO VISITATION

The New York City market area is the single largest generator of casino visitors in America, annually originating over 14.8 million casino trips. In addition, New York City has the highest percentage casino participation rate in America, with an estimated 33 percent of its adult population having gambled in a casino in the past year.[1] According to Harrah's national survey of casino gamblers, of those New Yorkers who took casino trips, 74 percent of the trips were to Atlantic City, and another 13 percent of the trips were to the Connecticut casinos. Adjacent New Jersey represents the seventh largest generator of casino trips in the Country, with 89 percent of their casino visits going to Atlantic City.[2] The remaining New York City-generated casino trips would have Las Vegas, other United States, or offshore casino destinations. Since the completion of the Harrah's survey, Pennsylvania has opened a number of casinos, and it is likely that a portion of New York City-generated casino trips patronize casinos in eastern Pennsylvania.

Atlantic City, eastern Connecticut, and eastern Pennsylvania casinos represent important destinations for New York's and New Jersey's casino patrons. Atlantic City, with 11 casinos, is second only to Las Vegas as a national—if not an international—gaming and entertainment destination. Despite this concentration, the presence of Foxwoods and Mohegan Sun in Connecticut and the other casinos in eastern Pennsylvania has created a more diverse regional casino market, and these casinos have demonstrably drawn patrons who otherwise would have traveled to Atlantic City. Research has indicated that even the Atlantic City casinos have lost market share to the Connecticut and Pennsylvania casinos.[3,4] With Pennsylvania's recent decision to allow slot-machine casinos to also offer table games it is expected that even more patrons will be drawn away from Atlantic City.

Casino patrons customarily travel well over an hour to visit casino facilities. A national survey of casinos indicated that upwards of 91 percent of visitors traveling to casinos similar to the

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[1] Harrah's Entertainment, Inc., "Harrah's Survey 2006: Profile of the American Casino Gambler," June 2006.

[2] Harrah's Entertainment, Inc., "Harrah's Survey 2003: Profile of the American Casino Gambler," September 2003.

[3] Adam Rose and Associates, "The Regional Economic Impacts of Casino gambling: Assessment of the Literature and Establishment of a Research Agenda," November 5, 1998.

[4] Associated Press, "Revenue declines for Atlantic City casinos in June," New Jersey Real Time News, http://www.nj.com/news/index.ssf/2010/07/revenue_for_atlantic_city_casi.html

proposed project came from outside a 50 mile radius, representing at least an hour's drive.[1] Another study indicates that as many as 61.7 percent of casino patrons will travel 51-250 miles to visit a casino, with nearly 14 percent traveling over 250 miles.[2] As discussed above, New York casino patrons regularly travel greater distances to casino facilities in Atlantic City, Connecticut, and Pennsylvania. Atlantic City and the Connecticut casinos are approximately equidistant from the New York Market, with each destination being approximately 130 miles from Manhattan, and the eastern Pennsylvania casinos are approximately 100 miles from Manhattan. The proposed Stockbridge-Munsee casino would be located less than 100 miles from Manhattan, and just over 100 and 130 miles from the major casino trip originations in New Jersey, Newark and Trenton, respectively.

Given the strength of the casino gambling market in the New Jersey-New York-Connecticut region, the proposed project could, upon commencement of operations, attract up to 6 million visitors per year, and ramp upwards to as many as 10 million visits per year at the completion of Phase II.[3] The majority of these visits would represent trips made by visitors originating in New York, New Jersey, and Connecticut markets, as well as attracting visitors from nearby Pennsylvania locations, and locations accessible to the I-84 corridor in Connecticut (the Hartford-New Haven region, approximately 115 miles from the Casino Project site, generated 6.4 million casino trips in 2002).

Because of the destination nature of the proposed Casino, it is expected that majority of the Casino's patrons would represent new visits to Sullivan County that would not otherwise occur in the absence of the Casino. Nearly 88 percent of the visitors to the Foxwoods Resort Casino in Connecticut reported that they would not have come to the area were it not for the casino.[4] It is expected that most visitors would be day visitors, traveling to the casino, partaking in the amenities and activities available at the Casino, such as gambling, dining, and entertainment, and returning home. Day visitors would be expected to spend approximately four hours in the Casino, gambling for approximately 2.5 hours.[5]

Given easy highway access and the destination nature of the Casino Project and the current absence of other casino venues or major destination attractions in the immediate area, overnight visitors are not expected to comprise a large proportion of the visitor population. Whereas other casino projects have estimated as little as 7 percent of their visitors spending the night in the area,[6] approximately 40 percent of the visitors to Foxwoods and Mohegan Sun are overnight

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[1] Dean Gerstein, et. al., "Analysis of the Casino Survey," National Gambling Impact Study Commission, April 14, 1999.

[2] Dean Gerstein, et. al., "Gambling Impact and Behavior Study," National Gambling Impact Study Commission, April 1, 1999.

[3] An updated (2010) market study for the Casino Project (Appendix C) projects that annual visitation to the completed project would be less than the 10 million visitors assumed for the EIS analysis. This higher visitation estimate is conservative for purposes of environmental review.

[4] Fred Carstensen, et. al., "The Economic Impact of the Mashantucket Pequot Tribal Nation Operations on Connecticut," Connecticut Center for Economic Analysis, November 28, 2000.

[5] Dean Gerstein, et. al., "Analysis of the Casino Survey," National Gambling Impact Study Commission , April 14, 1999; also ECO Northwest, "Local Impact Analysis of the Proposed Hood River Casino," October 1998.

[6] "Local Impact Analysis of the Proposed Hood River Casino: A Report to the Confederated Tribes of the Warm Springs Indian Reservation," ECONorthwest, October 1998.

visitors.[1] Ultimately, upon completion of Phase I and Phase II of the entire Casino Project, it is anticipated that approximately 8 to 10 percent of the visitors would represent overnight guests. Prior to the completion of Phase II (the 750-room hotel), the number of overnight visitors is expected to be significantly smaller due to the ease of access to the Casino for most of the metropolitan region's visitors, and the availability of hotel and motel lodging facilities.

Upon the completion of the proposed Phase II Casino hotel, the number of overnight visitors in anticipated to ramp upwards toward the 8 to 10 percent figure, and the on-site hotel is expected to accommodate as much as possible of the demand created by the project. In addition, the on-site hotel is anticipated to compete with off-site lodging establishments for casino visitors, from which it is expected to attract casino patrons who formerly were customers. This would have the effect of a temporary "bubble" in the local lodging industry until the Phase II hotel is complete, at which time local establishments would have to offer amenities or experiences to retain casino clients. However, with only 750 rooms and an anticipated 80 to 85 percent occupancy rate, the anticipated number of overnight casino visitors cannot be completely accommodated on site, and the spill-over will represent an important opportunity for the Sullivan County lodging industry.

According to the American Gaming Association's 2007 and 2008 Survey of Casino Entertainment, the anticipated visitor has higher income, a white collar job, and is more likely to have completed some college education than the average member of the U.S. population, as shown in Table 50.[2]

Table 50
Characteristics of Anticipated Casino Patrons

Demographic Characteristic	Casino Patron	U.S. Population
Median Household Income	$59,735	$51,653
Median Age	47	46
Some College Education	55%	54%
White Collar Job	41%	38%
Retired	20%	20%

Sources: American Gaming Association, "2007 State of the States: The AGA Survey of Casino Entertainment," and "2008 State of the States: The AGA Survey of Casino Entertainment," 2007 and 2008.

The visitors to the Casino Project would be expected to arrive either by private automobile or by charter bus. Tour or charter bus travel is an increasingly popular mode of transportation to and from casino destinations, and several bus operators in the region specialize in regularly scheduled or charter travel to the Atlantic City and Connecticut casinos. In 1997, approximately 31 percent of the Atlantic City casino visitors arrived by bus, representing 10.5 million passengers and nearly 28,000 buses.[3] Bus operators have expressed interest in serving the proposed Stockbridge-Munsee Casino, and bus service will be available upon opening of the Casino Project facilities.

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[1] Ibid., Fred Carstensen, et. al.

[2] American Gaming Association, "2007 State of the States: The AGA Survey of Casino Entertainment," and "2008 State of the States: The AGA Survey of Casino Entertainment," 2007 and 2008.

[3] "Casino Gambling in New Jersey: A Report to the National Gambling Impact Commission," New Jersey Casino Control Commission, January 1998.

For purposes of a conservative analysis of potential traffic conditions, the proposed project is assumed to attract approximately 100 55-passenger buses per day, with 20 to 30 bus trips during the weekend peak hours, representing approximately 20 percent of the anticipated casino visitor trips, or approximately 2 million visits.

Casino patrons arriving and departing by private automobile would comprise approximately 80 percent of the visitors to the proposed casino, or up to approximately 8 million visitors. The entire Casino Project, upon completion of Phases I and II, is conservatively assumed to generate between 32,400 and 36,700 automobile trips per day. As discussed in the Traffic Impact Study, approximately 75 percent of all visitors (bus and private automobile) to the proposed casino would arrive on State Road 17, from the south, and approximately 12 percent of the visitors would originate from the west of the site, also arriving via Route 17; the remaining 13 percent would represent visitors using local roadways, especially County Highway 161 from the north.

The Sullivan County Airport is located nearby. Currently there is no commercial service from this facility. The airport, however, is home to a number of private and corporate airplanes. An insignificant number of visitors can be expected to occasionally use this airport to access the Casino Project by private or chartered plane. No rail services currently provide access to the immediate vicinity of the Casino Project, and therefore no casino patrons are expected to arrive at the site by train.

OFF-SITE VISITOR SPENDING PATTERNS

The Casino Project's introduction of up to 10 million visitors per year into Sullivan County is expected to result in an overall gradual strengthening of the regional economy, mainly through direct spending on-site that supports the jobs and purchases of goods and services by the Casino operations. Spending by Casino patrons on incidental purchases off-site in non-casino enterprises—restaurants, hotels, motels, retail establishments, etc.—are also expected to create economic benefits in the local and regional economies.

The proposed Casino Project is designed as a destination facility, with self-contained and integrated entertainment, dining, and lodging facilities. The experience of similar venues is that patrons come to the facility specifically to partake in the venue's offerings, and they leave for home following their visit to the facility.

Casino Project visitors arriving by bus would be expected to have a markedly different effect of the local and regional economy than would those arriving by private vehicle. Visitors arriving by charter or private bus would be delivered from their point of embarkation and brought directly to the facility's front door. At a scheduled time, these visitors would reload onto the bus and leave for home. These visitors would generally have little or no opportunity to explore the local environs or patronize local establishments. However, the indirect positive consequences of on-site spending for food, lodging, and gaming, ultimately supports casino jobs and expenditures by the casino in the local and regional economies.

It is anticipated, however, that charter bus operators and tour organizers would offer casino visitors package trips that include stops at other regional destination attractions along the travel routes. In particular, it is anticipated that tour operators would offer visits to Woodbury Commons, the destination outlet shopping mall featuring over 200 name-brand shops. Woodbury Commons is located in Central Valley, in Orange County, at the junction of Route 17 and I-87 (New York State Thruway), approximately 40 miles from the Casino Project site. The vast majority of the visitors arriving at the site from State Route 17 from the east would travel from the south (the New York City metropolitan area) on I-87, and therefore be in close

proximity to Woodbury Commons. It is anticipated that retailers in the immediate area of this destination shopping center would benefit from Casino Project traffic, both by bus patrons, as well as by those traveling by private car.

Aside from the Woodbury Commons destination shopping attraction, the retail shopping opportunities in the immediate vicinity of the Casino Project are limited, and no apparent magnet shopping opportunities exist in the nearby retail centers or business districts that are expected to attract casino visitors. Women are cited to dominate the retail sales market, and lacking "outstanding shopping options," casino patrons are not likely to extend their stays in the area.[1] However, the Casino visitors represent a potentially powerful purchasing population, and their presence in the Project area represents an opportunity for enhanced and new retail establishments, especially in downtown Monticello, Liberty, and Fallsburg, and in business districts along the major casino visitor travel routes.

Casino patrons visit casinos for the diverse and exciting entertainment experiences offered by and at the casino; casino visits are cited as be multi-purpose tourist visits during which exploration and impulsive spending occurs. However, consumer spending at casino gift shops and on-site retail establishments is not a major activity of casino visitors, suggesting that spending in surrounding communities is expected to be less so. Less than 43 percent of the visitors to Foxwoods visited the on-site Foxwoods gift shops, and less than 30 percent of the Foxwoods visitors listed shopping elsewhere in Connecticut as an activity.[2] Furthermore, a survey of Massachusetts and Rhode Island visitors to Mohegan Sun found that less than 34 percent made retail purchases (not including food purchases) while in the casino.[3] While the spending potential of Casino Project visitors is substantial, the bulk of their spending would be expected to occur within the Casino Project.

However, Casino Project visitors dependent upon private automobiles do have the mobility to leave the site of the casino and explore surrounding communities and patronize area businesses. Sullivan County's tourist industry is active and provides opportunities for casino patrons to experience other venues besides those offered at the casino. The Bethel Woods Performing Arts Center in nearby Bethel is an example of a cultural attraction that is likely to attract casino visitors.

Automobile-dependent Casino visitors are expected to drive substantial distances to the Casino Project, and an anticipated category of purchases would involve gasoline and oil and other automobile-related products. The Stockbridge-Munsee Casino facility would have on on-site service station that is expected to provide for the needs of many Casino Project motorists. Despite the on-site service station, it is anticipated that numerous visitors would purchase gasoline and automobile-related products and snacks at existing service stations along their travel routes.

Among the Casino Project visitors whose spending will affect local and regional and regional economic activity are the local residents who visit the Casino Project. The proposed Casino is expected to provide Sullivan County residents with an alternative leisure and entertainment

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[1] Denise von Herrmann, et. al., "Gaming in the Mississippi Economy: A Marketing, Tourism, and Economic Perspective," The University of Southern Mississippi, June 30, 2000.

[2] Fred Carstensen, et. al., "The Impact of the Mashantucket Pequot Tribal Nation Operations on Connecticut," Connecticut Center for Economic Analysis, November 28, 2000.

[3] Clyde Barrow, "New England Casino Gaming Update," Center for Policy Analysis, University of Massachusetts-Dartmouth, March 2006.

venue that would compete with existing local entertainment and leisure businesses. This competition will be felt by local businesses when local residents elect to visit the casino instead of visiting the leisure and entertainment venues formerly frequented. The business sectors most vulnerable to experiencing this include restaurants, bars, movie theaters, and other entertainment sector venues.[1] The hospitality industry, including hotels, motels, and bed & breakfast establishments, may also experience the effects of casino hotel competition upon the completion of the Phase II hotel.

Communities elsewhere in America in which destination casinos have been built have experienced alterations of local consumer spending behavior through which a portion of leisure spending is shifted toward the casino amenities and away from established leisure and entertainment businesses. While this shift in local spending, known as the "substitution effect,"[2] is expected to result in a decrease in business activity among competing businesses, the spending, insofar as it is shifted to in-casino purchases, is retained within the overall Sullivan County and regional economy, and therefore this spending continues to support economic activity, such as wages and salaries, purchases, and associated taxes, within the overall local economic sphere. In addition, the spending undertaken by casino employees newly relocated to the region, and the spending incurred by new residents assuming the existing full- and part-time jobs vacated by new casino employees would represent entirely new consumer spending activity in their communities of residence and the local and regional economy, thereby further offsetting the potential negative effects of the potential consumer spending shifts.[3]

Overall, the effect of Casino Project visitors on the local and regional economy is expected to be positive. Casino visitor spending will be highly concentrated in the Casino operation, on gaming, dining, and lodging (under Phase II), thereby supporting the foundation of the economic activity generated by the Casino Project's operations. Incidental spending by casino visitors is expected to result in direct economic benefits to local businesses and businesses along travel routes serving travelers, such as automobile service sector. Actual visitor spending, and particularly the potential for increased off-site visitor spending, is expected to stimulate entrepreneurial activities and overall business growth as the local economy adapts to provide attractive compliments and alternatives to the casino's attractions. The potential for negative economic activity resulting from the substitution effect of local spending shifts is expected to be offset by newly generated employee spending, as well as by the adaptation of local businesses to attract and capture the spending potential of casino employees and patrons.

F. EFFECTS ON COMMUNITY SERVICES

The proposed project would likely create additional demand for community services, including police, fire, and emergency services, schools, and health and welfare-related services. The additional demand would be mostly created due to the establishment of new residences within

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[1] New Jersey Casino Control Commission, "Casino Gambling in New Jersey: A Report to the National Gambling Impact Study Commission," January 1998.

[2] See Thomas A. Garrett, Federal Reserve Bank, "Casino Gambling in America and its Economic Impacts,", August 2003; U.S. General Accounting Office, "Impact of Gambling: Economic Effects More Measurable than Social Effects," April 2000; and Taylor, Krepps, and Wang, "The National Evidence on the Socioeconomic Impacts of American Indian Gaming on Non-Indian Communities," submitted to the *Journal of Gambling Studies*, April 2000.

[3] Adam Rose, National Gambling Impact Study Commission, "The Regional Economic Impacts of Casino Gambling: Assessment of the Literature and Establishment of a Research Agenda," November 5, 1998.

the overall study area, but demands on certain community services would also result from the visitors to the casino facility.

As discussed above, the casino would create approximately 4,907 full-time-equivalent jobs. In addition to direct employment, the expenditures associated with the annual operation of the Project would create an estimated 936 FTE jobs off-site throughout Sullivan County. A vast majority of the employees filling both direct and indirect jobs would be drawn from an extensive commuter region encompassing all of Sullivan and Orange Counties, and portions of Ulster and Delaware Counties, and portions of Wayne and Pike Counties, Pennsylvania. Of these employees, an estimated 2,140 would be new residents into the overall study area.

Because the casino would be centrally located within Sullivan County, and the majority of the new employees migrating into the region would come into Sullivan communities, the majority of the new demands on community services from direct employment and Project visitors would be incurred by Sullivan County and the municipalities in the immediate vicinity of the proposed casino, mainly the Towns of Thompson and Fallsburg, and the Village of Monticello. Of the 2,140 new residents, approximately 1,381 would be expected to settle in Sullivan County communities. The balance of the direct and indirect employees who would become new residents would be spread over the study area, with approximately 475 settling in Orange County, 57 in Delaware County, and 76 in Ulster County. The remaining new residents would be widely spread in communities beyond these counties.

Existing residents filling jobs at the Project or at other businesses supporting casino operations would have a neutral-to-positive effect on the local economy. Those with neutral effects would be workers shifting jobs to work; these workers are already spending, and saving their employment earnings. Those existing resident employees resulting in positive economic effects would be the currently unemployed or under-employed workers who assume secure full-time direct or indirect Project jobs, thereby increasing their consumer spending and saving potential, and decreasing their reliance on public assistance and health and welfare programs.

These new residents assuming casino jobs would bring new consumer spending and saving potential into the region, thereby creating new economic activity and the generation of sales taxes on the purchase of goods and services. Indirect employment created by the project would further stimulate spending and associated tax revenues to the County and State. These residents would seek to occupy currently vacant rental properties, and would create a new market for the purchase of existing dwelling units. In addition, these residents could establish a new demand for the construction of new rental or owner-occupied dwelling units throughout the region, thereby stimulating the construction of new homes, creation of construction jobs, and the generation of an additional round of economic activities that would result in additional wages and salaries, purchases of goods and services, and sales and income taxes generated. In addition, new property tax revenues would be generated by new residential construction, and would be collected by County, municipal, school, and special district taxing authorities.

To mitigate impacts resulting from increased demand for services, the Tribe has entered into a Local Government Agreement with Sullivan County and the local governments. The Local Government Agreement is a binding agreement that provides funding to Sullivan County in the amount of $15 million per year. The County is obligated to allocate this funding to municipal governments in Sullivan County to mitigate impacts to the affected local communities.

LAW ENFORCEMENT AND SOCIAL SERVICES

It is anticipated that the State of New York would require the formation of New York State Police Casino Details under the Tribal-State Compact agreement. The Casino Detail would be responsible for conducting the day-to-day police operations needed to maintain public order and public safety, and for enforcing the applicable criminal laws of the State. It is anticipated that the Tribe would fund this Casino Detail through monies provided to the State under the Compact. Along with the Casino Detail, the Tribe would also have on-site security guards to provide additional security services for the project.

Other law enforcement services needed as a result of the project, such as those related to policing roads and activities off the casino premises, would be provided by the Sullivan County Sheriff's Department, the local State Police barracks, and the municipal police departments, as needed. Criminal offenders would be prosecuted through the New York State criminal justice system. In the event that a State Police Casino Detail is not required under the Compact, the Tribe anticipates that it will reach a separate agreement on law enforcement jurisdiction and have the Sullivan County Sheriff's Department provide on-site policing.

New York has specific federal statutes conferring limited criminal and civil jurisdiction to the State that are similar to Public Law 280 (the federal statute that grants certain criminal and civil jurisdiction to the states). 25 U.S.C. Sect. 232, "Jurisdiction of New York State over offenses committed on reservations within the State," cedes criminal jurisdiction to New York in cases where criminal offenses are committed by or to an Indian on Indian Reservations within the State. The Tribe anticipates that State law enforcement would be used for the casino project, at least initially. Experience in the three towns in the vicinity of Connecticut's Foxwoods Resort Casino shows that out-of-casino crimes have increased only marginally since the opening of the casino in 1992.[1]

Traffic-related enforcement services are expected to experience an increased demand due primarily to casino patrons traveling to and from the casino. As noted elsewhere, approximately 75 percent of the visitors would arrive and depart from the site on Route 17, east of Exit 107. Traffic and automobile-related infractions, especially speeding, are expected to increase on this roadway, with minor increases on the other area road networks accessing the site. The number of motor vehicle accidents is also expected to increase due to the increased volume of traffic on the roadways, particularly on Route 17. Accidents are reported to have increased by 500 percent on the roadways serving the Foxwoods casino, in Connecticut.[2] It is also noted, however, that Foxwoods casino is accessed by local roads that are unfamiliar to most patrons, whereas the proposed Stockbridge-Munsee casino is located immediately adjacent to a well-marked highway exit, and therefore, the anticipated percentage increase would be substantially less than that noted for Foxwoods.

The New York State Police would be the primary law enforcement agency responsible for patrolling and servicing any increase in accident and traffic-related enforcement activity on Route 17, and local police and the Sullivan County Sheriff's Department would be required to answer the increased demands on local and County roadways.

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[1] Fred Carstensen, et. al., Connecticut Center for Economic Analysis, "The Economic Impact of the Mashantucket Pequot Tribal Nation Operations in Connecticut," November 28, 2000.

[2] South Western Regional Planning Agency, "Bridgeport Casino Traffic Impacts on the South Western Region of Connecticut," July 2001.

A potential increase in criminal behavior and anti-social behavior is a potential result of the presence of the casino in the study area.[1] The direct relationship between casino gambling and increases in local crime rates, however, has not been definitively established. Research and literature on this matter suggest that further study is needed, but overall, the literature shows that communities with legalized gambling at casinos are as safe as communities without casinos.[2] Data indicate that while there is not a definitive direct link between gambling and crime, pathological gamblers have higher arrest rates than non-pathological gamblers;[3] pathological gamblers may represent approximately 1.2 to 1.6 percent of the adult population.[4] A small percentage of casino visitors residing in the local area may exhibit pathological gambling characteristics due to the easy accessibility of the casino to their places of residence or employment. In situations where this occurs, local law enforcement and local social services agencies may experience an increased demand for services.

As the vast majority of the casino visitors would travel to the casino from communities dispersed widely beyond the study area, the potential social and law enforcement effects related to pathological gambling would effectively be diffused throughout a much broader region encompassing the full area from which visitors would be drawn.[5] There is evidence, however, that people who become pathological gamblers also have other behavior disorders that require the attention of local agencies.[6] Consequently, a portion of the demands on social and law enforcement agencies attributed to pathological gambling are, in fact, not new demands.

The Tribe and Sullivan County have acknowledged, however, that issues associated with gaming related addiction and pathological gambling behavior may need to be addressed, and anticipate that it will be included in the Tribal-State Compact. However, to the extent that this is not addressed, the Tribe has agreed to enter into a supplemental agreement with local governments to ensure the provision of services relating to the prevention and treatment of gambling addiction in the Local Government Agreement.

FIRE PROTECTION AND EMERGENCY MEDICAL SERVICES[7]

The proposed casino will use existing fire protection and emergency medical service networks established for the Town of Thompson. Primary fire protection service would be provided by the Rock Hill Fire Station, which is identified as the locally impacted entity in the Tribe's Local

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[1] Eadington, William R., "The Economics of Casino Gambling," Journal of Economic Perspectives, Vol. 13, No. 3, Summer, 1999, pg. 173-192.

[2] National Gambling Impact Study Commission Report, "Gambling's Impact on People Places," June 1999.

[3] U.S. General Accounting Office, "Impact of Gambling: Economic Effects More Measurable than Social Effects," April 2000.

[4] National Gambling Impact Study Commission Report, "Gambling's Impact on People and Places," June 1999.

[5] Ibid., National Gambling Impact Study Commission, and U.S. General Accounting Office. See also Barron, John M., et. al., "The Impact of Casino Gambling on Personal Bankruptcy Filing Rates," August 18, 2000, pg. 16.

[6] Ibid., U.S. General Accounting Office.

[7] Content and text derived from Final Environmental Assessment, Proposed Stockbridge-Munsee Casino, Rizzo Associates, July 15, 2003.

Government Agreement, and the Village of Monticello Fire Station. Mobile Medic will be the primary provider of emergency medical services, with the Rock Hill and Village of Monticello Ambulance Corps providing back-up services. The project would place a burden on these fire protection and emergency medical service networks due to the increase in the number of new households and visitors to the area. However, the Local Government Agreement provides additional resources to local governments for these services to ensure that the service providers are able to handle the anticipated volume of people and the level of activity that is generated by a casino of this magnitude. The parties believe that the fire protection and emergency services will be addressed in the Compact. If they are not, the Tribe expects to enter into separate agreements relating to fire protection and emergency medical services.

In addition, the Tribe has agreed to adopt fire protection and building construction codes that are no less rigorous than the New York State Uniform Building and Fire Prevention Cite in the Local Government Agreement. The Tribe will enforce its fire protection and building codes, but independent consultants shall also provide quarterly reports on construction activity and facility conditions to the County.

SCHOOLS

As summarized in Table 51, below, the casino would attract a total of 2,316 new residents (and their families) to school districts in the overall region (1,945 direct employees of the Casino Project, and 371 indirect employees generated by Casino Project operations). Of these, an estimated 2,140 would settle within the study area, with the remaining new residents settling in communities beyond the study area itself. These new residential family units would be expected to increase the overall population of the region by an additional 1,383 children under the age of 18; it is estimated that 1,274 of these children would newly reside within the study area.

Table 51
Anticipated School Children and Place of Residence

	Total Employees[1]	Current Residents	New Residents	% New Residents	New Children Under 18 years old
Sullivan County	2,945	1,563	1,381	46.9	812
Orange County	1,178	703	475	40.3	289
Delaware County	155	98	57	36.7	35
Ulster County	171	95	76	44.4	46
Wayne County	330	225	104	31.6	64
Pike County	147	100	47	32.2	29
Total Within Study Area	**4,926**	**2,786**	**2,140**	**43.5**	**1,274**
Outside Study Area	917	742	175	19.1	109
Total	**5,843**	**3,527**	**2,316**	**39.6**	**1,383**

Note: [1] The "Total Employees" column includes both direct and indirect employment generated by the Casino Project.
Source: AKRF, Inc.

Among the 1,274 new school-age children in the study area, it is anticipated that 812 of them would live in Sullivan County communities, 289 in Orange County, 35 in Delaware County, 46 in Ulster County, and 92 in the Pennsylvania counties of Wayne and Pike. An estimated 109 children under the age of 18 would come from casino employee families settling in communities outside of the immediate study area.

Among the 812 children under the age of 18 living in Sullivan County, the Monticello and Fallsburg Central School Districts expected to experience the largest enrollment increases due to the project site's approximate location to these districts and the availability of rental and owner-occupied housing opportunities in the towns and village comprising these districts. The school-age children outside these two school districts would be broadly distributed among the remaining eight Sullivan County school districts, and among the school districts in the other counties making up the region in which new residents would settle.

It is assumed that 80 percent of the new children under 18 years old settling in Sullivan County, or 650 children, would attend either the Monticello or the Fallsburg schools, with the remaining 162 children attending schools in the other eight Sullivan districts. Assuming that the distribution of children was 75 percent to the Monticello schools, and 25 percent to the Fallsburg districts, the proposed casino employees would increase the number of students in each of these two districts by 488 and 162 students, respectively.

As shown in Table 52, the Monticello Central School District has a total enrollment of approximately 3,439 students for the 2010-2011 academic year; their 2010-2011 budget is $75,985,992, or $11,975 per pupil that must be derived from local property taxes. The addition of 488 students to the Monticello School district would represent an increase in school population of approximately 14 percent, and would increase annual operating costs that must be covered locally by approximately $5.84 million.

Table 52
Existing Characteristics of Impacted School Districts

	Monticello Central District	Fallsburg Central District
2010 – 2011 Enrollment	3,439	1,393
2010 – 2011 Budget	$75,985,992	$35,579,068
Expenditure per Pupil	$22,095	$25,541
Percent of Cost Covered by Local Property Taxes	54.2%	50.0%
Cost per Pupil from Local Property Taxes	$11,975	$12,770

Source: 2010-11 Property Tax Report Card Data, Part I - Budget, Levy and Enrollment Claim Year: 2009-2010 (http://www.emsc.nysed.gov/mgtserv/propertytax/201011_property_tax_report_card_budget_levy_and_enrollment.html.html), accessed September 10, 2010.

The Fallsburg Central School District's three schools have a total enrollment of approximately 1,393 pupils for the 2010-2011 academic year, a total budget of $35,579,068, and costs averaging approximately $12,770 per pupil from local property taxes. An addition of 162 new students to this district would represent a student body increase of approximately 12 percent, and an additional annual cost from local revenue sources of $2.07 million.

These potential increases in school costs would be partially offset by increases in school tax revenues paid by Casino Project workers' households. As discussed above, employment demand generated by the Casino Project would result in approximately 1,381 new household units in Sullivan County, of which 80 percent, or approximately 1,105, would locate within the Fallsburg and Monticello School Districts. Of these, it is estimated that approximately 68 percent, or 750 units, would be home buyers. The average 2008 per-parcel (e.g., equivalent to single-family home) school tax bill for homes within the Fallsburg and Monticello Central School Districts in

2008 was $2,163.[1] Assuming this amount applies to new employees' households, the new households would pay an estimated $1.8 million annually to the Monticello Central School District, and approximately $598,000 annually to the Fallsburg Central School District.

The increases in estimated operating costs could be further offset by potential excess capacity in the school systems. An enrollment study for the Monticello Central School District published in January 2010 found that there is currently significant unused pupil capacity in the district's school buildings, and enrollment estimates suggest that unused capacity will continue to exist into the future for at least the next five years.[2]

The Monticello School District is specifically identified as a locally impacted entity and as such is entitled to compensation under the Local Government Agreement. However, the payment to Sullivan County under the Local Government Agreement is intended to mitigate impacts on other locally impacted entities, including Fallsburg.

Similar to Project-generated housing demand, there are other, less quantifiable factors that could alter the demand on area schools. There would be some current study area residents that, upon receiving a new Project job, would move elsewhere within the study area, particularly to Sullivan County to be closer to the Project. There may also be new households in which more than one household member is employed by the Project or a business with new indirect employment generated by the Project, which would reduce the overall Project-generated demand (this analysis conservatively assumes that all direct and indirect employees would live in separate households). In addition, some children of Project-generated workers would presumably attend private schools, which also would reduce the overall demand on public schools.

There also would be currently employed workers within the study area that would vacate existing jobs for employment with the Project or with businesses with new indirect employment generated by the Project. Such moves could be motivated by improved benefit or compensation, shorter commute times, job security, or other factors. The positions vacated by those Project employees would presumably be filled by other workers, some of whom would migrate to the study area. Conservatively assuming that all workers that filled vacated positions were new to the study area, there could be as many as 2,174 additional workers in the study area, many of which would have school-aged children. Within Sullivan County, the new residents "backfilling" vacated positions could introduce as many as 656 new students to Sullivan County schools.

RECREATION AND OPEN SPACE

No recreation or open space resources exist on the project site, although the Neversink River which forms the easternmost boundary of the project site is used recreationally by boaters and fishermen. A New York State Department of Environmental Conservation (NYSDEC) public access site is located adjacent to the southernmost part project site along Edwards Road on the eastern bank of the river, and another NYSDEC access site is located north of the site in

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[1] Average per parcel school tax data from http://www.orps.state.ny.us/cfapps/MuniPro/osc/county/oscAvrtaxlevy.cfm, accessed September 9, 2010.

[2] *Enrollment Projection/Demographic Study for the Monticello Central School District*, prepared by Dr. Paul Seversky, AdvisorySolutions Consultant, New York State School Boards Association, January 2010.

Fallsburg, along Route 42. Neither of these sites would be affected by the project. The casino, especially the hotel, would be partially visible to recreational users of the Neversink River in segments of the River north of the Route 17 crossing. The visibility of the casino facilities would be minimized by the Tribe's restoration and revegetation of the open mined areas along the river banks.

New residents to the study area would increase the demand on local recreational resources, including parks and recreation programs. Further, visitors to the casino would represent a new market for Sullivan recreational opportunities and outlets. Pursuant to the Local Government Agreement, the Sullivan County Visitor's Association will have space in the proposed facility for materials on recreation opportunities in Sullivan County.

G. GROWTH-INDUCING ASPECTS

The proposed Stockbridge-Munsee Casino has the potential to result in growth inducing effects of new housing and commercial development as a result of the creation of new permanent employment. The operation of the proposed Casino Project would generate a demand for goods and services, thereby stimulating economic activity. In addition, visitors to the Casino would spend money in the area, further stimulating economic activity. All three of these factors—employment, operational demands, and visitor spending—have the potential to induce growth in the local and regionally affected areas.

EMPLOYEE-RELATED INDUCED EFFECTS

Employment opportunities created by the Casino Project would result in new employees moving into the commuter region. These new employees would require places to live, and they would spend their earnings on the necessities of life. The employees of the Casino Project would be drawn from a wide commuting zone encompassing all or portions of several counties, and their effects would be broadcast throughout this overall region. Sullivan County, however, would achieve a concentration of induced growth benefits and effects due to the fact that the project is located in the County, and that the majority of the employees moving into the region to work at the Casino would live there.

When Phase I and Phase II of the project are in full operation, the total direct wages of the 4,907 new employees would be $177.28 million per year. Of these employees, 1,741, or 35.5 percent, would represent new residents to the region. These 1,741 new residents would earn approximately $62.93 million per year, much of which would represent new employee spending in the region.

Of these estimated 1,741 new employees relocating to the area, an estimated 1,594 would settle within the study area (see Figure 1), and approximately 147 would settle in communities beyond the defined study area. Of those settling in the study area, an estimated 956 would represent new residents of Sullivan County, approximately 399 would settle in Orange County, 48 in Delaware County, 64 in Ulster County, and 128 would settle in communities in Wayne and Pike Counties, Pennsylvania. There would also be an estimated 204 new employees who would relocate to Sullivan County from other counties within the study area.

The wages earned by project employees would be largely spent in the communities in which they reside. Newly settled workers—the 1,160 employees who settle in Sullivan County (956 from outside the study area, and 204 from other counties within the study area), for example—would represent new consumers of housing, as well as goods and services. The second most important new source of induced growth potential would result from employees already residing

in the study area who were formerly unemployed, and those who shifted from non-Casino part-time jobs to full-time jobs at the Casino. The wages earned by these individuals would represent incrementally greater spending potential of existing residents.

The wages of employees would be used to provide workers and their families with the necessities of life, including food and shelter (e.g., rental or owner-occupied housing), clothing, health care, and other services and goods. To the extent that the majority of these purchases are made locally, businesses and industries serving resident communities with these goods and services would experience increased demands, resulting in further investments in capital and labor needed to meet these increased demands. In Sullivan County communities in particular, such as the Towns of Thompson and Fallsburg, and the Village of Monticello, opportunities for the expansion of existing businesses and the opening of new businesses will exist. The hamlet centers of Fallsburg and Thompson, and the central business district of Monticello are locales in which commercial induced growth would likely occur, thereby providing opportunities to revitalize and increase economic activities in these places.

The business sectors most likely to experience induced growth effects in the form of expansion and new growth opportunities include retailers of food and goods, such as grocers, department stores, lumber, hardware, and clothing. In addition, personal support and medical services, such as doctors and dentists, as well as accountants and insurance businesses, would be expected to experience new demand opportunities. Eating and drinking establishments, as well as recreation and amusement operations would be expected to benefit from the increased demand of new employee residents and the increased spending potential of formerly unemployed and underemployed project employees.

It is anticipated that most new employees moving into the region would initially seek rental housing, thereby inducing a demand for the provision of rental units through new construction or the division of existing structures into rental units. New employees in the upper wage brackets would seek to purchase homes, drawing from the existing inventory of homes and stimulating the construction of new homes. These induced effects on the rental market would likely be felt closer to the location of the project, in Thompson, Fallsburg, and Monticello, whereas the induced effects of new single-family home construction would be dispersed throughout the broader study area from which employees would be drawn.

OPERATION-RELATED INDUCED EFFECTS

The purchase of goods and services resulting from the operations of the Casino would represent a substantial growth inducing effect of the project. As shown in Table 43, the annual operations of Phase I and Phase II of the project would represent $514.96 million per year in new purchases originating from the project's Sullivan County location. The operation of the proposed Casino, hotel, and associated restaurants and entertainment amenities would require the ongoing purchase of a wide range of goods and services, many of which would be purchased within the local and regional market areas. These purchases would entail produce, foodstuffs, and wholesale goods, as well as services such as transportation, maintenance, and repairs.

The demand the local and regional economies experience would represent powerful opportunities for the expansion and creation of businesses to serve the operational needs of the project. The wholesale sectors serving the beverage, restaurant, hospitality, and entertainment industries would most likely find increased business as a result of the proposed project.[1] These

[1] Rephann, Terrance J., et. al., "Casino Gambling as an Economic Development Strategy," Tourism Economics 3,2: 161-183, 1997.

industries would be those with increased opportunities for induced growth potential. Southeastern Connecticut has seen an expansion and increase in services such as food wholesale warehouses and linen services as a result of the two casinos in that region.[1]

As further illustrated in Table 43, the secondary, or indirect economic benefits of the project as a result of its operations would be substantial. Indirectly induced spending would total approximately $443.62 million per year as a result of increased business activity among the industries serving the project. Wholesalers, for example, providing fresh produce would likely invest to expand their operations to secure competitive positions in the new markets created by the project. This new spending and investment by these businesses in capital (e.g., equipment) and labor (e.g., new or expanded employment) that is stimulated by direct project spending represents an important segment of induced growth potential for the region. The expenditures associated with the annual operation of the project would create an estimated 936 full-time equivalent jobs off site throughout Sullivan County, and 1,820 indirect jobs in New York State.

While project operations would indirectly create the need for new housing development, it cannot be reasonably projected what or where that need might specifically be, nor how the need might be met. Unlike direct effects of casino operations, which can be estimated and tied to specific locations of employment and spending, the induced growth is more widely disseminated throughout the region. Therefore, estimates of induced growth in this and other casino studies is appropriately limited to descriptions of the overall magnitude of induced growth effects, rather than specifically identifying locations where these effects would likely occur.

The induced growth created by the proposed casino would create additional demand for community services, including police, fire, and emergency services, schools, and health and welfare-related services. The additional demand would be created due to the establishment of new businesses or the growth of existing businesses, new employees, and new residents within Sullivan County and the larger study area. Similar to direct growth, the increased demand generated by induced growth would be offset by spending and associated tax revenues to the County and State. In addition, new property tax revenues would be generated by any induced residential construction, and would be collected by County, municipal, school, and special district taxing authorities.

As discussed above, it would be speculative to quantify the incremental burden created by induced growth on the community facilities of any given municipality because the businesses, employment, and new residents indirectly generated by the project would be spread widely throughout the region. Compared to direct employment, it can be expected that induced employment and new residents would be less concentrated in Sullivan County communities, and therefore, the municipalities in the immediate vicinity of the proposed casinos would incur proportionately less impacts from induced employment compared to the employee estimates for direct employment. In addition, because a high percentage of the induced employment would be absorbed by underemployed persons at existing businesses performing under capacity, there would be proportionately less new businesses and residents from induced growth, thereby lessening the new demand for community services.

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[1] State of Maine Citizen's Casino Advisory Task Force, Report of the Economic Development Subcommittee, 2003.

VISITOR-RELATED INDUCED GROWTH EFFECTS

When in full operation, Phase I and Phase II of the project could attract up to 10 million visitors per year. These visitors would be expected to spend money in the local and regional economies on transportation, food, lodging, and entertainment while traveling to and from their homes to the project area, and while visiting, exploring, and partaking in other tourist activities in the local area.

As discussed above, approximately 20 percent of the project's 10 million annual visitors would access the site by bus, with the remaining 80 percent, or up to 8 million visitors would arrive and depart by private automobile. The majority—an estimated 75 percent—of the visitors would utilize Route 17 to the south of the site as their main transportation corridor. The remaining visitors would use Route 17 to the west (12 percent), and the local roadway systems (an estimated 13 percent). The proposed Casino, upon completion of Phases I and II, is expected to generate between 32,400 and 36,700 automobile trips per day, representing substantial visitor and tourist spending potential.

Of the Casino visitors, the up to 2 million per year arriving and departing on chartered buses represent the least likely visitors to induce growth in the local and regional economies. The nature of Casino charter bus transportation is to leave and pick-up patrons at the Casino location, providing little opportunity for these patrons to spend outside the confines of the Casino property itself. As a result, the spending associated with bus visitors has little growth inducing effect. Despite this, however, charter bus transportation companies serving the Casino are expected to offer patrons the opportunity for combination trips involving the Casino and other regional destination centers, such as the Woodbury Commons outlet center. Increased economic activity at this and other destination retail or entertainment locations that may be served by Casino bus patrons would result in increased spending and investment by the effected businesses, thereby inducing stimulated growth in the retail, food, and entertainment sectors of the localized economies.

The up to 8 million annual Casino visitors depending on private automobiles represent a particularly mobile source of potential spending and growth inducing activity. As many as 2.5 million of these automobile-based Casino visits could originate from within the local area, within a roughly half-hour drive of the Casino site (a region similar to that depicted in Figure 1). These patrons would likely be day visitors taking specialized destination trips to the Casino, and thereby would not represent a significant new spending resource for the local economy. Being residents of the general area, this type of visitor already contributes to economic activity in the region. Overall, given a relatively fixed range of consumer spending on a per household basis, visits to the Casino by these individuals would actually represent a negative effect on the local economy due to the "substitution" factor discussed elsewhere, whereby consumer food and entertainment spending is shifted to the Casino and away from existing venues, such as local theaters and restaurants. [1]

The remaining Casino visitors using private automobiles would be expected to spend in the local and regional economy on travel-related goods and services, especially gasoline, and secondarily on off-site lodging, food, and entertainment.

As noted above, during Phase I, prior to the construction of the project's hotel, visitors would create a demand for overnight accommodations, and the region's hotel and hospitality industries

[1] U.S. General Accounting Office, "Impact of Gambling: Economic Effects More Measurable Than Social Effects," April 2000.

would experience an increased demand for their services. This would be especially true for the accommodation businesses located in communities immediately adjacent to Route 17 east and south, the main travel route for Casino visitors. The Phase II 750-room hotel would represent substantial competition for overnight visitors, and upon its construction the local lodging industries will be required to distinguish their services to retail client base. However, given the number of potential overnight visitors, the Phase II hotel would be unlikely to accommodate all overnight visitors attracted to the region, and is therefore anticipated that there will be a significant "spill-over" effect representing growth opportunities for local hotels, motels, and other lodging businesses. The hotel and motel industry in Southeastern Connecticut is noted to be expanding as a result of the influx of casino visitors, despite the expansion of the on-site hotel facilities at the Foxwoods and Mohegan Sun casinos.[1]

The Casino would encompass several restaurants, offering patrons dining opportunities integrated into the overall Casino/entertainment experience. As such, many visitors to the project would be expected to dine at the project. Snacks for travel home from the Casino would represent an area of economic activity and potential induced growth for off-site businesses. The cluster of easily accessible food establishments on Route 42, adjacent to Exit 104, just north of the project site would be expected to experience growth inducing effects as a result of increased business activity. Unfortunately, no such existing cluster exists along Route 17 to the south and east of the site before Middletown. Food and gasoline businesses at Middletown and Monroe/Woodbury Common exits, however, would be expected to experience growth inducing demands.

Despite the on-site dining opportunities, Casino patrons in the numbers expected to visit the project will create a significant potential market for the expansion and creation of local restaurant businesses. It is anticipated that the potential demand for high-quality dining and restaurant experiences resulting from the presence of Casino visitors would stimulate investment in the upgrade and enhancement of existing restaurants, and the establishment of new high-quality restaurants aimed at attracting Casino patrons. These investments would represent important economic development and downtown revitalization forces in Monticello and Liberty, as well as the hamlets of Fallsburg and Thompson.

Regional economic improvement, downtown revitalization, and overall increased local business activity in the local economy will, to some degree, depend on the local business investment and marketing. Capturing visitor spending requires an economic infrastructure that will entice casino visitors to venture into nearby business centers and spend money in local businesses. Without such, these visitors will spend elsewhere.[2] As discussed throughout this analysis, the presence of the Casino Project will stimulate economic activity via the Casino's operations and the wages and salaries earned by its employees, but the opportunities to leverage the unrealized benefits of this project are substantial. Overall, the economic effect of the proposed Casino Project on the local and regional economy is expected to be positive, as it would represent a major construction project, it would be a major new employer of workers, and would be a new tourist and entertainment venue in a marketplace in which few competing alternatives exist.[3]

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[1] Federal Reserve Bank of Boston, "The Political Economy of Indian Gaming: The New England Experience," in *Communities and Banking*, Number 28, Winter 2000.

[2] See, for example, Michael M. Kurth, et. al., in "The Impact of the Proposed Choctaw Casino on the Economy of Southwest Louisiana," 1999.

[3] Adam Rose, National Gambling Impact Study Commission, "The Regional Economic Impacts of Casino Gambling: Assessment of the Literature and Establishment of a Research Agenda," November 5, 1998.

H. CUMULATIVE EFFECTS

This section of the analysis considers the effects of the proposed project in the context of two other similarly-sized resort casino projects located in the general vicinity. Over the past several years there have been numerous resort casino proposals for Sullivan County locations. At the present time, the Concord Hotel and Casino and the Proposed Project are the only casino projects actively under consideration. However, it is considered likely that at some time in the near future an additional similarly-sized resort casino in the vicinity of Route 17 may be proposed, for a total of three casinos in the region. In addition to the three casinos, this cumulative analysis also considers full build out of the Concord Resort master plan and the Rock Hill Town Center project.

Based on these assumptions, this section assesses the potential cumulative effects of the three casinos, the Concord Resort master plan (which includes one of the three casinos), and the Rock Hill Town Center project on the labor pool, housing market, schools, and local and regional economies. The analysis is based on the economic assessment of the proposed Stockbridge-Munsee resort casino as presented above, as well as on information on the Concord Resort master plan from publicly-available documents, including the *2006 Concord Resort Draft Generic Environmental Impact Statement*. The third potential casino included in this analysis is based on the size and scale of formerly-proposed Sullivan County casinos, e.g., the Mohawk Mountain Resort and Casino. This formerly-proposed casino project is considered a representative example of a resort casino project that could be expected to be proposed. In addition, this analysis considers data from the cumulative assessment of casino hotels prepared by the Spectrum Gaming Group, LLC (the "Spectrum Report")[1]. Information on the Rock Hill Town Center project is from the *June 2009 Rock Hill Town Center Development Final Environmental Impact Statement/Final Generic Environmental Impact Statement* and other publicly-available documents.

CASINO #1: STOCKBRIDGE-MUNSEE RESORT CASINO

The Stockbridge-Munsee Community is proposing the development of a destination casino resort that includes approximately 650,000 gross square feet, comprising a 150,000 square foot casino with 3,000 slot machines and 190 table games, a 30,000 square foot multi-purpose venue, a 230-seat racebook, a 350-seat entertainment venue and bar, a 750-room hotel, food court outlets, a coffee shop, service station, three specialty restaurants, a 600-seat buffet and various snack and beverage outlets, back-of-house and employee areas. Parking for 8,500 cars will also be provided. This Casino Project would be located in the Town of Thompson, Sullivan County, New York. The proposed site is immediately adjacent to State Route 17, a major transportation corridor, and is located approximately 100 miles away from New York City.

CASINO #2: CONCORD RESORT MASTER PLAN

The proposed project site is located on approximately 1,735 acres within the Town of Thompson. The site is bordered on the north by Sullivan County Route 109, on the south by NYS Route 17, on the east by County Road 161 and Downs Road and on the west by New York

[1] Spectrum Gaming Group, LLC, "Planning for the Future: Analyzing the Potential Economic Impacts of Class III Casino Hotels On Sullivan County, NY," April 2004. The report was produced at the request of the Sullivan County Legislature to examine the economic and financial impacts of the three Class III casinos projected to be constructed in Sullivan County.

State Route 42. The overall master plan for the project would consist of: a 120,000-square-foot casino; 625,000 square feet of retail; 1,000 hotel rooms; 100,000 square feet of food, beverage and recreation public spaces; 200,000 square feet of back-of-house space; 300,000 square feet of convention center space; a 60,000-square-foot country club; and 3,000 residential units. The residential units would include year-round and weekender/second-home, single-family, multi-family, and affordable housing.

CASINO #3: REPRESENTATIVE SIMILARLY-SIZED RESORT AND CASINO

The third resort casino included in this cumulative analysis is a hypothetical project considered to be of the size and scale of a resort casino likely to be proposed for a Sullivan County location in the future. This hypothetical project is based on the no longer active casino proposal for a 450,000-square-foot resort and casino that was proposed in the Town of Thompson, approximately 3 miles north of the Village of Monticello (the former Mohawk Mountain Resort and Casino Proposal). At the time proposed, the Mohawk Mountain Resort and Casino would have included a 165,000 square foot gaming floor and support area, with 3,500 slot machines, 100 gaming tables, a 750-room hotel, a 2000-seat theater and several restaurants on the 66-acre project site. The project would also have contained a 5,040 stall-parking garage together with bus parking and infrastructure on an adjacent 141-acre parcel. The project was designed as a Las Vegas type project with the style and character of a classic Catskills Resort.

In addition to these projects, this cumulative assessment also considers full build out of the Rock Hill Town Center development:

ROCK HILL TOWN CENTER

The Rock Hill Town Center development proposes the construction of a mixed-use residential and commercial development of 1,673 housing units and approximately 60,000 square feet of commercial space. The residential development would consist primarily of townhome units (approximately 63 percent of the total unit count), as well as single family dwellings (approximately 13 percent), and 384 multifamily dwellings (approximately 24 percent). Approximately 10 percent of the total residential units proposed would be age restricted, allowing only adults 55 years of age and older to reside in these units. The commercial portion is planned for neighborhood convenience retail uses. The project would adjoin the Rock Hill hamlet which is proximate to Exit 109 of NYS Route 17. The project is anticipated to be fully built out in three phases over a 20-year period and is expected to be completed by 2030.

CUMULATIVE EFFECTS ON THE LABOR POOL

The four projects described above would generate a substantial amount of new direct employment, as well as indirect employment through the purchase of goods and services to support their operations. As described above, this analysis estimates that the proposed Stockbridge-Munsee Casino would generate 4,907 direct jobs and 936 indirect jobs within Sullivan County. Based on employment information from the *2006 Concord Resort Draft Generic Environmental Impact Statement*, and assuming the same amount of casino employment as the proposed project, the Concord Resort project would generate an estimated 5,110 direct jobs during operations. Assuming the same ratio of direct to indirect employment as the proposed project, the Concord Resort project would generate an estimated 975 indirect jobs. The Mohawk Mountain EIS estimated that project would generate 4,000 direct jobs (the EIS did not estimate indirect employment, so the same direct-to-indirect employment ratio from the proposed project was also applied to this hypothetical project, resulting in an estimated 763

indirect jobs. Public documentation for Rock Hill Town Center does not estimate the numbers of direct and indirect jobs that would be generated by the project; however, based on a standard industry ratio of 1 FTE employee per 400 square feet of retail space and 1 FTE employee per 300 units, the Rock Hill Town Center project would generate an estimated 147 direct FTE jobs during operations. Based on these estimates and assumptions, the four projects would cumulatively generate an estimated 14,164 direct jobs and 2,674 indirect jobs upon full operation of their facilities.

Given that all of the projects would be in relatively close proximity to each other, it is expected that they would draw a majority of their employment from within the same six-county study area delineated within this analysis (see Figure 1). The indirect employment generated by the projects would come from an even broader area, because the locations where indirect employment is generated would be dispersed throughout Sullivan County and beyond, meaning that the potential commuting area would vary depending on the location of employment.

The additional direct and indirect employment opportunities presented by the four projects would result in even greater increases in the study area's workforce, and would provide additional employment opportunities for unemployed and underemployed residents of the study area. The above analysis of the proposed Stockbridge-Munsee Casino estimates that approximately 27 percent of the Project-generated employment (1,313 direct jobs and 250 indirect jobs) would come from the existing Sullivan County workforce. However, that existing workforce—which in 2010 averaged 35,000 workers with a 9.2 percent unemployment rate—would not have the capacity to absorb 27 percent of the total employment from all four projects. Therefore, while Sullivan County residents would have a larger number of total jobs from the development of four projects, it is expected that a greater percentage of the total jobs would be absorbed by the workforce within surrounding counties, and there would be a greater percentage of in-migration to Sullivan County from surrounding counties. It is also expected that a greater percentage of the employment would be drawn from outside a 100-mile radius of the Town of Thompson.

Given the robust labor supply in the larger study area, the percentage increase of in-migration to Sullivan County under this cumulative scenario is not expected to be significantly greater than what was estimated for the single Casino Project analysis above (which estimates that 24 percent of all Project-generated employment would come from new households in Sullivan County). The Spectrum Report cites a Pathfinders[1] Workforce Report for the Sullivan County area dated August 2003, which defined a "labor-shed" consisting of Sullivan County and at least six portions of its six neighboring counties in New York, Pennsylvania, and New Jersey. Within this labor-shed area, Pathfinders identified a total of 67,400 people who were classified as "underemployed" and potentially ready to change jobs for higher wages and/or better benefits when the casinos open. In addition, the Pathfinders report identified 14,000 unemployed persons and estimated that another 14,400 persons could re-enter the workforce if good jobs became available.[2] Many of these workers, if hired for positions with the casinos or businesses

[1] The Pathfinders is a corporate site-selection consultant.

[2] The 2003 Pathfinders Report defined a labor shed consisting of Sullivan County and at least portions of six neighboring counties in New York, Pennsylvania, and New Jersey. Unemployment rates have increased between 2003 and 2009. For instance, the unemployment rate in Sullivan County has increased from 5.3 percent in 2003 to 8.7 percent in 2009. The findings of the 2003 report are therefore conservative in light of existing economic conditions.

supporting the casinos, would remain in their existing places of residents and commute to the casino or a supporting business in Sullivan County.

While the four projects would provide new employment opportunities for unemployed and underemployed residents of the study area, and very likely lead to a reduction in the unemployment rate, there would continue to be an unemployed population. Not all unemployed residents of the study area would be interested in, and/or qualified for, positions at one of the four projects or businesses supporting the projects. In addition, the projects would cumulatively generate a "critical mass" of employment opportunities that would entice more people to move to the study area compared to conditions with only one casino in operation. The creation of new jobs would also prompt those who had been discouraged from seeking employment to begin a job search (thereby defining them as unemployed). Therefore, while the four projects would certainly fuel job growth, it would be speculative to predict the effects of multiple casinos and other major development projects on the unemployment rate relative to the single Casino Project analysis.

The four projects would generate a level of new employment demand that would tighten the labor market within the study area, as existing and future businesses would compete for a share of the same labor pool. This competition for employees could lead to higher wages and benefits at the casinos, and more generally within certain industry sectors. While higher wages throughout the region would translate into more buying power, thus increasing the demand for goods and services, it could also force some business owners to match any increases in salaries. The potential for increases in wages would be most prevalent among business types that provide support to the casino operations, as well as industry sectors with employee skill sets that are comparable to casino employment.

The upward influence on wages is not expected to have a significant adverse impact on the viability of existing and future businesses. The Pathfinders Workforce Report identified an existing prospective labor pool within a commuting area that could satisfy the direct and indirect employment generated by the casino projects. And as described above, the prospect of employment from the casinos and supporting businesses would draw some new workers to the study area, so there would continue to be a pool of unemployed and underemployed workers. Finally, the four projects would not open for business at the same time; each is expected to be developed at different times and in phases, with the full employment demands estimated above not being realized for a decade or longer. The cumulative pressure exerted on the labor pool would occur over a period of many years, enabling the local and regional economies to better adjust to fluctuations in the labor market.

CUMULATIVE EFFECTS ON THE HOUSING MARKET

As shown in Table 49 above, the proposed Casino Project would generate an estimated demand for 2,140 new housing units in the study area, 1,381 of which would be located in Sullivan County. Applying the same percentages to the anticipated direct and indirect employment generated by the four projects would result in a demand for an estimated 6,168 new housing units in the study area, 3,980 of which would be located in Sullivan County.

The cumulative demand for new housing could be even greater, given that a there would be a greater percentage of employment drawn from outside the 100-mile radius, resulting in more in-migration. However, as described above in the discussion of cumulative effects on the labor pool, the percentage of in-migration under a cumulative, multi-casino scenario is not expected to differ substantially from that of the single Casino Project analysis. The Pathfinders Workforce Report cited above suggests that it would be theoretically possible for the three casinos and other

new employers in Sullivan County to fill virtually all of the 18,000 new jobs [based on the Spectrum Report employment estimate] from the Pathfinders labor-shed and that these new employees could commute from where they now live, thus creating no new housing demand. This is not the operating assumption of the Spectrum analysis, and it is not a realistic scenario. Nevertheless, it provides support to the assumption that the amount of in-migration to Sullivan County generated under a cumulative scenario would be somewhat proportional to a one-casino analysis.

There are several other factors that make it speculative to further quantify potential cumulative effects on the housing market. There would be some housing demand generated by new residents that are "backfilling" employment positions vacated by casino and other project workers; the extent of this influence would depend on the amounts of project-related employment drawn from currently employed versus unemployed existing and future residents. There would be some percentage of households that have more than one wage-earner employed by a project or by a business supporting the projects' operations (for purposes of analysis it is conservatively assumed that all 16,838 direct and indirectly-generated employees from project operations would live in separate households). In addition, the indirect employment base would be distributed over a wider region than the study area used in this assessment, because the businesses supporting the four projects' operations would be spread out throughout Sullivan County and beyond.

Overall, given the estimated scale of the housing demand and the over 10-year time frame in which this demand would be generated, there would not be significant adverse socioeconomic impacts due to housing demand generated by the four projects included in this analysis. As described in Section D above, there were 1,252 new residential building permits recorded in 2009 in Orange, Ulster, Wayne, and Pike Counties, and 4,382 residential units planned in Sullivan County, for a total of 5,634 housing units planned for development in the study area. In addition, the Rock Hill Center Phase II and Concord Resort master plan projects are expected to add an additional 4,589 residential units, increasing the number of planned residential units in Sullivan County to 9,971 residential units, for a total of 10,223 housing units planned in the study area. The housing demand generated by the four projects would be satisfied through a combination of available existing housing stock and new development. The extent of housing development in Sullivan County and the surrounding area counties is expected to be driven in large part by the progress of major proposed development projects such as the three casinos. Therefore, if the three casinos were to be developed, the planned housing would be expected to move forward to satisfy the anticipated demand. Furthermore, the long time frame would allow municipalities to prepare for orderly future growth and development, which would be in keeping with the Town of Thompson—Village of Monticello's Joint Comprehensive Plan and the Town of Fallsburg's Comprehensive Plan.

CUMULATIVE EFFECTS ON SCHOOLS

The four projects assumed in this analysis would have a cumulative effect on the operating and capital costs of public schools in the study area, particularly in Sullivan County. The residential components of the Rock Hill Center and Concord Resort projects would generate school-aged children, while many direct and indirectly-generated employees would be new to the study area, and some would have families with school-aged children.

As described above in the discussion of the cumulative effects on the housing market, the direct and indirect employment cumulatively generated by the four projects would result in an estimated 6,168 new households in the study area, 3,980 of which would be located in Sullivan

County. Based on the analytical assumptions used for the single-Casino Project analysis above (31.5 percent of study area households would have children and those households would, on average, have 1.89 school-aged children), it is estimated that about 1,943 new study area households would collectively have 3,672 children that would be new to the study area's school systems. Of that population, there would be an estimated 1,239 households within Sullivan County that collectively would have an estimated 2,341 children that would be new to Sullivan County school systems.

Among the 2,341 new children under the age of 18 living in Sullivan County, the Monticello and Fallsburg Central School Districts are expected to experience the largest enrollment increases due to the projects' locations relative to these districts and the availability of rental and owner-occupied housing opportunities in the towns and village comprising these districts. The school-age children outside these two school districts would be broadly distributed among the remaining eight Sullivan County school districts, and among the school districts in the other counties making up the region in which new residents would settle.

It is assumed that 80 percent of the new children under 18 years old settling in Sullivan County, or approximately 1,873 children, would attend either the Monticello or the Fallsburg schools, with the remaining 468 children attending schools in the other eight Sullivan districts. Assuming that the distribution of children was 75 percent to the Monticello schools, and 25 percent to the Fallsburg districts, the projects' employees would increase the number of students in each of these two districts by 1,405 and 468 students, respectively. In addition, new residents of the Concord Resort and Rock Hill Center projects are projected to add 166 and 435 school-aged children, respectively, to the Monticello schools by full build-out, resulting in a total cumulative increase of 2,006 students in the Monticello Central School District.[1]

As shown in Table 53, the Monticello Central School District has a total enrollment of approximately 3,439 students for the 2010-2011 academic year; their 2010-2011 district budget is $75,985,992; and approximately 54.2 percent of that budget is derived from local property taxes, equating to $11,975 per pupil from local property taxes. The addition of 2,006 students to the Monticello School district would represent an increase in school population of approximately 58 percent, and would increase annual operating costs that must be covered locally by approximately $24.0 million. As described below, this incremental cost would be offset by increases in property tax revenues to the Monticello Central School District and impact fees from the three casino projects.

The Fallsburg Central School District's three schools have a total enrollment of approximately 1,393 pupils for the 2010-2011 academic year, a total budget of $35,579,068, and costs averaging approximately $12,770 per pupil from local revenue sources. An addition of 468 new students to this district would represent a student body increase of approximately 34 percent, and an additional annual cost from local revenue sources of $6.0 million.

[1] According to the Concord Resort DGEIS, the Concord Resort project would generate approximately 166 school-age children who would attend the Monticello School District. According to the Rock Hill Town Center DEIS/DGEIS, the population of school-age children projected for the proposed development would be approximately 435 children over the 15-year build out. Neither of these analyses estimated incremental school-age children generated by project employees.

Table 53
Existing Characteristics of Impacted School Districts

	Monticello Central District	Fallsburg Central District
2010 – 2011 Enrollment	3,439	1,393
2010 – 2011 Budget	$75,985,992	$35,579,068
Expenditure per Pupil	$22,095	$25,541
Percent of Cost Covered by Local Property Taxes	54.2%	50.0%
Cost per Pupil from Local Property Taxes	$11,975	$12,770

Source: 2010-11 Property Tax Report Card Data, Part I - Budget, Levy and Enrollment Claim Year: 2009-2010 (http://www.emsc.nysed.gov/mgtserv/propertytax/201011_property_tax_report_card_budget_levy_and_enrollment.html.html), accessed September 10, 2010.

Similar to the cumulative effects on the labor and housing markets, there are other, less quantifiable factors that could alter the cumulative demand on area schools. There would be currently employed workers within the study area that would vacate other positions for direct or indirect project employment. The positions vacated by those employees would presumably be filled by other workers, some of whom would migrate to the study area and have children that would be new to the school systems. There would be some current study area residents that, upon receiving a new job, would move elsewhere within the study area, particularly to Sullivan County to be closer to the projects. There may also be new households in which more than one household member is employed by the casinos or businesses with new indirect employment generated by the casinos, which would reduce the overall demand (this analysis conservatively assumes that all direct and indirect employees would live in separate households). In addition, some children of project-generated employees would presumably attend private schools, which also would reduce the overall demand on public schools.

Despite these uncertainties, there is little doubt that the projects would result in substantial new costs incurred by school systems, particularly those cited above. While the projected increments are significant, there are numerous factors that would mitigate the potential cumulative impacts on schools. Part of these new school costs would be offset by school real estate taxes applied to the homes of all new households (including those without children). As discussed above, cumulative employment demand generated by the four projects would result in approximately 3,980 new household units in Sullivan County, of which 80 percent, or approximately 3,184, would locate within the Fallsburg and Monticello School Districts. Of these, it is estimated that approximately 68 percent, or 2,706 units, would be home buyers. The average 2008 per-parcel (e.g., equivalent to single-family home) school tax bill for homes within the Fallsburg and Monticello Central School Districts in 2008 was $2,163.[1] Assuming this amount applies to new employees' households, the new households would pay an estimated $5.2 million annually to the Monticello Central School District, and approximately $1.7 million annually to the Fallsburg Central School District.

[1] Average per parcel school tax data from http://www.orps.state.ny.us/cfapps/MuniPro/osc/county/oscAvrtaxlevy.cfm, accessed September 9, 2010.

There would also be taxable components of the planned projects that would generate additional school tax revenues. For example, the Concord Resort DGEIS estimates that at full build-out, the project would pay $17.4 million annually in local real property taxes to the Monticello Central School District, while the Rock Hill Center DEIS/DGEIS estimates that the Rock Hill Town Center project would generate annual property tax revenues of approximately $4.18 million to the Monticello Central School District. The estimated tax revenues cited above are not entirely exclusive, because some of the property taxes generated by the Concord Resort and Rock Hill Town Center would come from new project workers occupying project housing. However, these school tax revenues alone could potentially exceed the incremental costs generated by project-generated students.

Irrespective of project-generated tax revenues, the casinos would be obligated to pay impact fees to local governments to help offset municipal costs generated by the casino projects—these school systems would receive a portion of those fees. In addition, given that the three casinos and other projects would be phased in over a period of at least 10 years, the cumulative demands on school systems would not be fully realized for a decade or longer.

CUMULATIVE EFFECTS ON LOCAL AND REGIONAL ECONOMIES

The proposed Casino Project would have positive direct and indirect impacts on local, regional, and state economics in association with other proposed projects, including the two other proposed resort casinos. The combined economic effect is difficult to quantify given that the methodologies for projecting direct and indirect economic effects differ among the various impact analyses. However, it is clear that the agglomerative effect of the four projects would generate new housing and commercial development from entrepreneurs seeking to capitalize on the enormous growth in employment and the spending generated by that employment, the growth in operational spending from the casinos, and the increased visitor spending. If the four projects were to operate simultaneously, it is expected that a greater percentage of the workforce would find full-time employment at higher wages than would be expected with only one casino in operation, resulting in reduced welfare rolls and increased spending. The three casinos, combined with the completed Bethel Woods Performing Arts Center as well as other venues planned for the area, would generate a critical mass of entertainment options that would make the area a more attractive destination for a wide variety of visitors.

As described in the Town of Thompson—Village of Monticello Joint Comprehensive Plan, the general decline of the larger resorts and the poor health of the racing industry has led to the demise of various support businesses such as restaurants. According to the Comprehensive Plan, much of the area's commercial activity has suffered from lack of investment, which has created a vicious cycle that until recently has made the region less and less appealing as a tourist destination. The four projects would help break this cycle of disinvestment by generating new jobs directly at the projects' casinos, hotels, retail and other components, and indirectly through businesses supporting project operations and providing goods and services to project-generated employees and visitors. The Comprehensive Plan suggests that Sullivan County must be "rebuilt from the ground up as a resort area," and suggests the Town of Thompson as a logical site for a County convention center. The four projects analyzed above would generate the renewed interest, visitation and investment in the area that would be necessary to facilitate those goals.

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Appendix K

Stormwater Pollution Prevention Plan

TETRA TECH

PRELIMINARY Storm Water Pollution Prevention Plan

Prepared For:
Stockbridge-Munsee Casino Project
Heiden Road
Thompson, New York

Project Operator/Owner:
Stockbridge-Munsee Community,
Band of Mohican Indians and Trading Cove New York

Project Operator/Contractor:
To Be Determined

Prepared By:
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508-903-2000

Preparation Date: July 27, 2010
Estimated Construction Start Date:
Estimated Construction End Date:

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1.0 Introduction

This Storm Water Pollution Prevention Plan (SWPPP) is intended as a preliminary effort to identify measures for the control of storm water runoff and for minimizing impacts resulting from the construction of the Stockbridge-Munsee Casino in Thompson, New York on lands to be taken into trust by the U.S. Department of Interior, Bureau of Indian Affairs (Figure 1). The Stockbridge-Munsee Community, Band of Mohican Indians of Wisconsin (the Tribe), a federally recognized Indian tribe (67 Fed. Reg. 46328, 46331 (2002)), and Trading Cove New York are proposing the development of the Stockbridge-Munsee Casino Project. The proposed Stockbridge-Munsee Casino will be a destination facility that includes a Class III gaming complex, as well as such ancillary facilities as a hotel, food and beverage outlets, retail facilities, and a service station. This multi-phased Casino Project would be developed in the Town of Thompson, Sullivan County, New York. The proposed site is located immediately adjacent to State Route 17, a major transportation corridor, and regionally is within 100 miles of New York City. The Project site includes approximately 150 acres of land which currently supports a mining operation, an auto salvage yard, and forested lands. In conjunction with the mining and auto salvage operations, there are approximately 50 acres of disturbed soils with little to no vegetation. Figure 2 shows the proposed Site Plan.

This SWPPP presents structural and non-structural Best Management Practices (BMPs) that will be incorporated in the design and construction of the project to manage stormwater runoff and minimize the discharge of pollutants during construction. This SWPPP also identifies best management practices that are anticipated to remain after construction is complete. A final SWPPP will be prepared as the design of the project advances. The final SWPPP will include a construction phasing plan describing the intended sequence of construction activities. In general, prior to site clearing, perimeter controls such as silt fence along with stabilized exits will be constructed first. As clearing progresses and prior to grubbing, construction of temporary sedimentation basins, stabilized swales and diversion ditches, and filter berms, will be implemented. As practicable, temporary and permanent stabilization measures will be implemented. The goal will be to minimize the amount of disturbed earth at any one time. The ultimate design will incorporate the best management practices discussed in this Preliminary SWPPP and as required pursuant to the CGP.

This SWPPP has been prepared, based on the conceptual level of project design, in accordance with the regulations, guidelines, and conditions set forth by the U.S. Environmental Protection Agency (EPA) in the National Pollutant Discharge Elimination System General Permit for Stormwater Discharges From Construction Activities (CGP), As Modified effective January 8, 2009. A copy of the CGP is provided in Appendix B. There is no known storm water discharges associated with industrial activity other than construction.

2.0 Approach to Permit Compliance

Temporary storm water management systems will control storm water runoff and soil erosion from the construction site and up gradient areas. Temporary sedimentation basins and or traps will be designed in accordance with the CGP requirements. Permanent water quality basins,

water quality structures and swales will be designed to provide the required water quality volume for the developed site. In addition to water quality protection provided by the basins, they will also act as storm water detention basins to control the off-site peak discharge rates so that post-development rates do not exceed pre-development rates for storm events. Permanent storm water management systems will control storm water after the construction phase is completed.

The proposed construction is not expected to negatively impact the quality of storm water being discharged from the site. The best management practices were selected for the project to minimize erosion and sedimentation and manage storm water runoff and are described below. Additional erosion control measures to protect wetland resources and receiving waters beyond what is shown on final SWPPP plans will be implemented if field conditions or professional judgment dictate that additional protection is necessary.

Because the final design of the project is not complete some pollution prevention measures presented in this preliminary SWPPP may or may not be incorporated in the final SWPPP. Some pollution prevention methods are also referenced to "as practicable" or "as deemed necessary". These references are made to build flexibility into the preparation of the final SWPPP and to provide a mechanism to address unanticipated field conditions. The final SWPPP will identify the pollution prevention measures that are incorporated in the design to be implemented during each phase of project construction. The final SWPPP will provide details for the proposed best management practices shown for each phase of construction.

3.0 Construction & Development Effluent Limitations Guidelines

On December 1, 2009, the EPA published effluent limitations guidelines (ELGs) and new source performance standards (NSPS) to control the discharge of pollutants from construction sites. The Construction and Development ELG, or C&D Rule became effective on February 1, 2010.

After February 1, 2010, all permits issued by EPA or states must incorporate the final C&D rule requirements and all construction sites required to obtain permit coverage must implement a range of erosion and sediment controls and pollution prevention measures. For this project the required standard for minimizing pollutants in stormwater discharges includes mandatory sediment basins for drainage locations that serve an area with ten (10) or more acres disturbed at one time and provides for a calculated volume of runoff from the contributing drainage area for the 2-year, 24-hour storm event. The conceptual Project Plans provided in Appendix A include temporary basins; final plans will include basins designed and sized in accordance with the volume requirements.

In addition, other measures mandate that beginning on August 1, 2011 all sites that disturb 20 or more acres of land at one time are required to comply with the turbidity limitation. On February 2, 2014 the limitation applies to all construction sites disturbing 10 or more acres of land at one time. These sites must sample stormwater discharges and comply with a numeric limitation for turbidity. The limitation is 280 NTU (nephelometric turbidity units).

It is expected that the project will commence some time after August 1, 2011 and will disturb more than 20 acres at one time therefore; compliance with the sampling requirements will be

required. The final SWPPP will be updated to include the appropriate forms and ELG conditions and/or requirements in effect at the time of the start of construction based on the final sequencing and amount of area disturbed at one time.

4.0 Contact Information/Responsible Parties

In accordance with Part 5.12 and Appendix A of the CGP, the Tribe and Trading Cove New York are considered Operators of the project. As the project Owners, the Tribe and Trading Cove New York have operational control over construction plans and specifications, including the ability to make modifications to the plans and specifications.

The General Contractor, to be selected at a later date, will also be considered an Operator and the SWPPP will be updated with all required information and signatures to include the Contractor as an Operator. The Contractor will be responsible for the implementation and day-to-day operational control of activities that are necessary to ensure compliance with the SWPPP, including monitoring and inspections, and any necessary revisions to the SWPPP. The Contractor may subcontract certain portions of the proposed work however, as an Operator they are responsible for ensuring that subcontracted work occurs in compliance with this SWPPP and the CGP.

All subcontractors working on the project who are engaged in activities which may generate pollution and could potentially impact stormwater must sign a certification statement. The certification states that they have reviewed the SWPPP, understand the terms and conditions of the SWPPP and they agree to follow the practices described in the SWPPP. Examples of subcontractors who may generate pollution include the concrete supplier, plumber, carpenter, electrician, mason, landscaper and paving company. A subcontractor certification statement is provided in Appendix C. The Contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from their failure to comply with CGP.

Operator/Owner of Plans and Specifications:
Stockbridge-Munsee Community Band of Mohican Indians
Address: local addresses to be provided prior to the start of construction

Operator/Owner of Plans and Specifications:
Trading Cove New York
Address: local addresses to be provided prior to the start of construction

Operator/Owner Contact:
To be determined

The Tribe and Trading Cove New York have operational control over construction plans and specifications for the construction of the project and must insure that all other permittees implementing the SWPPP or portions of the SWPPP are notified in a timely manner of any changes to the plans or specifications that may impact compliance with the CGP and/or this SWPPP.

Operator – General Contractor:
To be Determined

Construction Project Manager, Storm Water Manager, SWPPP and 24-hour Contact:
To be Determined

The General Contractor (Contractor) has operational control over day-to-day activities at the site that are necessary to ensure compliance with the SWPPP, including BMP installation and SWPPP modifications. The Contractor is responsible for providing a qualified inspector and performing inspections. The Contractor shall provide "Qualified Personnel" to conduct inspections required by the CGP. "Qualified Personnel" is defined as a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the construction activity.

The Contractor is responsible for ensuring compliance with the CGP by implementing the erosion prevention and sediment control practices outlined in this SWPPP. However, the Contractor may elect to vary the erosion and sediment control practices from those outlined in this SWPPP and/or may choose to implement alternative measures. Alternative erosion and sediment control practices not described in the SWPPP must be performed in compliance with the CGP and the Contractor must amend this SWPPP accordingly. SWPPP amendments or modifications must be documented using the "SWPPP Amendment Log" found in Appendix E.

Subcontractor(s):
To be determined

2.2 Notice of Intent Filing

All Operators must file a Notice of Intent (NOI) with the EPA to obtain coverage under the CGP prior to the start of construction. The Operator must provide a copy of the EPA Active Status notification (referred to as the Notice of Coverage (NOC) in Appendix D of this SWPPP as soon as it becomes available. The NOC can be printed from the EPA's web site at: http://cfpub.epa.gov/npdes/stormwater/enoi.cfm

The NOI, NOC and Construction Site Notice (see Appendix G) must be posted at the site entrance and on the wall inside of the job trailer.

5.0 Project Site Information

5.1 Project Name and Location

Stockbridge-Munsee Casino
Heiden Road
Sullivan County
Thompson, New York

Latitude: 41-38-46
Longitude: -74-37-26

The proposed site (referred to as the Gildick parcel) is approximately150 acres. The parcel is shown on Figure 3, along with key site features. The site is generally situated north of Exit 107 on State Route 17. The site is located on the east side of County Highway 161 (Heiden Road). The Neversink River forms the eastern property boundary. The main features are the mining operation and the auto salvage yard. Other than these features, the Gildick parcel is wooded. Of the 150 acre project site, approximately 50 acres are disturbed with little to no vegetation.

5.2 Major Construction Activities

Major construction activities associated with the project include earthwork, grading, roadway construction, construction of several buildings, post development stormwater management system and utilities. The expected start and finish dates for the full project build-out is as follows:

Start Date: to be determined
Finish Date: to be determined

As the final project design advances, detailed construction sequencing and erosion and sedimentation control plans will be prepared. This SWPPP will be updated to include specific best management practices for each phase of construction, including plan view locations of best management practices and details of each practice.

5.3 Geology, Soils, Slopes and Current Drainage Patterns

Surficial Geology

The surficial geology within the project area consists of till, outwash, alluvium, fill and bedrock outcrop. Large areas of this parcel have been substantially altered by either the active gravel mining operations or by activities associated with the auto salvage operation. The western portion of this parcel, generally areas above elevation 1120 feet above Mean Sea Level (MSL) United States Geological Survey [USGS], 1966 is located on the eastern slope of a large hill with the surficial material in this area consisting primarily of a thin mantle of glacial till over bedrock. Bedrock is exposed at numerous locations throughout this portion of the property. In contrast, outwash and alluvial deposits, consisting of stratified coarse sand and gravel underlie the east and northeast portions of this parcel.

Soils

Soils mapped by the Natural Resources Conservation Service within the project site include: Arnot-Oquaga complex (map symbol AoC), located in the central portion of the parcel. Smaller areas of Scriba loam (ScA), Scriba and Morris loams (SeB), Wurtsboro loam (WuA, WuB), Oquaga very channery silt loam (OeB), Wellsboro and Wurtsboro soils (WlC), Oquaga-Arnot

complex (OgC), Neversink, Udorthents, smoothed (Ud), Arnot-Lordstown complex (AlC), Tuller-Rock, outcrop complex, Barbour loam (Bb), Bash silt loam (Bs), Fluvaquents-Udifluvents complex (Fu), Pits, gravel (Pg), Pompton gravelly fine sandy loam (PmA), Red Hook sandy loam (Re), Riverhead sandy loam (RhB), and Swartswood gravelly loam (SrB, SrD) are also present. Figure 6 shows the mapped soils.

Slopes / Drainage Patterns

The highest elevations on the parcel occur along the southern portion of the parcel adjacent County Highway 161 (Heiden Road), at approximately 1,240 feet (ft) above MSL (USGS 1966). Lowest elevations generally occur along the Neversink River, which flows in a southerly direction along the eastern boundary of the site at approximately 1,100 ft above MSL (USGS 1966). The slopes range from steep to flat. The southern portion of the site has the steepest slopes. Existing drainage areas are depicted on Figure 4.

5.4 Construction Site Estimates

The following are estimates of the construction site:

Construction Site Area to be disturbed = 100 +/-acres
Percentage impervious area before construction = *
Runoff coefficient before construction = *
Percentage impervious area after construction = *
Runoff coefficient after construction = *

*estimates to be determined based on final design

6.0 Permit Eligibility Documentation

6.1 Receiving Waters/ Total Maximum Daily Load Information (TMDL)

The receiving waters associated with the project include the Neversink River, unnamed intermittent tributaries to the Neversink, and unnamed ponds and wetlands. According to the New York State Final 2010 Section 303 (d) List and the EPA's TMDL web site, none of the above referenced waterways are listed as impaired or requiring a TMDL. Documentation supporting a determination of permit eligibility with regard to waters having an EPA-established or approved TMDL is included in Appendix H.

6.2 Threatened and Endangered Species and Critical Habitat

Threatened and Endangered Plant Species and Critical Habitat

According to the United States Fish and Wildlife Service (USFWS) there are no plant species of concern on the project site. Similarly, New York Natural Heritage Program (NYNHP) also

indicates no records of plant species of concern. There are no state-designated Critical Environmental Areas in Sullivan County, where the project site is located.

Fisheries Species

Fisheries habitat within the project area occurs in the Neversink River, two ponds and several basins. The numerous streams in the project area are intermittent and do not provide fisheries habitat. The ponds and one of the basins were not observed to support fisheries.

Threatened and Endangered Wildlife Species

According to the USFWS, except for occasional transient individuals, no federally listed or proposed endangered or threatened species under their jurisdiction are known to exist in the project area. In addition, no habitat in the project area is currently designated or proposed "critical habitat" in accordance with the provisions of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). The USFWS stated that no further consultation is required.

The brook floater (*Alasmidonta varicosa*), classified as a species of concern by the USFWS, is found in the Neversink River in the vicinity of the proposed project. The brook floater, also known as the swollen wedge mussel, is listed as threatened by NYNHP.

Additionally, the bald eagle (*Haliaeetus leucocephalis*), listed as threatened by NYNHP is reported as using the Neversink River as a flyway. The bald eagle may perch in trees along the river. No nesting areas were observed or have been reported on the project site.

Based on this information, there will be no impact to federally listed or proposed endangered or threatened wildlife species or critical habitat. The brook floater (*Alasmidonta varicosa*),is classified as a species of concern by the USFWS, is found in the Neversink River in the vicinity of the Project. The brook floater is listed as threatened by the NYSDEC Natural Heritage Program. Impacts to these populations will be avoided. There will be no direct impacts to the river or its banks. Provision of the stormwater management practices will ensure that indirect impacts are also controlled both during construction and operational phases. Restoration efforts along the river bank, such as for the wetland creation areas, and stabilization of areas that are currently eroding to the river, may actually improve conditions. If the designed erosion and sediment controls and stormwater management controls are implemented, and as adjacent habitats will be protected, enhanced and restored, there should be no impacts to the habitat of the brook floater.

Documentation in support of threatened and endangered species and critical habitat permit eligibility is provided in Appendix H.

6.3 Historical and Archaeological Resources

The following due diligence was performed in support of historic resources: a Phase 1A walkover survey of historical and archaeological resources, coordination with The New York State Public Preservation Office (NYSPPO) at the New York State Office of Parks, Recreation

and Historic Preservation (NYSOPRHP), background research conducted at the New York State Archives, the New York State Library, the Sullivan County Museum and the Monticello Public Library; and discussions with a local historian. Based on this information, there are no known historic or archaeological sites within the project area. In addition, there are no potential National Register historic standing structures within the project area.

The Stockbridge-Munsee Cultural Preservation Officer has reviewed these reports and concurs with the findings. The Officer has no concerns with the project proceeding. In addition, the BIA consulted Indian tribes that have known archeological or historical sites in the region (Mohawk, Oneida, Mohican and Delaware tribes) about impacts on sites having potential religious or cultural significance by the various proposed casino developments, including the Casino Project, in August 2003. No concerns were raised as a part of this consultation.

6.4 Plans and Maps

Site Locus Map

The location of the construction site relative to major waters of the U.S on and within the immediate project vicinity is provided on Figure 1 in Appendix A. The location of other water features including wetlands and intermittent streams will be shown on the final erosion and sedimentation control plans prepared for the final SWPPP.

Erosion and Sedimentation Control Plans

Figures 8a and 8b depict general best management practices for project that are anticipated to be implemented during construction. Figures 8c and 8d show intermediate control practices, and Figures 8e and 8f show final control practices. These figures represent a general approach to the implementation of BMPs and show perimeter control measures, temporary sedimentation basins, and areas of vegetation preservation. As the project advances to final design, the SWPPP will be updated to include phased construction sequencing plans and corresponding best management practices to be implemented during each phase. The plans will also show more detailed information including existing and final slopes; direction of storm water flow during construction; sensitive areas to be protected; areas to remain undisturbed; existing vegetated areas; areas of disturbance; locations of major structural and nonstructural controls identified in the SWPPP; location of borrow, stockpile, construction staging, and equipment storage areas; surface waters and wetlands; and points of discharge where storm water discharges surface waters. The final SWPPP will include details of each best management practice proposed and present a construction sequence that identifies appropriate erosion and sediment control practices for each phase.

The final SWPPP will also establish a physical work area boundary for the project. The boundary will be marked by fiber roll or straw wattle, orange polypropolyne fence, silt fence, or other appropriate measure, to protect wetland resource areas and clearly designate a limit of work for the Contractor. The final SWPPP will also discuss the potential for phasing of clearing and grubbing operations in order to reduce the area of disturbance at any one time. In addition, the

plan will include the provision that select disturbed areas be stabilized before other areas are cleared and grubbed, as practicable based on the construction schedule.

Progress Maps.

The CGP requires that as conditions change at the construction site (such as the location of BMPs and potential pollutant sources) the Contractor must update the SWPPP to reflect such changes. The Contractor shall post a full size set of plans on the trailer wall for use as Progress Maps. In addition to tracking the changes associated with the BMPs, the Contractor will indicate and track the location of the following on the Progress Maps:

- Portable toilets
- Material storage areas
- Vehicle and equipment fueling and maintenance areas
- Concrete washout areas
- Off-site material, waste, borrow, or equipment storage areas
- Paint and stucco washouts
- Dumpster or other trash and debris containers
- Spill kits
- Stockpiles
- Any other non-structural non-storm water management BMPs
- Any changes to structural BMPs
- Areas where final stabilization has been accomplished

The Contractor shall also indicate on the Progress Map the extent of all disturbed areas and identify areas that are expected to undergo initial disturbance or significant site work within the next 14 days. If a Progress Map become too full to easily read, it should be dated, folded, and put into the SWPPP in Appendix I for documentation and a new Progress Map should be started.

7.0 General Approach to CGP Compliance

During construction, the Contractor will comply with the measures provided in this SWPPP and conduct construction activities in accordance with the CGP. It is the Contractor's responsibility not to undertake more than that magnitude of work that can be safely and adequately controlled by the methods at their disposal. The Contractor's approach must emphasize preventing erosion before it occurs as opposed to treating sediment-laden storm water runoff.

The final SWPPP plans will include specific best management practices for the project during each phase of construction. The Contractor's approach to controlling storm water runoff from the site may vary; however, they must update this SWPPP to reflect the changes and appropriate corresponding erosion and sedimentation control measures using the Progress Maps and the document any variations on the SWPPP Amendment Log provided in Appendix E.

The use of erosion and sedimentation controls is mandatory and must be employed to minimize impacts to adjacent areas during the construction. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site

impacts. The practices which are required to control storm water pollution during construction must remain functional until disturbed areas have achieved final stabilization. Best management practices are to be installed and maintained in accordance with manufacturer's specifications and good engineering practices.

During all phases, the erosion and sedimentation control BMPs outlined in the following sections must be inspected based on the inspection frequency discussed in Section 10.1.2. In addition, stabilization measures must be instituted on disturbed areas as soon as practicable, but no more than 14 days after construction activity has temporarily or permanently ceased on any portion of the site.

7.1 Erosion and Sedimentation Control Best Management Practices (BMPs)

Construction activities will be phased in order to minimize site disturbance, protect sensitive natural features, and prevent soil erosion and sediment transport. The final SWPP will include a narrative discussing each expected phase of construction and corresponding BMPs and details for each measure. In general, the project sequencing will include initial controls such as perimeter protection, stabilized exits, temporary sediment basins and traps sized in accordance with the CGP, followed by clearing and grubbing. Interim controls during major earth work will include stabilized swales and ditches to divert and convey runoff to the temporary basins and stabilized areas, application of temporary non structural stabilization methods including mulch, hydroseed or erosion control blankets, structural controls associated with utility installation including inlet protection, velocity dissipation devices at outlets and finally the application of permanent stabilization including seeding, landscaping, and paving.

The following section includes the key BMP types which will most likely be used for the project and included in the final SWPPP: site planning and management, erosion controls, sedimentation controls, runoff controls and materials management practices.

7.2 Site Planning and Management

Preservation of Natural Vegetation and Buffer Zones. Natural vegetation and buffer zones are economical, low-maintenance options for reducing erosion and minimizing sedimentation, especially on steep slopes. The preservation of natural vegetation also provides habitat and wildlife corridors along waterways, water bodies, and developed areas while providing a buffer to noise and improving aesthetics. Removal of vegetation will be limited to areas required for construction or operation of the project.

Scheduling and Sequencing. If practicable, construction sequencing should take into account local considerations such as rainfall and seasonal conditions for seed germination to establish temporary or permanent stabilization. The timing of key activities should include avoiding major excavations in anticipation of major rain events, monitoring weather forecasts and stabilizing inactive areas. These proactive measures will reduce BMP costs and minimize maintenance time.

7.3 Erosion Controls

Temporary Stabilization: Per Part 3.1 H. of the CGP, stabilization measures must be initiated as soon as practicable on portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Temporary stabilization refers to a variety of erosion control BMPs that protect exposed soils from the erosive forces of precipitation (raindrop and sheet erosion) and/or prevent the formation of channelized flow (rill, gully and channel erosion). The Contractor must inspect temporarily stabilized areas to assess the effectiveness of temporary stabilization BMPs and replace/repair them as necessary. The following temporary stabilization BMPs may be used for this project:

- Surface Roughening: Soil roughening is an erosion control BMP that involves creating grooves or impressions in exposed soil surfaces with tracked construction equipment (bulldozer, excavator, etc.). Slopes that are not fine graded or smoothed, but left in a roughened condition reduce erosion by decreasing slope length and runoff velocity, increasing infiltration, trapping sediment, and allowing seed to take hold and grow. It is critically important that the impressions be made perpendicular to the slope contours and never parallel to the contour; improper use of this technique can actually accelerate erosion.

- Temporary Seeding: Temporary seeding including hydroseeding is an erosion control BMP that consists of using select varieties of grasses to establish vegetative cover. Temporary seeding utilizes annual species that establish quickly, are not persistent or invasive, but provide long term temporary cover as opposed to the perennial species used in permanent seeding for final stabilization.

- Mulching: Mulching is an erosion control BMP that involves using materials such as wood, wood chips, straw, bark or fibers to protect exposed soils. Mulch must be applied at the appropriate rate and properly anchored using netting, tackifiers or an anchoring tool. Mulch can applied to those disturbed areas as a temporary stabilization measure. Mulching is highly effective, and when installed correctly provides a level of protection comparable to dense vegetative cover. Mulch is also very beneficial for recently planted areas holding seeds, fertilizers, and topsoil in place, preventing birds from eating seeds, retaining moisture, and insulating plant roots against extreme temperatures. Non-hydromulch applications may be used with seed to produce vegetation.

- Erosion Control Blankets: Erosion control blankets or slope stabilization fabric, are erosion control BMPs consisting of natural or synthetic geotextile fabrics formed into long sheets or mats that are rolled out over exposed soils and fastened with stakes, pegs or staples. They are used in areas where high runoff velocity makes traditional mulching ineffective. Blankets are highly effective at stabilizing steep slopes that are 3:1 or greater and can be used to stabilize areas of concentrated flow such as swales.

By-Products of Vegetation Clearing. The clearing of vegetation will result in the generation of wood chips/mulch, stumps, and woody debris. Stumps and woody debris may be used in the freshwater wetland mitigation areas. They shall cover approximately two percent of the surface of these areas. Stumps and woody debris, in excess of those required for the freshwater wetland mitigation areas, may be recycled/converted to wood chips/mulch onsite or disposed of at an approved wood waste recycling facility. Wood chips/mulch generated from clearing operations may be used onsite or elsewhere for stabilization of disturbed surfaces, landscape finishes, or disposed of at a wood waste reuse facility. Stockpiles of products of vegetation clearing may not be located closer than fifty feet to a vegetated wetland, waterway, or waterbody. Stockpiles shall be covered or encircled by sediment control devices. Stockpiles must be removed upon completion of the overall project.

Turf Reinforcement Mats. Turf reinforcement mats allow for the establishment of permanent vegetation in areas not requiring an impervious surface. These non-biodegradable mats trap sediment and provide a permanent vegetation stem and root reinforcement matrix on severe slopes, and high velocity channels.

Bioengineering. The use of natural materials to stabilize soils is generally less costly than structural methods, as well as more compatible with the natural environment. Bioengineering techniques have the ability to improve water quality, provide habitat, require minimal maintenance, and adapt to a changing environment. Mulch generated from tree clearing and grubbing operations may be applied to exposed soils as a temporary stabilization technique.

Armoring. Armoring is used where high velocities and quantities preclude the use of other stabilization practices. The most commonly used methods include riprap, gabions, reinforced concrete, and grid pavers. Armoring will most likely be employed in areas where storm drain runoff is conveyed along steeper slopes.

Flocculation. Typical BMPs, such as detention basins, check dams and perimeter erosion controls alone can be ineffective for removal of colloidal suspension of turbidity from storm water runoff. In cases where proposed temporary or permanent measures are proving ineffective, flocculation may be implemented. Flocculation removes suspended soil and clay from water, prevents colloidal solutions from re-suspending and reduces soil movement on moderate slopes during rain events.

Flocculent, polyacrylamide (PAM), is used as an erosion control measure because of its ability to conveniently stabilize soils and remove fine suspended sediments from storm water. PAM is a long-chain organic polymer developed to clarify drinking water. PAM products reduce erosion

and sedimentation by targeting the smallest soil particles, fine silts, clays and colloidal materials, which are difficult or impossible to control using conventional erosion and sediment control measures. Silt fence and sediment basins only trap particles as small as sands and coarse silts and silts, respectively. PAM also increases infiltration rates in soils by preventing surface sealing.

PAM may be applied by two methods, direct and passive and is available in four media types, powder, powder dissolved in water, emulsion, and gel block. The powder, powder dissolved in water, and emulsion types are applied directly to exposed soil surfaces. The gel blocks are used within a ditch or conveyance system for in situ water treatment above pre-constructed sediment ponds. To optimize performance, site-specific assessments of soil and water will be conducted by the manufacturer in order to select the proper application method and dose. If needed, PAM used at the site will only be in anionic or non-ionic form, no cationic PAM will be used and will only be used in conjunction with other storm water controls. Flocculation agents may be applied through liquid spray, hand spreading, or with the use of a gel bock such as APS Floc Log®. Flocculation agents will be tailored to on site soils.

Depending on soil conditions and the settling rate of suspended solids the Contractor may elect to apply PAM. The Contractor must obtain approval from New York State Department of Environmental Conservation for the use of such application.

Permanent Stabilization: Permanent Stabilization refers to a variety of erosion control BMPs that allow a construction project to achieve "final stabilization." Final stabilization is defined in Appendix A of the CGP as: (a.) a uniform (evenly distributed, without large bare areas) perennial vegetative cover with a density of seventy percent (70%) of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or (b.) equivalent permanent stabilization measures have been employed.

The following permanent stabilization BMPs are typically used on construction sites:

- Concrete Pad/Asphalt Pavement: Used within roadway or parking areas.

- Permanent Seeding: Permanent Seeding consists of using select varieties of grasses and/or other plants to establish vegetative cover. Permanent Seeding utilizes perennial, persistent species that provide dense, long term vegetative cover. The final plans will include seed application rates, seed varieties, planting dates and seedbed preparation specifications for the establishment of uniform perennial vegetative cover.

- Sod: Sod is an erosion control BMP that consists of laying a continuous layer of grass turf over exposed soils and allowing it to take root. Sod provides immediate vegetative cover for critical areas and can stabilize areas that cannot be readily vegetated by seed. Sod can also be used to stabilize and reduce flow velocities in channels or swales that convey concentrated flows.

- Riprap: An erosion control BMP consisting of a layer of appropriately graded stone that protects exposed soils.

7.4 Sedimentation Controls

Silt Fence: Silt fence is a sediment control BMP consisting of a length of geotextile fabric stretched between anchoring posts spaced at regular intervals along the site at low/down-slope areas. The geotextile fabric must be entrenched in the ground between the support posts. Silt fence is effective in treating low velocity sheet flow and is not intended for use in areas of concentrated or channelized flow. Silt fence must be inspected for rips, tears, and gaps between the fence and the ground. Accumulated sediment must be removed from the silt fence when it reaches 50% of the above ground fence height. An adequate reserve of silt fence must be kept on site at all times for emergency and/or routine replacement. Silt fence shall be removed only after exposed soils in the contributing drainage area are stabilized. Silt fence can also be used as an effective perimeter control to contain stockpiles of topsoil or other erodable material. Silt fence shall be used along contours, parallel to the slope and the ends shall be installed in a "J" hook configuration to prevent flowing water from running around the end of the fence.

Fiber Roll: A fiber roll is a temporary structural BMP consisting of straw, coconut husk, rice straw or similar material packed and placed into rolls that are designed to capture sediment and reduce flow velocity. Fiber rolls, often referred to as straw wattles" can be used to reduce slope length, provide inlet protection, and provide perimeter protection. Rolls must be entrenched and staked with overlapping sections.

Sediment Bags/Dewatering. Dewatering must be conducted into sedimentation basins, bags or tanks located in upland areas. Dewatering methods of containment must be maintained on a regular basis to ensure their effectiveness. Specialized treatment of dewatering effluent, including use of baffled settling tanks and flocculants, will be utilized as required to control effluents from deep excavations or operations where high clay content soils are encountered.

Stabilized Construction Exit A stabilized construction exit must be installed at the location where vehicles are expected to enter and/or exit the site in order to prevent the off-site tracking of sediment onto adjacent public roadways. The stabilized construction exit will consist of stone, placed over a layer of geotextile fabric (so as to provide separation from the underlying soil and prevent the stone from being ground down into the soil). The stabilized construction entrance must be wide enough to cover the entire width of the entrance/exit while allow two vehicles to pass comfortably, and it should be flared where it meets the public roadway to accommodate longer construction vehicles. The stabilized construction exit must be long enough to allow mud and sediment to become dislodged from vehicle tires.

Over the course of construction the stabilized construction exit will become filled with accumulated sediment or compacted. The Contractor must inspect the stabilized construction exit and adjacent public roadways for off-site sediment tracking and repair the exit as necessary (remove accumulated sediment and add new stone as necessary). If tracking onto public roadways does occur, the streets in the vicinity of the stabilized construction exit shall be swept immediately. The stabilized construction exits shall not be removed until just prior to paving.

7.5 Runoff Control Measures

Catch Basin Inlet Protection: Inlet protection is any sediment control BMP that prevents sediment-laden runoff from entering the storm water conveyance system via storm drain inlets (i.e. catch basin, storm drain, yard drain, etc.) Inlet protection BMPs typically function by slowing and detaining sediment-laden runoff and allowing sediment to settle out of suspension. The Contractor must inspect inlet protection practices and repair them as necessary including removing accumulated sediment. The Contractor shall not allow accumulated sediment to block storm drain inlets, which may cause storm water runoff to bypass the storm water conveyance system and create problems down-slope including additional erosion or flooding. Typical inlet protection methods include the following:

- Silt Bags (Geotextile Barriers): Porous, woven fabric placed inside a catch basin inlet to create a shield against sediment while allowing water to flow into the drain. This method includes silt sacks, filter fabric, a ring of silt fence, etc.

- Gravel Drop (Gravel/Stone) Barriers: Gravel/stone can be used to slowing and detaining sediment-laden runoff and allow sediment to settle out of suspension. There are various effective configurations for this method, but it is important to prevent the gravel used from being washed into the storm water conveyance system.

- Excavations: A small excavation around the perimeter of the storm drain inlet creates a small pool that allows sediment to settle out of suspension.

Temporary Sediment Basin(s): Per Section 3.1 A of the CGP temporary sediment basins are required for drainage locations that serve an area with ten (10) or more acres disturbed at one time. The basin(s) must be sized for the 2-year 24 hour storm event (at minimum). Temporary sediment basins are a sediment control BMP that consist of an excavated or natural depression that detains/retains storm water runoff allowing sediments to settle out of suspension prior to discharge via a suitably stabilized outlet. They also provide an opportunity for storm water infiltration. The temporary sediment basin's side-slopes and bottom must be appropriately stabilized prior to directing runoff to them. Accumulated sediment must be removed when the design capacity is reduced by 50%. Effective implementation of erosion control BMPs on exposed soils located upslope within the contributing drainage area will significantly reduce maintenance requirements. Properly constructed and maintained temporary sediment basins are very effective at treating sediment-laden storm water runoff and may be converted into permanent, post-construction storm water treatment structures during later project phases. For this project, it is expected that multiple temporary basins will be required and constructed.

Temporary Diversion Ditches or Swales: Temporary diversion ditches or swales are a runoff control BMP consisting of a ditch or excavation installed as a means of conveying and diverting storm water runoff to stabilized areas including temporary sediment basins (or other sediment control BMPs) while soil disturbing construction activities are ongoing. The temporary drainage swale's side-slopes and bottom must be appropriately stabilized prior to directing runoff to them. The temporary drainage swales will include stone check dams.

Stone Check Dams: Stone check dams are runoff control BMPs consisting of a temporary structure installed in a channelized area such as temporary drainage swales or ditches, perpendicular to the direction of concentrated flow. Check dams slow the velocity of storm water flows, prevent channel scour and allow for the settling of suspended sediment as well as infiltration. Check dams require routine maintenance including removal of accumulated sediment and periodic reshaping to maintain effectiveness.

Earth Dikes and Level Spreaders. Earth dikes are a runoff control BMP constructed to direct storm water towards stabilized areas and/or storm water treatment structures, as well as to divert upstream flow from entering disturbed areas. Level spreaders will be used to dissipate concentrated flows and to diffuse flows to stabilized areas.

Pipe Slope Drain: A pipe slope drain is a means to convey concentrated runoff from the top to the bottom of a slope without causing erosion. The drain usually consists of flexible tubing or conduit and can be used where concentrated runoff may cause gullies or channel erosion. For this project, pipe slope drains may be used to convey runoff from the top of slope into a sedimentation basin or temporary drainage swale.

Rip Rap Outlet Stabilization and Velocity Dissipation. Outlet stabilization and velocity dissipation measures are installed at the outlets of drainage conveyances such as culverts, swales, or diversions, where the velocity of the discharge may result in erosion at the outlet or receiving channel or development of a plunge pool. Outlet stabilization/velocity dissipation measures include the placement of riprap or construction of a concrete dissipation structure at the discharge location. Outlet stabilization/velocity dissipaters will be installed in conjunction with the point source discharges.

7.6 Good Housekeeping and Materials Management

The Contractor shall employ the following good house keeping and materials management practices to manage potential pollutants during construction.

Construction Materials Stockpiling. Stockpiles of soil or other construction materials may not be located closer than fifty (50) feet to a vegetated wetland, waterway, or waterbody. Stockpiles of erodable material, including any topsoil salvaged during construction, must be surrounded by a perimeter sediment control BMP (such as silt fence or fiber roll) to prevent storm water runoff from being contaminated by eroded sediment. Stockpiles of erodable material must be stabilized utilizing a temporary stabilization technique if they remain inactive for more than fourteen (14) days. Stockpiles must be removed upon completion of the overall project. Stockpile locations must be shown on the Progress Map.

Construction Debris. The Contractor will be responsible for disposing of all waste materials in accordance with state and federal law. No on-site waste disposal will occur. An adequate supply of dumpsters shall be provided and the Contractor shall take measures to keep waste within the dumpsters from being intermixed with storm water, including closing of the dumpsters and installation of drain plugs. The Contractor shall also provide an adequate number of waste

barrels for worker-generated trash. The location of dumpsters must be shown on the Progress Map.

Snow/Ice Management. A Snow Management Plan (SMP) that addresses snow removal operations during the construction phase will be prepared. The SMP shall identify the on-site or off-site locations to where snow is to be plowed. In preparing, the Contractor must incorporate measures to reduce potential storm water contamination from sanding and salting operations, such as reducing application rates in critical areas.

Off-site Vehicular Tracking of Sediments. The Contractor will be responsible to ensure that no significant amount of vehicular tracking of sediments is allowed off the site or out of the immediate construction area. Inlet protection will be installed around or within catchbasins along haul routes outside of the excavation area. The Contractor shall remove debris/soil from side boards and cover the contents of all trucks leaving the construction site. Trucks traveling on public streets that are delivering fill materials to a construction area must also be covered. Sweeping and cleaning of surfaces, with wet-vacuum type street sweepers, beyond the limits of the project caused by vehicular tracking of materials during the various phases of the work will be the Contractor's responsibility. The Contractor will be responsible for the installation and maintenance of stabilized construction exits where material-hauling vehicles enter public streets or out of the immediate construction area.

If necessary to control tracking, the Contractor will construct a wheel wash station to prevent tracking onto the public way. If used, wheel wash stations must not contain detergents and must be installed as close to the egress as possible and a crushed stone apron must extend the wheel wash station to the nearest road. Sediment and petroleum products must be removed from wash water using a sedimentation or filter system. The wheel wash sedimentation system should include a swale with stone check dams between the sump and sedimentation tank to pre-treat the runoff entering the swale/sump. All components of the wheel wash system must be inspected and cleaned out as often as necessary.

Secondary Containment. Petroleum products will be stored in tightly sealed containers that are clearly labeled. The Contractor will inspect the staging areas containing petroleum products during regular inspections. The Contractor shall provide secondary containment for vessels of petroleum products, including fuel and hydraulic fluids. Containment may consist of a metal container, bermed areas or excavated pits. Capacity for secondary containment shall be 110% of the volume of the largest container in the storage area.

If the maximum total aggregate above ground storage capacity exceeds 1,320 gallons (which includes both bulk and equipment operational storage volumes in fuel tanks 55 gallons and greater), it is subject to the EPA's Spill Prevention Control and Countermeasures (SPCC) rules if a spill could discharge oil to U.S. navigable waters. If an SPCC Plan is required, it must be prepared and implemented by the Contractor. If total aggregate above ground storage capacity is equal to or less than 10,000 gallons, the Contractor may prepare a self-certified SPCC Plan. Information is further provided on the EPA's "SPCC Rule" web site.

Sanitary Waste. The Contractor will arrange for all sanitary waste to be collected from portable toilet units by a licensed sanitary waste management contractor, or as required by local regulation. Pickups must be done on a regular basis. No burial or discharge of the waste may be conducted on-site. The location of portable sanitary units must be shown on the Progress Map.

Fertilizers. Fertilizers may be used on-site where temporary or permanent vegetation will be established and will be applied in accordance the manufacturers specifications, or as detailed on the plans, in the project specifications, or as prescribed in permit conditions.

Cementaceous Waste. The following pollution prevention practices will be employed in conjunction with cementaceous waste:

- Concrete curing: the amount of water used for curing concrete will be minimized as much as possible while properly completing the task. The run off will be captured and reused if practicable.

- Concrete washout areas: Concrete trucks will wash out only in designated areas. Concrete washout areas will consist of a prefabricated or site-built impermeable containment area sized to hold concrete wastes and wash water including one foot (1') of freeboard. Concrete washout areas will be used to contain concrete and liquids when the chutes of concrete mixers and hoppers of concrete pumps are rinsed out after delivery. The washout facilities consolidate solids for easier disposal and prevent runoff of liquids. Chutes will extend into the pit/basin and any material missing the pit/basin will be placed in the pit/basin to prevent tracking. The concrete washout area must be located in an area where its likelihood of contributing to storm water discharges is negligible. Washout areas should be properly signed and onsite personnel instructed in their proper use. The hardened residue from the concrete wash out areas may be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used onsite as deemed appropriate by the Contractor. The Contractor must track the concrete washout locations on the Progress Map if they are moved or if additional concrete washout areas need to be constructed. It is also acceptable for waste concrete to be poured into forms to make riprap or other useful concrete products.

- Tie down/tie back/jet grouting: Grout must be captured when and where possible and segregated from any drainage pathway that receives dewatering or runoff flow. Efforts should be made to minimize water contacting un-captured grout (e.g., reduce volume of rinse water, repair leaks, etc.). Water that contacts grout-like material shall be pre-treated before being discharged to properly sized sedimentation tanks. One possible method for pre-treatment is to direct runoff through series of crushed stone check dams in a long swale to a sump-pump set in a slotted pipe surrounded by crushed stone that also pre-filters water before discharging to a sedimentation tank.

- Diluted acids will be used to adjust pH prior to discharge. The concentration of acid to be used must be included in the final SWPPP. The addition of concentrated acids to reduce pH is not allowed.

Dust Control: Dust control BMPs are various means and methods of preventing soil erosion by wind. During all phases of the project, generation of dust must be minimized to prevent air and water pollution as well as minimize risks to human health. Earthmoving activities are the primary source of dust generation during construction, but traffic on unstabilized access roads and sediment transport by wind blowing across exposed soil surfaces can also be contributing factors. The most effective dust control BMPs for preventing wind erosion involve stabilizing (temporary or permanent) exposed soils. However, where soil stabilization is not practical, techniques that increase soil moisture and encourage the formation of soil clods or reduce wind velocity at the soil surface are also effective. The following dust control BMPs are typically used on construction sites:

- Watering/Irrigation: Sprinkling the ground surface with water until it is moist.
- Soil Stabilization: Vegetative cover, mulch, riprap or any method that covers the soil surface reduces the potential for soil particles to become airborne.
- Wind Breaks: Wind breaks are barriers (either natural or constructed) that reduce wind velocity across exposed soil surfaces and reduces the potential for soil particles become airborne. Wind breaks can be trees or shrubs left in place during site clearing or constructed barriers such as a wind fence.
- Soil Roughening: Deep tillage in large areas of exposed soil brings soil clods to the surface preventing soil particles from becoming airborne.
- Spray-on Chemical Soil Treatments: When considering chemical application to suppress dust, determine whether the chemical is biodegradable or water-soluble and what effect its application could have on the surrounding environment, including waterbodies and wildlife.

7.7 Material Handling and Waste Management

The materials or substances listed below are expected to be present onsite during construction activities. They represent potential pollutants sources, other than sediment, to storm water runoff:

- Asphalt
- Detergents
- Cement
- Concrete and associated waste/products/additives
- Paints/Solvents
- Miscellaneous chemical additives
- Acids
- Paper products
- Petroleum products
- Rubber/plastic products
- Sanitary wastes
- Solid construction wastes
- Soil stabilization additives
- Cleaning solvents

- Pesticides
- Fertilizers

7.7.1 Material Handling

The above listed construction materials are expected to be handled on site and procedures for the storage of these materials to minimize exposure to stormwater are as follows:

- All materials stored on-site must be stored in a neat, orderly manner in their appropriate containers. Materials that are hazardous or toxic such as paints, solvents, pesticides, fuels and oils should be stored under a roof or other enclosure if possible. Where cover is not available, all hazardous or toxic materials should be stored in a location with secondary containment.
- Materials will be kept in their original containers with the original manufacturer's label.
- Asphalt substances used on-site will be applied according to manufacturer's recommendations.
- Petroleum products will be stored in tightly sealed containers that are clearly labeled. The Contractor will inspect the staging areas as part of the regularly scheduled inspections.

The following measures will be implemented to prevent the discharge of solid materials to waters of the U.S.:

- Manufacturer's recommendations for proper use and disposal will be followed.
- Contractor will perform inspections based on the frequency selected for the project to ensure the proper storage, use, and disposal of materials.
- Contractor will arrange for all sanitary waste to be collected from portable toilet units by a licensed sanitary waste management operator, or as required by local regulation. Pickups must be done on a regular basis. No burial or discharge of the sanitary waste may be conducted on-site.
- Contractor will be responsible for the off-site removal and disposal of all construction related debris in accordance with state and federal law. No on-site waste disposal will occur. Where the use of dumpsters is proposed, the Contractor must determine and apply specific measures to keep waste within the dumpsters from being intermixed with storm water, including closing the dumpsters and installing drain plugs.

7.8 Spill Prevention and Control Plan

The Contractor will be responsible for preventing spills in accordance with applicable federal, state, and local regulations and will identify an appropriately trained site employee involved with day-to-day site operations to be the spill prevention and cleanup coordinator. The name(s) of responsible spill personnel will be posted in the material storage area(s) and in the on-site office. Each employee will be instructed that spills are to be reported to the spill prevention and cleanup coordinator.

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and response:

7.9 Equipment/Vehicle Fueling and Maintenance Practices

All construction vehicles and equipment should be inspected daily for leaks, equipment damage, and other service problems. The maintenance location will be under cover and include secondary containment. Drip pans, drip cloths, or absorbent pads will be used when replacing spent fluids. The location of the equipment maintenance area must be shown on the Progress Map.

7.10 Spill Control Equipment

Spill control/containment equipment will be kept locally in the area of construction. Materials and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include but not be limited to absorbent booms or mats, brooms, dust pans, mops, rags, gloves, goggles, sand and plastic and metal trash containers specifically for this purpose. It is the responsibility of the Contractor to ensure the inventory will be readily accessible and maintained.

7.11 Notification

Workers will be directed to inform the on-site supervisor in the event of a spill or leak. The supervisor will assess the incident and initiate containment procedures. Workers should avoid direct contact with the spilled material during containment procedures. Notification of a spill will be to a certified cleanup operator if deemed necessary. Emergency contact phone numbers are provided in Appendix F. The specific clean-up operator to be used must be identified by the Contractor and listed on the Emergency Contact Form.

7.12 Spill Containment and Clean-up Measures

Spills will be contained with granular sorbent materials, sand, sorbent pads, booms, or all of the above to prevent spreading. Catch basins will be plugged and drainage channels should be protected from the spill. Manholes will not be entered unless personnel are trained in confined space entry and have the appropriate safety equipment and backup personnel. Spill clean-up should be completed by trained certified clean-up operators. Manufacturer's recommended methods for spill cleanup will be maintained and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.

7.13 Hazardous Materials Spill Report

A spill report must be prepared by the Contractor following each occurrence. The spill report must present a description of the release, including quantity and type of material, date of the release, circumstances leading to the release, location of spill, response actions and personnel, documentation of notifications, and corrective measures implemented to prevent reoccurrence. A Reportable Quantity Release Form is included in Appendix F.

The NPDES CGP does not relieve the Contractor of the reporting requirements 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 relating to spills or other releases of oils or hazardous substances. Where a release containing hazardous substance in an amount equal to or in excess of a reporting quantity established under the federal regulations has occurred, the Contractor is required to comply with the requirement of the aforementioned regulations. Spills of oil or hazardous material (OHM) will be reported to the National Response Center (see Emergency Contacts in Appendix F) as appropriate, if the reportable quantity is exceeded. The Contractor must notify the appropriate state authorities according to state regulations and requirements. Contact numbers are provided in Appendix F.

8.0 Allowable Non-Storm Water Discharges

Part 1.3 B. of the CGP allows for the following non-storm water discharges as long as best management practices are employed in conjunction with the discharge:

- Discharges from fire-fighting activities;
- Fire hydrant flushings;
- Waters used to wash vehicles where detergents are not used;
- Water used to control dust in accordance with Part 3.1.B;
- Potable water including uncontaminated water line flushings;
- Routine external building wash down that does not use detergents;
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
- Uncontaminated air conditioning or compressor condensate;
- Uncontaminated ground water or spring water;

- Foundation or footing drains where flows are not contaminated with process materials such as solvents;
- Uncontaminated excavation dewatering;
- Landscape irrigation.

These types of discharges will be allowed under the condition that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The control measures which have been outlined previously in this SWPPP will be followed to ensure that no contamination of these non-storm water discharges takes place or that these discharges do not result in a discharge of pollutants to waters of the US.

9.0 Post-Construction Best Management Practices

Post-construction storm water management measures to be constructed include: catchbasins, area drains and drop inlets, swales, water quality basins, infiltration basins, and water quality structures. The entire stormwater management system, including piping, catchbasins, and manholes will be cleaned prior to final site acceptance. Sediment and debris will be removed and disposed of in accordance with local, state, and federal guidelines and regulations.

These measures will meet or exceed the NYSDEC standards and guidelines. As a result, surface and groundwater resources on and adjacent to the site will be protected. An important design feature of the development plan is that there will be no direct discharges of stormwater from developed area on the site to the groundwater or surface water (including wetland resource areas) without first undergoing water quality treatment. Also, the increased amount of area impervious to infiltration will be mitigated by creation of new on-site infiltration areas.

The final SWPPP will include additional detail and specifications pertaining to the Water Quantity and Quality Control Plan. The Proposed Storm Water Management Overview showing conceptual post development storm water features is provided on Figure 7 in Appendix A.

10.0 Inspections and Maintenance

10.1 Inspections

10.1.1 Inspection Personnel

The Contractor shall be responsible for providing "Qualified Personnel" to conduct all inspections required by the CGP. "Qualified Personnel" is defined as a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the construction activity. Inspectors must also be knowledgeable in the control of hazardous materials as they may be stored, transported and used during construction.

10.1.2 Inspection Frequency and Procedures

Inspections of all non-structural and structural best management practices proposed and implemented as part of the SWPPP must be conducted at least once every seven (7) calendar days OR at least once every 14 calendar days AND within 24 hours of the end of a storm event of 0.5 inches or greater.

In addition, an inspection report must be prepared if any deficiencies are noted during the daily inspections and noted on the Corrective Action Log provided in Appendix E. Inspections should also be performed prior to storm events anticipated to result in substantial storm water runoff. These inspections will include areas used for storage of materials that are exposed to rainfall, structural control measures, locations where vehicles enter or exit the site, and all disturbed areas. Written records of these inspections must be kept on file for the duration of the project and be available for review. Completed forms must be maintained in Appendix I.

In accordance with Part 4 B. of the CGP, the frequency of inspections may be reduced or the requirement of inspections may be waived if the listed conditions are met. In general, these conditions apply to winter conditions and those instances where the entire site is temporarily stabilized and land disturbance activities have been suspended. The site must meet the conditions set forth in Part 4 (B) or (C) of the CGP in order to qualify for these types of inspections.

A blank site inspection report form is provided in Appendix E. The Inspector will record the following information in the report:

1. The location(s) of discharges of sediment or other pollutants from the site;
2. Location (s) of BMPs that need to be maintained;
3. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
4. Location(s) where additional BMPs are needed that did not exist at the time of the inspection;
5. Corrective action required including implementation dates – use Corrective Action Log
6. Dates when grading activities occur- use Grading and Stabilization Activities Log
7. Dates when construction activities temporarily or permanently cease on a portion of the site; - use Grading and Stabilization Activities Log and
8. Dates when stabilization measures are initiated- Grading and Stabilization Activities Log

The Contractor must sign the inspection certification provided on page 4 of 5 of every inspection report. If the site is in compliance, then the Contractor must sign the compliance certification statement provided on page 5 of 5 in addition to the certification on page 4.

Scope of Inspections

The Contractor must inspect the following during scheduled inspections to determine if the site is in compliance:

- All disturbed areas
- Areas used for storage of materials that are exposed to precipitation
- Stormwater conveyance system for evidence of or potential for pollutants entering the system
- All BMP's installed on the site
- Discharge locations must be observed to determine if erosion control measures are effective in preventing significant impacts to waters of the US
- Locations where vehicles enter or exit the site for evidence of off – site tracking.

10.2 Maintenance of Controls

The following maintenance practices will be used by the Contractor to maintain erosion and sediment controls:

1. If site inspections identify BMPs that are not operating effectively, maintenance must be performed as soon as possible and before the next storm event whenever practicable to maintain the continued effectiveness of the controls; and

2. If existing BMPs need to be modified or if additional BMPs are necessary for any reason, implementation must be completed before the next storm event whenever practicable. If implementation before the next storm event is impractical, alternative BMPs must be implemented as soon as possible.

10.3 Corrective Action Log

The Contractor must maintain a log of all corrective actions performed as a result of daily inspections or maintenance activities. A Corrective Action Log is provided in Appendix E.

11.0 Record Keeping, Modifications, Training and Postings

11.1 Record Keeping

The following is a list of records which the Contractor must maintain at the project site and made available for inspectors to review:

- Completed Inspection Reports (Appendix I).
- A copy of the Construction General Permit (Appendix B).
- Signed and certified NOI (Appendix D).
- A copy of the letter from the EPA acknowledging receipt of the NOI receipt (Appendix D).
- A copy of the Notice of Coverage from the EPA (Appendix D).
- Permit eligibility documentation pertaining to TMDLs and Endangered Species (Appendix H)

Copies of the SWPPP and all reports required by the CGP, and records of all data used to complete the Notice of Intent to be covered by this permit, must be retained by the Operators for a period of at least three (3) years from the date that the site achieves final stabilization.

11.2 Modifying the SWPPP

This SWPPP must be modified or amended to:

1. Reflect modifications to stormwater control measures made in response to a change in design, construction, operation or maintenance at the site which could have a significant effect on the discharge of pollutants to Waters of the US that has not been previously identified in the SWPPP;

2. If, during inspections or investigations by site staff or by locate, state, tribal or federal officials it is determined that existing stormwater controls are ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site; and

3. Based on the results of an inspection, as necessary to properly document additional or modified BMPs designed to correct problems identified. Modifications to the SWPPP must be completed within seven (7) calendar days following the inspection.

All modifications to the SWPPP must be recorded on the SWPPP Amendment Log found in Appendix E and retained in Appendix I, Completed SWPPP Amendment Logs.

11.3 Training

Training sessions must be provided by the Contractor for all construction personnel. Training shall be held every thirty (30) days. The training will review specific BMPs used in the work area as well as reporting and response measures that may required by either construction personnel and/or inspectors to implement the SWPPP. A Training Log including dates, attendees, and a selection of topics which may be covered is provided in Appendix E. Training topics include:

- Sediment Control Measures
- Erosion Control Measures
- Runoff Control Measures
- Good Housekeeping/Materials Management Measures
- Sediment Tracking
- Dust Control
- Soil Stabilization

11.4 Required Postings

A construction site notice must be posted at the entrance to the project site and must be visible to the public. The posting must include a copy of the Construction Site Notice form provided in Appendix G, copies of the Notice of Intents filed for the project and copies of the EPA Notice of Coverage or Acknowledgement Letter provided in Appendix D.

12.0 Final Stabilization and Notice of Termination

12.1 Final Stabilization Criteria

Final stabilization is defined in Appendix A of the CGP as: (a.) a uniform (evenly distributed, without large bare areas) perennial vegetative cover with a density of seventy percent (70%) of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or (b.) equivalent permanent stabilization measures (such as rip rap, gabions or geotextiles) have been employed.

12.2 Notice of Termination Filing

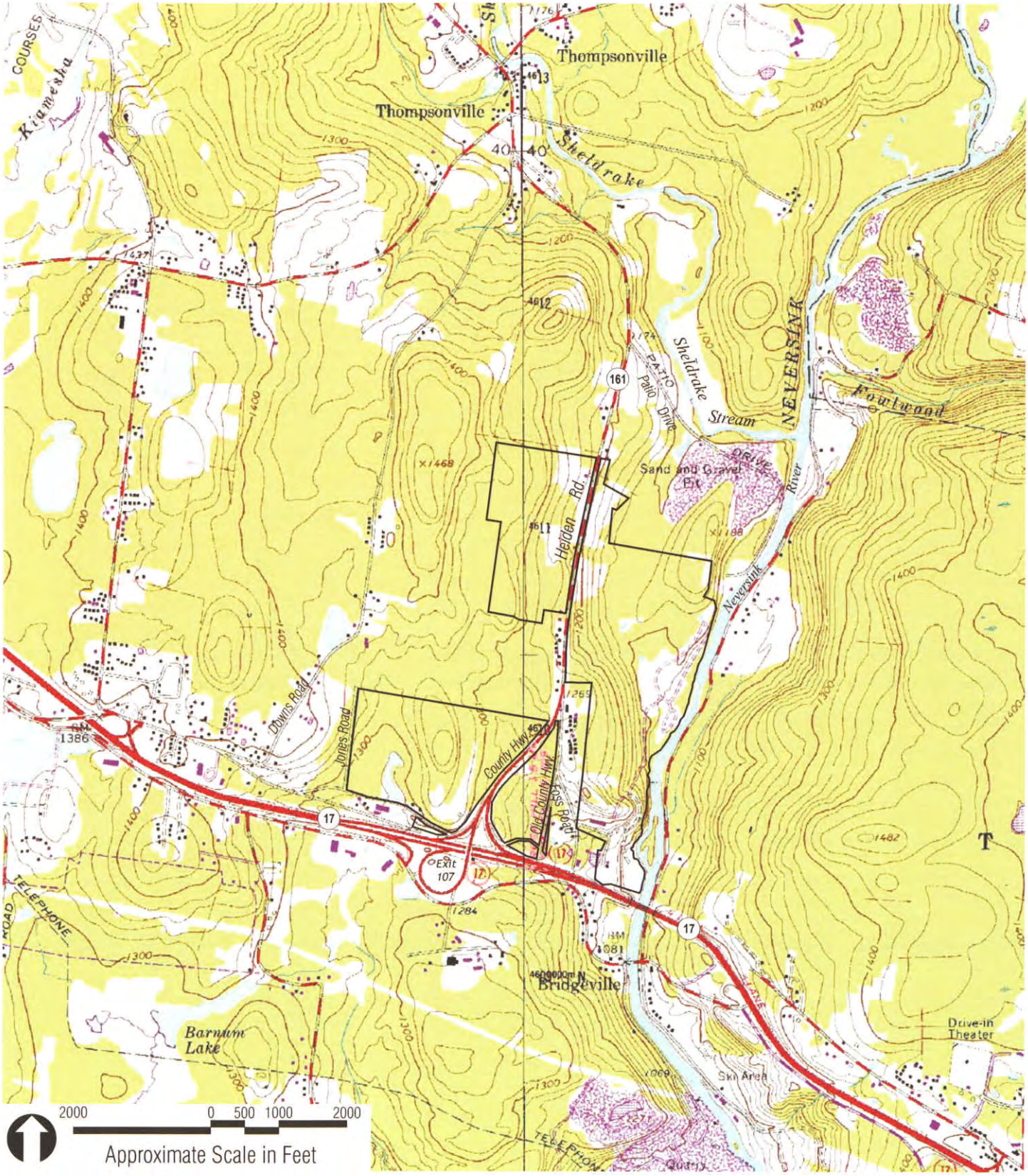
Within 30 days of achieving final stabilization on all portions of the site for which the Operator was responsible, all Operators must file a Notice of Termination with the EPA.

A blank NOT has been provided in Appendix D. However, before terminating permit coverage, the Contractor must ensure that the following items have been accomplished:

- Remove any construction debris and trash
- Remove all temporary BMPs. Remove any residual sediment as needed. Seed and mulch any small bare spots that may result from removing the BMP. Some BMPs that will decompose, including some fiber rolls and blankets, may be left in place.
- Check areas where erosion-control blanket or matting was installed. Cut away and remove all loose, exposed material, especially in areas where walking or mowing will occur. Reseed all bare soil areas.
- Repair any remaining signs of erosion
- Inspect storm drain system and any permanent sedimentation/detention basins and clean accumulated sediment or debris
- Ensure that post-construction BMPs are in place and operational.
- Check all drainage conveyances and outlets to ensure they were installed correctly and are operational. Inspect inlet areas to ensure complete stabilization and remove any brush or debris that could clog inlets. Ensure banks and ditch bottoms are well vegetated. Reseed bare areas and replace rock that has become dislodged.
- Seed and mulch or otherwise stabilize any areas where runoff flows might converge or high velocity flows are expected.
- Ensure subcontractors have repaired their work areas before final closeout.

Appendix A

Figure 1 USGS Site Location Map
Figure 2 Proposed Site Plan
Figure 3 Site Features
Figure 4 Existing Drainage Areas
Figure 5 Proposed Drainage Areas
Figure 6 Soils Map
Figure 7 Proposed Storm Water Management Overview
Figures 8A – 8F Preliminary Control Practices



Date: April 3, 2001

Source: USGS Topographic Maps
Woodbridge, NY
Map Printed, 1966; Map Revised, 1988
Monticello, NY
Map Printed, 1966; Map Revised, 1988

NOTE: Contour Interval = 20 feet

Stockbridge-Munsee Casino
Thompson, New York

Site Location

Figure 1

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

EDAW

Proposed Site Plan

Figure 2

Fig 3-1_7419_site_features.cdr

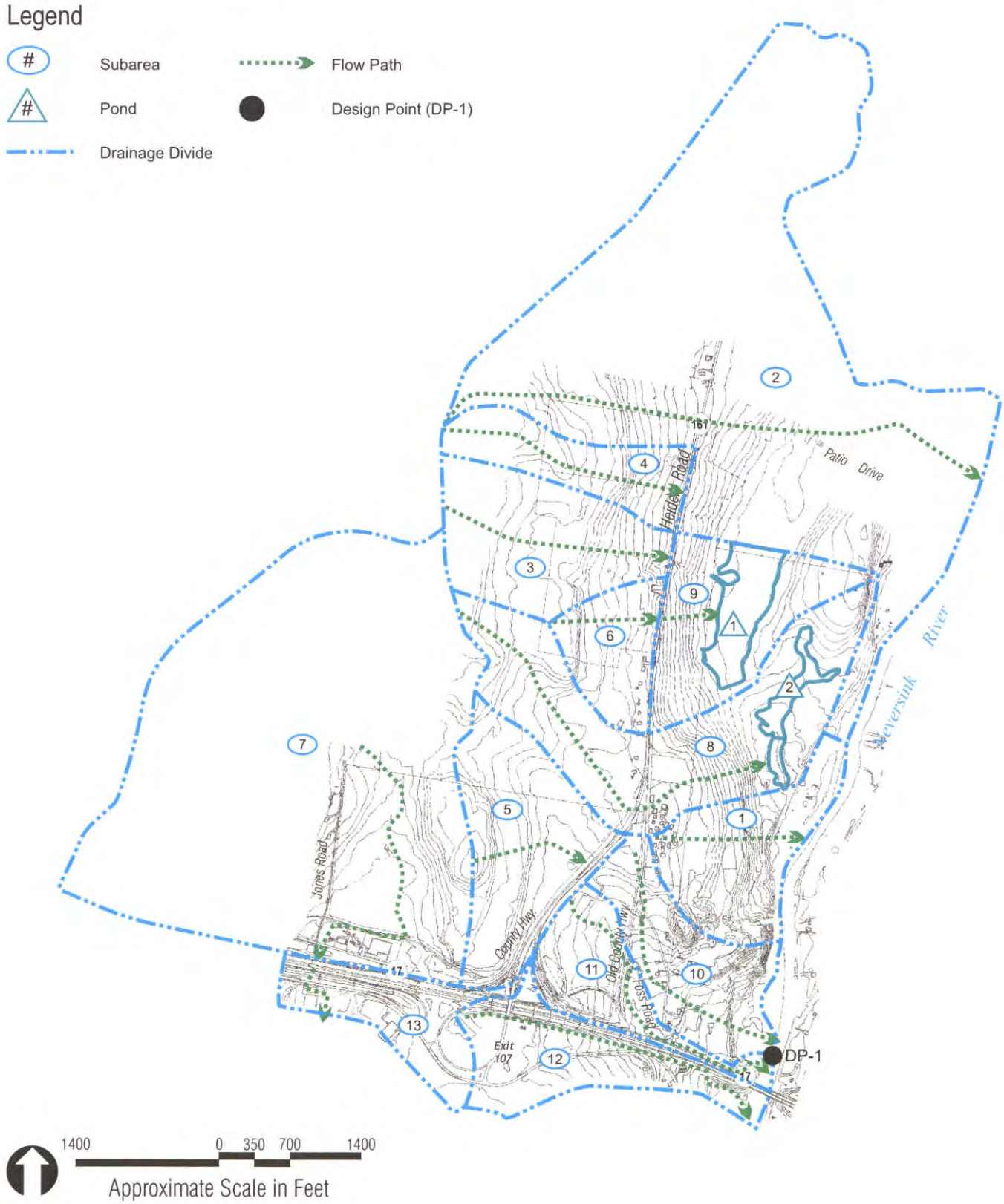
Source: NY State GIS
Date of Photo: 1997 and 1994

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Site Features

Figure 3



NOTE: Contour Interval = 10 feet

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Tribal Lands and Roadways
Existing Drainage Areas

Figure 4

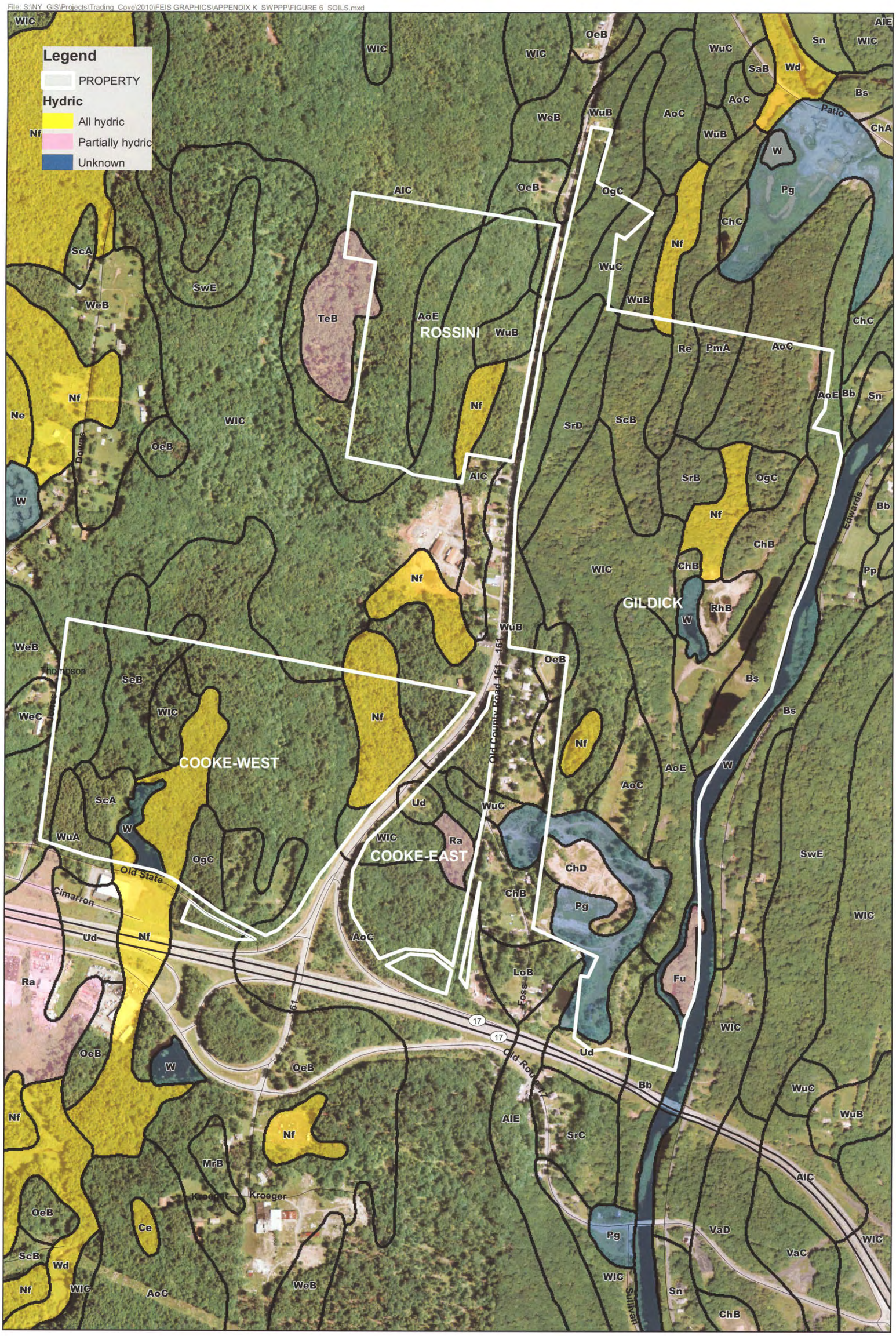
NOTE: Contour Interval = 10 feet

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Proposed Drainage Areas Figure 5

File: S:\NY_GIS\Projects\Trading_Cove\2010\FEIS GRAPHICS\APPENDIX K_SWPPP\FIGURE 6_SOILS.mxd



N

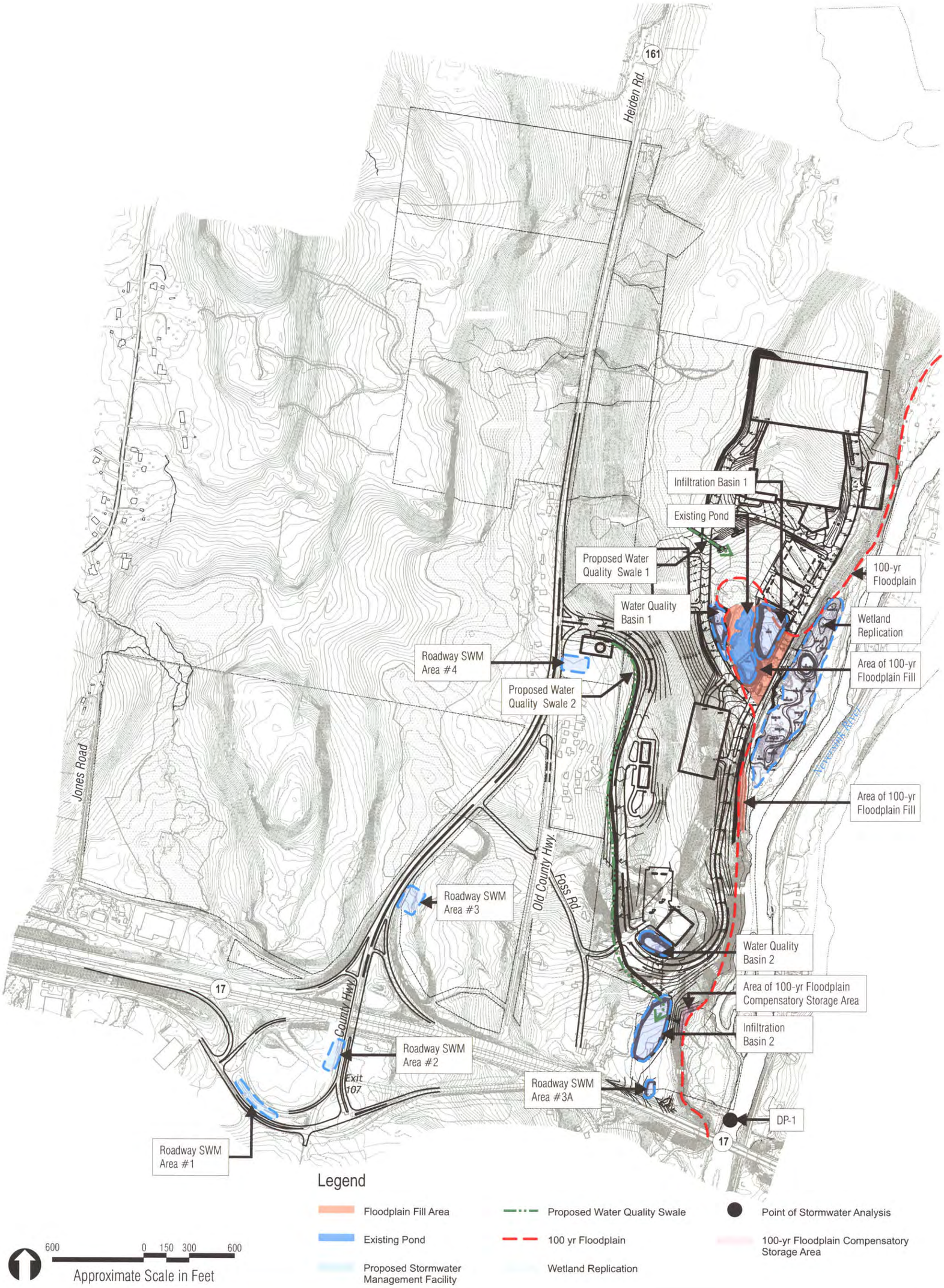
Feet
0 300 600

1 inch = 600 feet

Notes:
1. Soil Information from Survey Area Ver. 8 2/05/2010
2. Basemap 2009 USDA Airphoto

SOILS

Figure 6



TETRA TECH

Stockbridge-Munsee Casino
Thompson, New York

Proposed Stormwater Management Plan - Overview

Figure 7

Legend

- Existing Wetlands
- Existing Ponds
- Existing Basins
- Existing Waterways
- Sediment Basin
- Preserving Natural Vegetation
- Sediment Fence
- Construction Entrance
- CRS Construction Road Stabilization
- PD Perimeter Dike or Swale

240 0 60 120 240

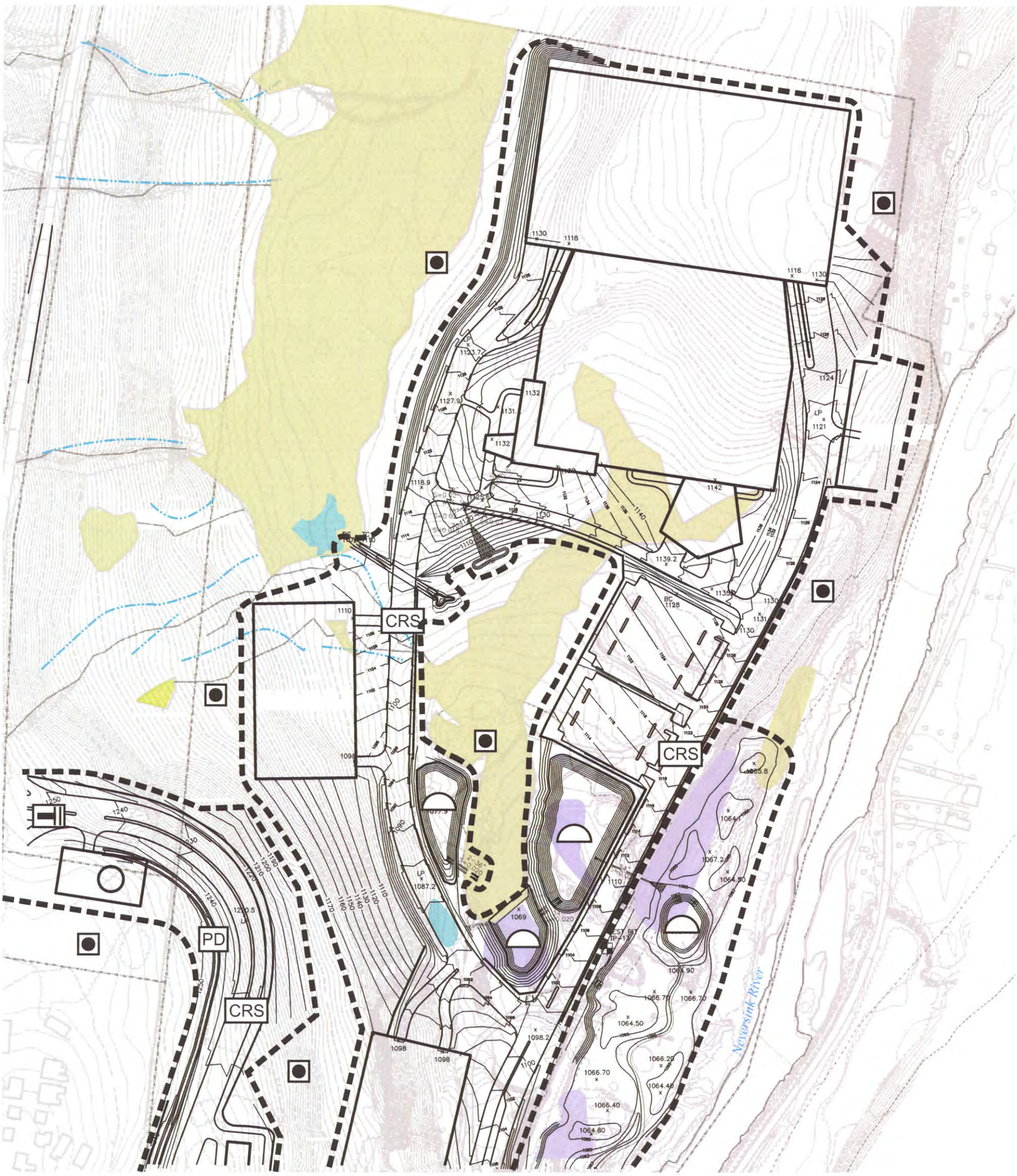
Approximate Scale in Feet

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Preliminary SWPPP
Initial Control Practices

Figure 8A



Legend

- Existing Wetlands
- Existing Ponds
- Existing Basins
- Existing Waterways
- Sediment Basin
- Preserving Natural Vegetation
- Sediment Fence
- Construction Entrance
- CRS Construction Road Stabilization
- PD Perimeter Dike or Swale

240 0 60 120 240

Approximate Scale in Feet

TETRA TECH

Stockbridge-Munsee Casino
Thompson, New York

Preliminary SWPPP
Initial Control Practices

Figure 8B

Legend

- Existing Wetlands
- Existing Ponds
- Existing Basins
- Existing Waterways
- Sediment Basin
- Rock Outlet Protection
- Sediment Fence
- BC Bioengineering Controls
- Check Dam
- TS Temporary Seeding

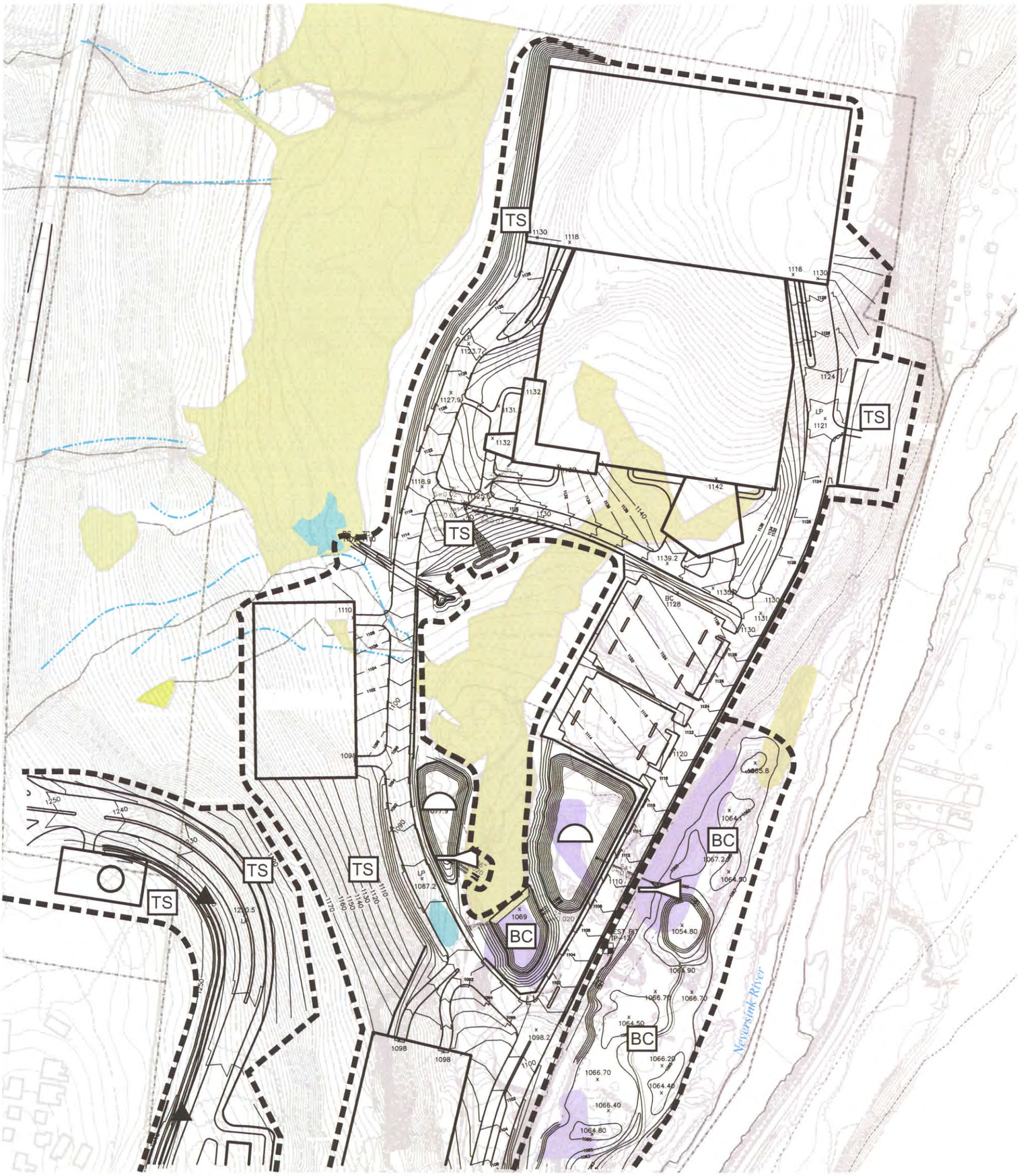
240 0 60 120 240

Approximate Scale in Feet

TETRA TECH

Stockbridge-Munsee Casino
Thompson, New York

Preliminary SWPPP
Intermediate Control Practices Figure 8C



Legend

- Existing Wetlands
- Existing Ponds
- Existing Basins
- Existing Waterways
- Sediment Basin
- Rock Outlet Protection
- Sediment Fence
- BC Bioengineering Controls
- Check Dam
- TS Temporary Seeding

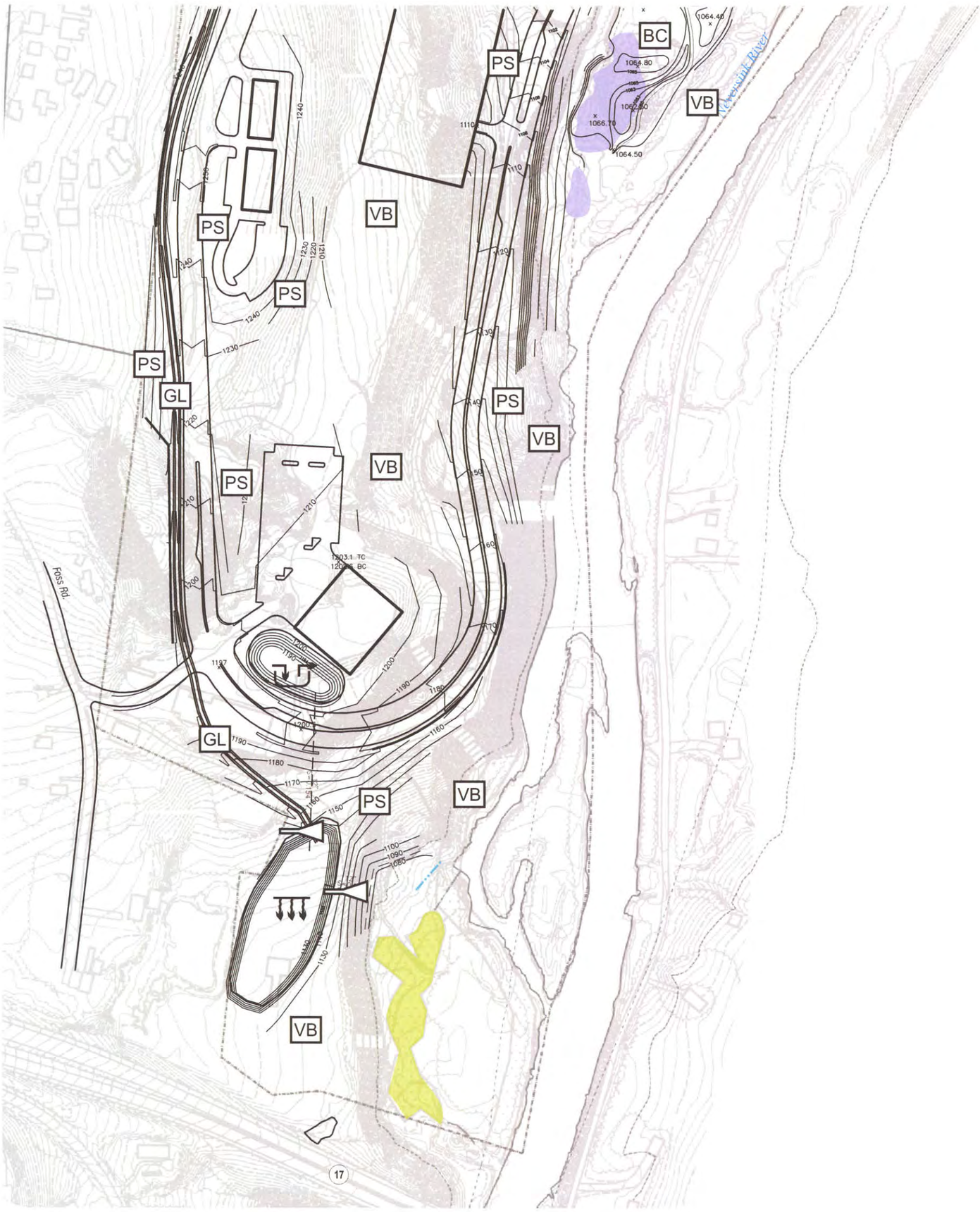
240 0 60 120 240

Approximate Scale in Feet

TETRA TECH

Stockbridge-Munsee Casino
Thompson, New York

Preliminary SWPPP
Intermediate Control Practices Figure 8D



Legend

- Existing Wetlands
- Existing Ponds
- Existing Basins
- Existing Waterways
- Water Quality Basin
- Infiltration Basin
- VB Vegetated Buffer
- GL Grass Lined Swale
- PS Permanent Seeding
- BC Bioengineering Controls
- Rock Outlet Protection

240 0 60 120 240

Approximate Scale in Feet

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Preliminary SWPPP
Final Control Practices

Figure 8E

Legend

- Existing Wetlands
- Existing Ponds
- Existing Basins
- Existing Waterways
- Water Quality Basin
- Infiltration Basin
- VB Vegetated Buffer
- GL Grass Lined Swale
- PS Permanent Seeding
- BC Bioengineering Controls
- Rock Outlet Protection

240 0 60 120 240

Approximate Scale in Feet

TETRA TECH

Stockbridge-Munsee Casino
Thompson, New York

Preliminary SWPPP
Final Control Practices

Figure 8F

Appendix B

EPA Construction General Permit

NPDES General Permit for Stormwater Discharges From Construction Activities

As modified effective January 8, 2009

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National Pollutant Discharge Elimination System
General Permit for Discharges from
Large and Small Construction Activities

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et. seq., (hereafter CWA or the Act), as amended by the Water Quality Act of 1987, P.L. 100-4, operators of large and small construction activities that are described in Part 1.3 of this National Pollutant Discharge Elimination System (NPDES) general permit, except for those activities excluded from authorization of discharge in Part 1.3.C of this permit are authorized to discharge pollutants to waters of the United States in accordance with the conditions and requirements set forth herein. Permit coverage is required from the "commencement of construction activities" until "final stabilization" as defined in Appendix A.

This permit shall become effective on June 30, 2008.

This permit and the authorization to discharge shall expire at midnight, June 30, 2010.

Signed:

Stephen S. Perkins, Director, Office of Ecosystem Protection
EPA Region 1

Barbara Finazzo, Director, Division of Environmental Planning and Protection
EPA Region 2

Carl-Axel P. Soderberg, Division Director, Caribbean Environmental Protection Division
EPA Region 2

Jon M. Capacasa, Director, Water Protection Division
EPA Region 3

Tinka Hyde, Director, Water Division
EPA Region 5

Miguel I. Flores, Director, Water Quality Protection Division
EPA Region 6

William A. Spratlin, Director, Water, Wetlands and Pesticides Division
EPA Region 7

Stephen S. Tuber, Assistant Regional Administrator, Office of Partnerships & Regulatory Assistance
EPA Region 8

Alexis Strauss, Director, Water Division
EPA Region 9

Michael Gearheard, Director, Office of Water and Watersheds
EPA Region 10

The signatures are for the permit conditions in Parts 1 through 10 and Appendices A through G, and for any additional conditions which apply to facilities located in the corresponding state, Indian country, or other area.

PART 1: COVERAGE UNDER THIS PERMIT

1.1 Introduction

This Construction General Permit (CGP) authorizes stormwater discharges from large and small construction activities that result in a total land disturbance of equal to or greater than one acre, where those discharges enter surface waters of the United States or a municipal separate storm sewer system (MS4) leading to surface waters of the United States subject to the conditions set forth in this permit. This permit also authorizes stormwater discharges from any other construction activity designated by EPA where EPA makes that designation based on the potential for contribution to an excursion of a water quality standard or for significant contribution of pollutants to waters of the United States. This permit replaces the permit issued in 2003 (68 FR 39087, July 1, 2003), including the modification made to that permit in 2004 (69 FR 76743, December 22, 2004).

This permit is presented in a reader-friendly, plain language format. This permit uses the terms "you" and "your" to identify the person(s) who owns or operates a "facility" or "activity" as defined in Appendix A and who must comply with the conditions of this permit. This format should allow you, the permittee and operator of a large or small construction activity, to easily locate and understand applicable requirements.

The goal of this permit is to minimize the discharge of stormwater pollutants from construction activity.

1.2 Permit Area

If your large or small construction activity is located within the areas listed in Appendix B, you may be eligible to obtain coverage under this permit. Permit coverage is actually provided by legally separate and distinctly numbered permits covering each of the areas listed in Appendix B.

1.3 Eligibility

Permit eligibility is limited to discharges from "large" and "small" construction activity, and to "new projects" and "unpermitted ongoing projects," as defined in Appendix A or as otherwise designated by EPA. This general permit contains eligibility restrictions, as well as permit conditions and requirements. You may have to take certain actions to be eligible for coverage under this permit. In such cases, you must continue to satisfy those eligibility provisions to maintain permit authorization. If you do not meet the requirements that are a pre-condition to eligibility, then resulting discharges constitute unpermitted discharges. By contrast, if you eligible for coverage under this permit and do not comply with the requirements of the general permit, you may he in violation of the general permit for your otherwise eligible discharges.

A. Allowable Stormwater Discharges

Subject to compliance with the terms and conditions of this permit, you are authorized to discharge pollutants in:

1. Stormwater discharges associated with large and small construction activity from "new projects" and "unpermitted ongoing projects" as defined in Appendix A;
2. Stormwater discharges designated by EPA as needing a stormwater permit under 40 CFR §122.26(a)(1)(v) or §122.26(b)(15)(ii);
3. Discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:
   a. The support activity is directly related to the construction site required to have NPDES permit coverage for discharges of stormwater associated with construction activity;
   b. The support activity is not a commercial operation serving multiple unrelated construction projects by different operators, and does not operate beyond the completion of the construction activity at the last construction project it supports; and
   c. Pollutant discharges from support activity areas are minimized in compliance with Part 3.1.G; and
4. Discharges composed of allowable discharges listed in 1.3.A and 1.3.B commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

B. Allowable Non-Stormwater Discharges

You are authorized for the following non-stormwater discharges, provided the non-stormwater component of the discharge is in compliance with Part 5.4 (Non-Stormwater Discharges):

1. Discharges from fire-fighting activities;
2. Fire hydrant flushings;
3. Waters used to wash vehicles where detergents are not used;
4. Water used to control dust in accordance with Part 3.1.B;
5. Potable water including uncontaminated water line flushings;
6. Routine external building wash down that does not use detergents;
7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
8. Uncontaminated air conditioning or compressor condensate;
9. Uncontaminated ground water or spring water;
10. Foundation or footing drains where flows are not contaminated with process materials such as solvents;
11. Uncontaminated excavation dewatering;
12. Landscape irrigation.

C. Limitations on Coverage

1. This permit does not authorize post-construction discharges that originate from the site after construction activities have been completed and the site has achieved final stabilization, including any temporary support activity. Post-construction

stormwater discharges from industrial sites may need to be covered by a separate NPDES permit.

2. This permit does not authorize discharges mixed with non-stormwater. This exclusion does not apply to discharges identified in Part 1.3.B, provided the discharges are in compliance with Part 5.4 (Non-Stormwater Discharges).
3. This permit does not authorize stormwater discharges associated with construction activity that have been covered under an individual permit or required to obtain coverage under an alternative general permit in accordance with Part 2.6.
4. This permit does not authorize discharges that EPA, prior to authorization under this permit, determines will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. Where such a determination is made prior to authorization, EPA may notify you that an individual permit application is necessary in accordance with Part 2.6. However, EPA may authorize your coverage under this permit after you have included appropriate controls and implementation procedures in your permit designed to bring your discharge into compliance with water quality standards.
5. *Discharging into Receiving Waters With an Approved or Established Total Maximum Daily Load Analysis*
   a. You are not eligible for coverage under this permit for discharges of pollutants of concern to waters for which there is a total maximum daily load (TMDL) established or approved by EPA unless implement measures or controls that are consistent with the assumptions and requirements of such TMDL. To be eligible for coverage under this general permit, you must implement conditions applicable to your discharges necessary for consistency with the assumptions and requirements of such TMDL. If a specific wasteload allocation has been established that would apply to your discharge, you must implement necessary steps to meet that allocation.
   b. In a situation where an EPA-approved or established TMDL has specified a general wasteload allocation applicable to construction stormwater discharges, but no specific requirements for construction sites have been identified in the TMDL, you should consult with the State or Federal TMDL authority to confirm that meeting the effluent limits in Part 3 of this permit will be consistent with the approved TMDL. Where an EPA-approved or established TMDL has not specified a wasteload allocation applicable to construction stormwater discharges, but has not specifically excluded these discharges, compliance with the effluent limits in Part 3 of this permit will generally be assumed to be consistent with the approved TMDL. If the EPA-approved or established TMDL specifically precludes such discharges, the operator is not eligible for coverage under the CGP.
6. *Endangered and Threatened Species and Critical Habitat Protection*
   a. Coverage under this permit is available only if your stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities, as defined in Appendix A, are not likely to jeopardize the continued existence of any species that are federally-listed as endangered or threatened ("listed") under the Endangered Species Act (ESA) or result in the adverse

modification or destruction of habitat that is federally-designated as critical under the ESA ("critical habitat").

b. You are not eligible to discharge if the stormwater discharges, allowable non-stormwater discharges, or stormwater discharge-related activities would cause a prohibited "take" of federally-listed endangered or threatened species (as defined under section 3 of the ESA and 50 CFR 17.3), unless such takes are authorized under sections 7 or 10 of the ESA.

c. Determining Eligibility: You must use the process in Appendix C (ESA Review Procedures) to determine eligibility *PRIOR* to submittal of the Notice of Intent (NOI). You must meet one or more of the following six criteria (A-F) for the entire term of coverage under the permit:

Criterion A. No federally-listed threatened or endangered species or their designated critical habitat are in the project area as defined in Appendix C; or

Criterion B. Formal consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded and that consultation:

i. Addressed the effects of the project's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and

ii. The consultation resulted in either:

a. Biological opinion finding no jeopardy to federally-listed species or destruction/adverse modification of federally-designated critical habitat, or

b. Written concurrence from the Service(s) with a finding that the stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are not likely to adversely affect federally-listed species or federally-designated critical habitat; or

Criterion C. Informal consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded and that consultation:

i. Addressed the effects of the project's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and

ii. The consultation resulted in either:

a. Biological opinion finding no jeopardy to federally-listed species or destruction/adverse modification of federally-designated critical habitat, or

b. Written concurrence from the Service(s) with a finding that the stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are

not likely to adversely affect federally-listed species or federally-designated critical habitat; or

Criterion D. The construction activities are authorized through the issuance of a permit under section 10 of the ESA, and that authorization addresses the effects of the stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities on federally-listed species and federally-designated critical habitat; or

Criterion E. Stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are not likely to adversely affect any federally-listed threatened or endangered species or result in the destruction or adverse modification of federally-designated critical habitat; or

Criterion F. The project's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities were already addressed in another operator's valid certification of eligibility under Criteria A-E which included your construction activities and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the project area. By certifying eligibility under this criterion, you agree to comply with any measures or controls upon which the other operator's certification was based.

You must comply with any applicable terms, conditions, or other requirements developed in the process of meeting the eligibility requirements of the criteria in this section to remain eligible for coverage under this permit.

7. *Historic Properties*

   [Reserved]

   You are reminded that you must comply with applicable state, tribal and local laws concerning the protection of historic properties and places.

1.4 Waivers for Certain Small Construction Activities

Three scenarios exist under which small construction activities (see definition in Appendix A) may be waived from the NPDES permitting requirements detailed in this general permit. These exemptions are predicated on certain criteria being met and proper notification procedures being followed. Details of the waiver options and procedures for requesting a waiver are provided in Appendix D.

PART 2: AUTHORIZATION FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITY

2.1 How to Obtain Authorization

To obtain coverage under this general permit, you, the operator, must prepare and submit a complete and accurate Notice of Intent (NOI), as described in this Part. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

2.2 How to Submit Your NOI

You must either use EPA's electronic NOI system (accessible at www.epa.gov/npdes/eNOI or use a paper form (included in Appendix E) and then submit that paper form to:

For Regular U.S. Mail Delivery:
EPA Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:
EPA Stormwater Notice Processing Center
Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

2.3 Authorization to Discharge Date

You are authorized to discharge stormwater from construction activities under the terms and conditions of this permit seven (7) calendar days after acknowledgment of receipt of your complete NOI is posted on EPA's NPDES website http://www.epa.gov/npdes/stormwater/cgp. The exception to this 7-day timeframe is if EPA delays your authorization based on eligibility considerations of Part 1.3 (e.g., ESA concerns). Under this circumstance, you are not authorized for coverage under this permit until you receive notice from EPA of your eligibility.

2.4 Submission Deadlines

A. *New Projects:* To obtain coverage under this permit, you must submit a complete and accurate NOI and be authorized consistent with Part 2.3 prior to your commencement of construction activities.

B. *Permitted Ongoing Projects:* Permitted ongoing projects are not eligible for coverage under this permit. If you previously received authorization to discharge for your project under the 2003 CGP, your authorization will be automatically continued under that permit until the expiration of this permit and the issuance of a new CGP, or the termination of coverage by you under the 2003 CGP, whichever is earlier. Note: If you are an operator of a permitted ongoing project and you transfer ownership of the project, or a portion thereof, to a different operator, that operator will be required to submit a complete and accurate NOI for a new project in accordance with Part 2.2.

C. *Unpermitted Ongoing Projects:* If you previously did not receive authorization to discharge for your project under the 2003 CGP and you wish to obtain coverage under this permit, you must submit an NOI within 90 days of the issuance date of this permit.

D. *Late Notifications:* Operators are not prohibited from submitting NOIs after initiating clearing, grading, excavation activities, or other construction activities. When a late NOI is submitted, authorization for discharges occurs consistent with Part 2.3. The Agency reserves the right to take enforcement action for any unpermitted discharges that occur between the commencement of construction and discharge authorization.

2.5 Continuation of the Expired General Permit

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act and remain in force and effect. If you were granted permit coverage prior to the expiration date, you will automatically remain covered by the continued permit until the earliest of:

A. Reissuance or replacement of this permit, at which time you must comply with the conditions of the new permit to maintain authorization to discharge; or

B. Your submittal of a Notice of Termination; or

C. Issuance of an individual permit for the project's discharges; or

D. A formal permit decision by EPA to not reissue this general permit, at which time you must seek coverage under an alternative general permit or an individual permit.

2.6 Requiring Coverage Under an Individual Permit or an Alternative General Permit

A. EPA may require you to apply for and/or obtain either an individual NPDES permit or coverage under an alternative NPDES general permit. Any interested person may petition EPA to take action under this paragraph. If EPA requires you to apply for an individual NPDES permit, EPA will notify you in writing that a permit application is required. This notification will include a brief statement of the reasons for this decision and an application form. In addition, if you are an existing permittee covered under this permit, the notice will set a deadline to file the application, and will include a statement that on the effective date of issuance or denial of the individual NPDES permit or the coverage or denial of coverage under the alternative general permit as it applies to you, coverage under this general permit will automatically terminate. Applications must be submitted to EPA at the applicable EPA Regional offices listed in Appendix B of this permit. EPA may grant additional time to submit the application upon your request. If you are covered under this permit and you fail to submit in a timely manner an individual NPDES permit application as required by EPA, then the applicability of this permit to you is automatically terminated at the end of the day specified by EPA as the deadline for application submittal.

B. You may request to be excluded from coverage under this general permit by applying for an individual permit. In such a case, you must submit an individual application in accordance with the requirements of 40 CFR §122.26(c)(1)(ii), with reasons supporting the request, to EPA at the applicable EPA Regional office listed in

Appendix B of this permit. The request may be granted by issuance of an individual permit or coverage under an alternative general permit if your reasons are adequate to support the request.

C. When an individual NPDES permit is issued to you (as an entity that is otherwise subject to this permit), or you are authorized to discharge under an alternative NPDES general permit, the applicability of this permit to you is automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit, whichever the case may be. If you (as an entity that is otherwise subject to this permit) are denied an individual NPDES permit or an alternative NPDES general permit, the applicability of this permit to you is automatically terminated on the date of such denial, unless otherwise specified by EPA.

PART 3: EFFLUENT LIMITS

This section includes technology-based and water quality-based effluent limits that apply to all dischargers, unless otherwise specified. You must select, install, and maintain control measures (e.g., Best Management Practices ("BMPs"), controls, practices, etc.) for each major construction activity, identified in your Part 5 project description, to meet these effluent limits. All control measures must be properly selected, installed, and maintained in accordance with any relevant manufacturer specifications and good engineering practices. You must implement the control measures from commencement of construction activity until final stabilization is complete.

The term "minimize" as used in Part 3 means reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

3.1 Effluent Limits to Reduce Pollutants in Stormwater Discharges

You must implement control measures to minimize pollutants in stormwater discharges.

A. ***Sediment Controls:*** You must implement the following, where applicable:

1. Sediment Basins: For common drainage locations that serve an area with 10 or more acres disturbed at one time, a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from the drainage area from a 2-year, 24-hour storm, or equivalent control measures, must be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, must be provided where attainable until final stabilization of the site. When computing the number of acres draining into a common location, it is not necessary to include flows from offsite areas and flows from on-site areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. In determining whether installing a sediment basin is attainable, the operator may consider factors such as site soils,

slope, available area on-site, etc. In any event, the operator must consider public safety, especially as it relates to children, as a design factor for the sediment basin, and alternative sediment controls must be used where site limitations would preclude a safe design.

2. For drainage locations which serve 10 or more disturbed acres at one time and where a temporary sediment basin or equivalent controls is not attainable, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions).

3. For drainage locations serving less than 10 acres, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction area unless a sediment basin providing storage for a calculated volume of runoff from a 2-year, 24-hour storm or 3,600 cubic feet of storage per acre drained is provided.

B. ***Off-Site Sediment Tracking and Dust Control:*** You must minimize off-site vehicle tracking of sediments onto paved surfaces and the generation of dust. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts.

C. ***Runoff Management:*** You must divert flows from exposed soils, retain/detain flows or otherwise minimize runoff and the discharge of pollutants from exposed areas of the site. You must avoid placement of structural practices in floodplains to the degree technologically and economically practicable and achievable.

D. ***Erosive Velocity Control:*** You must place velocity dissipation devices at discharge locations and along the length of any outfall channel to provide a non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving water).

E. ***Post-Construction Stormwater Management:*** You must comply with any applicable federal, local, state, or tribal requirements regarding the design and installation of post-construction stormwater controls. Structural measures should be placed on upland soils to the degree practicable and achievable.

F. ***Construction and Waste Materials:*** You must:
   1. Prevent the discharge of solid materials, including building materials, to waters of the United States, except as authorized by a permit issued under section 404 of the CWA;

2. Minimize exposure of construction and waste materials to stormwater, and the occurrence of spills, through the use of storage practices, prevention and response practices, and other controls;
3. Prevent litter, construction debris, and construction chemicals (e.g., diesel fuel, hydraulic fluids, and other petroleum products) that could be exposed to stormwater from becoming a pollutant source in stormwater discharges.

G. ***Non-Construction Wastes:*** You must minimize pollutant discharges from areas other than construction (including stormwater discharges from dedicated asphalt plants and dedicated concrete plants).

H. ***Erosion Control and Stabilization:***
1. ***General Requirements:*** You must stabilize the site. You must ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. You should avoid using impervious surfaces for stabilization.
2. ***Initiation Deadlines:*** You must initiate stabilization measures, except as provided below, as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.
   i. Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practicable.
   ii. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the site.
   iii. In arid, semiarid, and drought-stricken areas where initiating perennial vegetative stabilization measures is not possible within 14 days after construction activity has temporarily or permanently ceased, final vegetative stabilization measures must be initiated as soon as practicable.

I. ***Spills / Releases in Excess of Reportable Quantities:*** You are not authorized to discharge hazardous substances or oil resulting from an on-site spill. This permit does not relieve you of the federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 relating to spills or other releases of oils or hazardous substances.

Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a 24-hour period:

- you must provide notice to the National Response Center (NRC) (800–424–8802; in the Washington, DC, metropolitan area call 202–267–2675) in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 as soon as site staff have knowledge of the discharge; and

- you must, within 7 calendar days of knowledge of the release, provide a description of the release, the circumstances leading to the release, and the date of the release. You must also implement measures to prevent the reoccurrence of such releases and to respond to such releases.

3.2 Effluent Limits to Reduce Pollutants in Non-Stormwater Discharges

You must minimize any non-stormwater discharges authorized by this permit.

3.3 Effluent Limits Related to Endangered Species

You must protect federally-listed endangered or threatened species, or federally-designated critical habitat to maintain eligibility under Part 1.3.C.6.

3.4 Attainment of Water Quality Standards

A. You must select, install, implement and maintain control measures at your construction site that minimize pollutants in the discharge as necessary to meet applicable water quality standards. In general, except in situations explained in Part 3.4.B below, your stormwater controls developed, implemented, and updated consistent with the other provisions of Part 3 are considered as stringent as necessary to ensure that your discharges do not cause or contribute to an excursion above any applicable water quality standard.

B. At any time after authorization, EPA may determine that your stormwater discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, EPA will require you to:

   i. Modify your stormwater controls in accordance with Part 3.6 to address adequately the identified water quality concerns;
   ii. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or
   iii. Cease discharges of pollutants from construction activity and submit an individual permit application according to Part 2.6.

All written responses required under this part must include a signed certification consistent with Appendix G, Section 11.

3.5 Consistency with Total Maximum Daily Loads

If you are discharging into a water with an EPA established or approved TMDL, you must implement measures to ensure that your discharge of pollutants from the site is consistent with the assumptions and requirements of the EPA-established or approved TMDL, including any specific wasteload allocation that has been established that would apply to your discharge. See Part 1.3.C.5 for further information on determining permit eligibility related to TMDLs.

3.6 Maintenance of Control Measures

A. You must maintain all control measures and other protective measures in effective operating condition. If site inspections required by Part 4 identify BMPs that are not operating effectively, you must perform maintenance as soon as possible and before the next storm event whenever practicable to maintain the continued effectiveness of stormwater controls.

B. If existing BMPs need to be modified or if additional BMPs are necessary for any reason, you must complete implementation before the next storm event whenever practicable. If implementation before the next storm event is impracticable, you must implement alternative BMPs as soon as possible.

C. You must remove sediment from sediment traps or sedimentation ponds when design capacity has been reduced by 50 percent.

D. You must remove trapped sediment from a silt fence before the deposit reaches 50 percent of the above-ground fence height (or before it reaches a lower height based on manufacturer's specifications).

3.7 Training of Employees

You must train employees and subcontractors as necessary to make them aware of the applicable control measures implemented at the site so that they follow applicable procedures.

3.8 Applicable State, Tribal, or Local Programs

You must ensure that the stormwater controls implemented at your site are consistent with all applicable federal, state, tribal, or local requirements for soil and erosion control and stormwater management.

PART 4: INSPECTIONS

A. ***Inspection Frequency:*** You must conduct inspections in accordance with one of the two schedules listed below. You must specify in your SWPPP which schedule you will be following.
   1. At least once every 7 calendar days, OR
   2. At least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

B. ***Case-by-Case Reductions in Inspection Frequency:*** You may reduce your inspection frequency to at least once every month if:
   1. The entire site is temporarily stabilized,
   2. Runoff is unlikely due to winter conditions (e.g., site is covered with snow, ice, or the ground is frozen), or
   3. Construction is occurring during seasonal arid periods in arid areas and semi-arid areas.

C. ***Inspection Waiver for Frozen Conditions:*** A waiver of the inspection requirements is available until one month before thawing conditions are expected to result in a discharge if all of the following requirements are met:
   1. The project is located in an area where frozen conditions are anticipated to continue for extended periods of time (i.e., more than one month);
   2. Land disturbance activities have been suspended; and
   3. The beginning and ending dates of the waiver period are documented in the SWPPP.

D. ***Qualified Personnel:*** Inspections must be conducted by qualified personnel (provided by the operator or cooperatively by multiple operators). "Qualified personnel" means a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity.

E. ***Scope of Inspections:*** Inspections must include all areas of the site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation. Inspectors must look for evidence of, or the potential for, pollutants entering the stormwater conveyance system. Sedimentation and erosion control measures must be observed to ensure proper operation. Discharge locations must be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to waters of the United States, where accessible. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

F. ***Reductions in Scope of Inspections for Stabilized Areas:*** Once a definable area has been finally stabilized, no further inspection requirements apply to that portion of the site (e.g., earth-disturbing activities around one of three buildings in a complex are done and the area is finally stabilized, one mile of a roadway or pipeline project is done and finally stabilized, etc).

G. ***Utility Line Inspections:*** Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may limit the access of inspection personnel to the areas described in Part 4.E above. Inspection of these areas could require that vehicles compromise temporarily or even permanently stabilized areas, cause additional disturbance of soils, and increase the potential for erosion. In these circumstances, controls must be inspected on the same frequencies as other construction projects, but representative inspections may be performed. For representative inspections, personnel must inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas described above. The conditions of the controls along each inspected 0.25 mile segment may be considered as representative of the condition of controls along

that reach extending from the end of the 0.25 mile segment to either the end of the next 0.25 mile inspected segment, or to the end of the project, whichever occurs first.

H. ***Inspection Report:*** For each inspection required above, you must complete an inspection report. At a minimum, the inspection report must include:
   1. The inspection date;
   2. Names, titles, and qualifications of personnel making the inspection;
   3. Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
   4. Weather information and a description of any discharges occurring at the time of the inspection;
   5. Location(s) of discharges of sediment or other pollutants from the site;
   6. Location(s) of BMPs that need to be maintained;
   7. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
   8. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
   9. Corrective action required including implementation dates.

The inspection report must be signed in accordance with Appendix G, Section 11 of this permit.

PART 5: STORMWATER POLLUTION PREVETNION PLANS (SWPPPs)

5.1 Stormwater Pollution Prevention Plan Framework

You must prepare a SWPPP before submitting your Notice of Intent (NOI) for permit coverage. At least one SWPPP must be developed for each construction project covered by this permit and the stormwater controls implemented at your site must be documented in the SWPPP. If you prepared a SWPPP for coverage under a previous NPDES permit, you must review and update the SWPPP prior to submitting your NOI.

The SWPPP does not contain effluent limitations; the technology and water quality-based effluent limitations are contained in Part 3 of this permit. The SWPPP is intended to document the selection, design, installation, and implementation of control measures that are being used to comply with the effluent limitations set forth in Part 3.

The SWPPP must:
1. Identify all potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the construction site; and
2. Describe control measures to be used to meet the effluent limits set forth in Part 3.

5.2 SWPPP Contents: Site and Activity Description

A. ***Construction Site Operators:*** The SWPPP must identify all operators for the project site, and the areas of the site over which each operator has control.

B. ***Nature of Construction Activity:*** The SWPPP briefly must describe the nature of the construction activity, including:
   1. The function of the project (e.g., low density residential, shopping mall, highway, etc.);
   2. The intended sequence and timing of activities that disturb soils at the site;
   3. Estimates of the total area expected to be disturbed by excavation, grading, or other construction activities, including dedicated off-site borrow and fill areas; and
   4. A general location map (e.g., USGS quadrangle map, a portion of a city or county map, or other map) with enough detail to identify the location of the construction site and waters of the United States within one mile of the site.

C. ***Site Map:*** The SWPPP must contain a legible site map, showing the entire site, identifying:
   1. Direction(s) of stormwater flow and approximate slopes anticipated after grading activities;
   2. Areas of soil disturbance and areas that will not be disturbed (or a statement that all areas of the site will be disturbed unless otherwise noted);
   3. Locations of major structural and nonstructural BMPs identified in the SWPPP;
   4. Locations where stabilization practices are expected to occur;
   5. Locations of off-site material, waste, borrow or equipment storage areas;
   6. Locations of all waters of the United States (including wetlands);
   7. Locations where stormwater discharges to a surface water; and
   8. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.

D. ***Construction and Waste Materials:*** The SWPPP must include a description of construction and waste materials expected to be stored on-site with updates as appropriate.

E. ***Locations of Other Industrial Stormwater Discharges:*** The SWPPP must describe and identify the location and description of any stormwater discharge associated with industrial activity other than construction at the site. This includes stormwater discharges from dedicated asphalt plants and dedicated concrete plants that are covered by this permit.

5.3 Description of Control Measures to Reduce Pollutant Discharges

A. ***Control Measures:*** The SWPPP must include a description of all control measures that will be implemented to meet the effluent limits in Part 3. For each major activity identified in the project description the SWPPP must clearly document appropriate control measures, the general sequence during the construction process in which the

measures will be implemented, and which operator is responsible for the control measure's implementation.

B. ***Stabilization:*** The SWPPP must include a description of interim and permanent stabilization practices for the site, including a schedule of when the practices will be implemented.

C. ***Post-Authorization Records:*** The following records must be maintained with the SWPPP following authorization under this permit:
   1. Dates when grading activities occur;
   2. Dates when construction activities temporarily or permanently cease on a portion of the site; and
   3. Dates when stabilization measures are initiated.

5.4 Non-Stormwater Discharges

The SWPPP must identify all allowable sources of non-stormwater discharges listed in Part 1.3.B of this permit, except for flows from fire fighting activities that are combined with stormwater discharges associated with construction activity at the site. The SWPPP must also describe the pollution prevention measures used to eliminate or reduce non-stormwater discharges consistent with Part 3.2.

5.5 Documentation of Permit Eligibility Related to Endangered Species

The SWPPP must include documentation supporting a determination of permit eligibility with regard to Endangered Species, including:

A. Information on whether federally-listed endangered or threatened species, or federally-designated critical habitat may be in the project area;

B. Whether such species or critical habitat may be adversely affected by stormwater discharges or stormwater discharge-related activities from the project;

C. Results of the Appendix C listed species and critical habitat screening determinations;

D. Confirmation of delivery of NOI to EPA or to EPA's electronic NOI system. This may include an overnight, express or registered mail receipt acknowledgment; or electronic acknowledgment from EPA's electronic NOI system;

E. Any correspondence for any stage of project planning between the U.S. Fish and Wildlife Service (FWS), EPA, the U.S. National Marine Fisheries Service (NMFS), or others and you regarding listed species and critical habitat, including any notification that delays your authorization to discharge under this permit; and

F. A description of measures necessary to protect federally-listed endangered or threatened species, or federally-designated critical habitat.

5.6 Documentation of Permit Eligibility Related to Total Maximum Daily Loads

The SWPPP must include documentation supporting a determination of permit eligibility with regard to waters that have an EPA-established or approved TMDL, including:

A. Identification of whether your discharge is identified, either specifically or generally, in an EPA-established or approved TMDL and any associated allocations, requirements, and assumptions identified for your discharge;

B. Summaries of consultation with State or Federal TMDL authorities on consistency of SWPPP conditions with the approved TMDL, and

C. Measures taken by you to ensure that your discharge of pollutants from the site is consistent with the assumptions and requirements of the EPA-established or approved TMDL, including any specific wasteload allocation that has been established that would apply to your discharge.

See Part 1.3.C.5 for further information on determining permit eligibility related to TMDLs.

5.7 Copy of Permit Requirements

Copies of this permit and of the signed and certified NOI form that was submitted to EPA must be included in the SWPPP. Also, upon receipt, a copy of the letter from the EPA Stormwater Notice Processing Center notifying you of their receipt of your administratively complete NOI must also be included as a component of the SWPPP.

5.8 Applicable State, Tribal, or Local Programs

The SWPPP must be updated as necessary to reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater controls you implement at your site.

5.9 Inspections

A record of each inspection and of any actions taken in accordance with Part 4 must be retained with the SWPPP for at least three years from the date that permit coverage expires or is terminated. The inspection reports must identify any incidents of non-compliance with the permit conditions. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the construction project or site is in compliance with this permit.

5.10 Maintaining an Updated Plan

The SWPPP must be modified:

A. To reflect modifications to stormwater control measures made in response to a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants to the waters of the United States that has not been previously addressed in the SWPPP.

B. If during inspections or investigations by site staff, or by local, state, tribal or federal officials, it is determined that the existing stormwater controls are ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the construction site.

C. Based on the results of an inspection, as necessary to properly document additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP must be completed within seven (7) calendar days following the inspection.

5.11 Signature, Plan Review and Making Plans Available

A. ***Retention of SWPPP:*** A copy of the SWPPP (including a copy of the permit), NOI, and acknowledgement letter from EPA must be retained at the construction site (or other location easily accessible during normal business hours to EPA, a state, tribal or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service) from the date of commencement of construction activities to the date of final stabilization. If you have day-to-day operational control over SWPPP implementation, you must have a copy of the SWPPP available at a central location on-site for the use of all those identified as having responsibilities under the SWPPP whenever they are on the construction site. If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance at the construction site.

B. ***Main Entrance Signage:*** A sign or other notice must be posted conspicuously near the main entrance of the construction site. If displaying near the main entrance is infeasible, the notice can be posted in a local public building such as the town hall or public library. The sign or other notice must contain the following information:
   1. A copy of the completed Notice of Intent as submitted to the EPA Stormwater Notice Processing Center; and
   2. If the location of the SWPPP or the name and telephone number of the contact person for scheduling SWPPP viewing times has changed (i.e., is different than that submitted to EPA in the NOI), the current location of the SWPPP and name and telephone number of a contact person for scheduling viewing times.

   For linear projects, the sign or other notice must be posted at a publicly accessible location near the active part of the construction project (e.g., where a pipeline project crosses a public road).

C. ***Availability of SWPPP:*** SWPPPs must be made available upon request by EPA; a state, tribal or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service to the requestor. The copy of the SWPPP that is required to be kept on-site or

locally available must be made available, in its entirety, to the EPA staff for review and copying at the time of an on-site inspection.

D. ***Signature and Certification:*** All SWPPPs must be signed and certified in accordance with Appendix G, Section 11.

5.12 Requirements for Different Types of Operators

You may meet one or both of the operational control components in the definition of operator found in Appendix A. Part 5.12.C applies to all permittees having control over only a portion of a construction site.

A. If you have operational control over construction plans and specifications, you must ensure that:
   1. The project specifications meet the minimum requirements of this Part and all other applicable permit conditions;
   2. The SWPPP indicates the areas of the project where the operator has operational control over project specifications, including the ability to make modifications in specifications;
   3. All other permittees implementing portions of the SWPPP (or their own SWPPP) who may be impacted by a change to the construction plan are notified of such changes in a timely manner; and
   4. The SWPPP indicates the name of the party(ies) with day-to-day operational control of those activities necessary to ensure compliance with the SWPPP or other permit conditions.

B. If you have operational control over day-to-day activities, you must ensure that:
   1. The SWPPP meets the minimum requirements of this Part and identifies the parties responsible for implementation of control measures identified in the plan;
   2. The SWPPP indicates areas of the project where you have operational control over day-to-day activities;
   3. The SWPPP indicates the name of the party(ies) with operational control over project specifications (including the ability to make modifications in specifications).

C. If you have operational control over only a portion of a larger project (e.g., one of four homebuilders in a subdivision), you are responsible for compliance with all applicable effluent limits, terms, and conditions of this permit as it relates to your activities on your portion of the construction site, including protection of endangered species, critical habitat, and historic properties, and implementation of control measures described in the SWPPP. You must ensure either directly or through coordination with other permittees, that your activities do not render another party's pollutant discharge controls ineffective. You must either implement your portion of a common SWPPP or develop and implement your own SWPPP.
   For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site to prepare and participate in a comprehensive SWPPP is encouraged. Individual operators at a site may, but are not

required to, develop separate SWPPPs that cover only their portion of the project provided reference is made to other operators at the site. In instances where there is more than one SWPPP for a site, cooperation between the permittees is encouraged to ensure the stormwater discharge control measures are consistent with one another (e.g., provisions to protect listed species and critical habitat).

PART 6: TERMINATION OF COVERAGE

6.1 Submitting a Notice of Termination

Submit a complete and accurate Notice of Termination (NOT) either electronically (strongly encouraged) at www.epa.gov/npdes/eNOI or by completing the paper Notice of Termination form included in Appendix F of this permit and submitting that form to the address listed in Part 2.2.

6.2 When to Submit a Notice of Termination

You may only submit a Notice of Termination (NOT) after one or more of the following conditions have been met:

A. Final stabilization has been achieved on all portions of the site for which you are responsible;

B. Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized;

C. Coverage under an individual or alternative general NPDES permit has been obtained; or

D. For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

The NOT must be submitted within 30 days of one of the above conditions being met. Authorization to discharge terminates at midnight of the day the NOT is signed.

PART 7: RETENTION OF RECORDS

Copies of the SWPPP and all documentation required by this permit, including records of all data used to complete the NOI to be covered by this permit, must be retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA at any time.

PART 8: REOPENER CLAUSE

8.1 Procedures for Modification or Revocation

Permit modification or revocation will be conducted according to 40 CFR §122.62, §122.63, §122.64 and §124.5.

8.2 Water Quality Protection

If there is evidence indicating that the stormwater discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, you may be required to obtain an individual permit in accordance with Part 2.6 of this permit, or the permit may be modified to include different limitations and/or requirements.

8.3 Timing of Permit Modification

EPA may elect to modify the permit prior to its expiration (rather than waiting for the new permit cycle) to comply with any new statutory or regulatory requirements, such as for effluent limitation guidelines that may be promulgated in the course of the current permit cycle.

PART 9: STANDARD PERMIT CONDITIONS

The federal regulations require that the Standard Conditions provisioned at 40 CFR §122.41 be applied to all NPDES permits. You are required to comply with those Standard Conditions, details of which are provided in Appendix G.

PART 10: PERMIT CONDITIONS APPLICABLE TO SPECIFIC STATES, INDIAN COUNTRY, OR TERRITORIES

The provisions of this Part provide modifications or additions to the applicable conditions of this permit to reflect specific additional conditions required as part of the state or tribal CWA Section 401 certification process, or the Coastal Zone Management Act (CZMA) certification process, or as otherwise established by the permitting authority. The specific additional revisions and requirements only apply to activities in those specific states, Indian country, and federal facilities. States, Indian country, and federal facilities not included in this Part do not have any modifications or additions to the applicable conditions of this permit.

A. Region 1

1. MAR100000: Commonwealth of Massachusetts, except Indian country
   a. State Water Quality Statutes, Regulations, and Policies:
      i. You must comply with the Massachusetts Clean Waters Act (Ch. 21, ss. 26-53).
      ii. You must comply with the conditions in 314 CMR 4.00 - Surface Water Quality Standards.
      iii. You must comply with the conditions in 314 CMR 3.00 - Surface Water Discharge Permit Program.
      iv. You must comply with the Wetlands Protection Act, Ch. 131, s. 40 and its regulations, 310 CMR 10.00 and any order of Conditions issued by a Conservation Commission or a Superseding Order of Conditions issued by the Massachusetts Department of Environmental Protection.

b. Department of Environmental Protection Storm Water Management Policy:
   i. You must comply with the Massachusetts Storm Water Management Policy, and applicable Storm Water Performance Standards, as prescribed by state regulations promulgated under the authority of the Massachusetts Clean Waters Act, MGL Ch. 21, ss. 26-53 and the Wetlands Protection Act Ch. 131, s. 40.
c. Other State Environmental Laws, Regulations, Policies:
   i. You must comply with the Massachusetts Endangered Species Act [MESA] (MGL Ch. 313A and regulations at 321 CMR 10.00) and any actions undertaken to comply with this storm water permit, shall not result in non-compliance with the MESA.
   ii. You must not conduct activities under this permit that will interfere with implementation of mosquito control work conducted in accordance with Chapter 252 including, s. 5A thereunder and MassDEP Guideline Number BRP G01-02, West Nile Virus Application of Pesticides to Wetland Resource Areas and Buffer Zones, and Public Water Systems.
d. Other Department Directives:
   i. The Department may require you to perform water quality monitoring during the permit term if monitoring is necessary for the protection of public health or the environment as designated under the authority at 314 CMR 3.00.
   ii. The Department may require you to provide measurable verification of the effectiveness of BMPs and other control measures in your management program, including water quality monitoring.
   iii. The Department has determined that compliance with this permit does not protect you from enforcement actions deemed necessary by the Department under its associated regulations to address an imminent threat to the public health or a significant adverse environmental impact which results in a violation of the Massachusetts Clean Waters Act, Ch. 21, ss. 26-53.
   iv. The Department reserves the right to modify the 401 Water Quality Certification if any changes, modifications or deletions are made to the general permit. In addition, the Department reserves the right to add and/or alter the terms and conditions of its 401 Water Quality Certification to carry out its responsibilities during the term of this permit with respect to water quality, including any revisions to 314 CMR 4.00, Surface Water Quality Standards.
e. Permit Compliance
   i. Should any violation of the Massachusetts Surface Water Quality Standards (314 CMR 4.00) or the conditions of this certification occur, the Department will direct you to correct the violations(s). The Department has the right to take any action as authorized by the General Laws of the Commonwealth to address the violation of this permit or the MA Clean Waters Act and the regulations promulgated thereunder. Substantial civil and criminal penalties are authorized under MGL Ch. 21, s. 42 for discharging into Massachusetts' waters in violation of an order or permit issued by this Department. This

certification does not relieve you of the duty to comply with other applicable Massachusetts statutes and regulations.

2. NHR100000: State of New Hampshire
   a. If you disturb 100,000 square feet or more of contiguous area, you must also apply for a "Significant Alteration of the Terrain Permit from DES pursuant to RSA 485-A:17 and Env-Ws 415. This requirement applies to the disturbances of only 50,000 square feet when construction occurs within the protected shoreline (see RSA 483-B and Env-Ws 1400).
   b. You must determine that any excavation dewatering discharges are not contaminated before they will be authorized as an allowable non-storm water discharge under this permit (see Subpart 1.3.B). The water is considered uncontaminated if there is no groundwater contamination within 1,000 feet of the discharge. Information on groundwater contamination can be generated over the Internet via the NHDES web site http://www.des.state.nh.us (One Stop Data Retrieval, Onestop Master Site Table). The web site also provides E-mail access to an NHDES Site Remediation Contact to answer questions about using the Web site.
   c. You must treat any uncontaminated excavation dewatering discharges as necessary to remove suspended solids and turbidity. The discharges must be sampled at a location prior to mixing with storm water at least once per week during weeks when discharges occur. The samples must be analyzed for total suspended solids (TSS) and must meet monthly average and maximum daily TSS limitations of 50 milligrams per liter (mg/L) and 100 mg/L, respectively. TSS (a.k.a. Residue, Nonfilterable) analysis and sampling must be performed in accordance with Tables IB (parameter, units and method) and II (required containers, preservation techniques and holding times) in 40 CFR 136.3 (see: http://www.access.gpo.gov/nara/cfr/waisidx_02/40cfr136_02.html). Records of any sampling and analysis must be maintained and kept with the SWPPP for at least three years after final site stabilization.
   d. During site design and preparation of the storm water pollution prevention plan (SWPPP), you must consider opportunities for groundwater recharge using on-site infiltration. The SWPPP must include a description of any on-site infiltration that will be installed as a post construction storm water management measure (see Subpart 3.4.E) or reasons for not employing such measures. For design considerations for infiltration measures see the September 2001 DES publication titled "Managing Storm Water as a Valuable Resource" which is available online at: http://www.des.state.nh.us/StormWater/construction.htm. Loss of annual recharge to groundwater should be minimized through the use of infiltration measures wherever feasible.

B. Region 2 – No additional requirements.

C. Region 5

1. MNR100000: Indian Country within the State of Minnesota

a. *Fond du Lac Band of Lake Superior Chippewa*

i. A copy of the Storm Water Pollution Prevention Plan must be submitted to the following office at least thirty (30) days in advance of sending the Notice of Intent (NOI) to EPA:

Fond du Lac Reservation
Office of Water Protection
1720 Big Lake Road
Cloquet, MN 55720

CGP applicants are encouraged to work with the FDL Office of Water Protection in the identification of all proposed receiving waters.

ii. Copies of the NOI and the Notice of Termination (NOT) must be sent to the Fond du Lac Office of Water Protection at the same time they are submitted to EPA.

iii. This certification does not pertain to any new discharge to Outstanding Reservation Resource Waters (ORRW) as described in §105 b.3 of the Fond du Lac Water Quality Standards (Ordinance #12/98). Although additional waters may be designated in the future, currently Perch Lake, Rice Portage Lake, Miller Lake, Deadfish Lake and Jaskari Lake are designated as ORRWs. New dischargers wishing to discharge to an ORRW must obtain an individual permit for stormwater discharges from large and small construction activities.

iv. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in the Water Quality Standards of the Fond du Lac Reservation, Ordinance 12/98 as amended. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the Fond du Lac Reservation for any of the uses designated in the Water Quality Standards of the Fond du Lac Reservation. These uses include wildlife, aquatic life, warm and cold water fisheries, subsistence fishing (netting), primary contact recreation, cultural, wild rice areas, aesthetic waters, agriculture, navigation and commercial.

v. Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the Fond du Lac Reservation. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the Fond du Lac reservation, including groundwater.

vi. This certification does not authorize impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for such listing.

b. *Grand Portage Band of Lake Superior Chippewa* **[Coverage not yet available]**

2. WIR100000: Indian Country within the State of Wisconsin, except the Sokaogon Chippewa Community.

a. No additional requirements

Note: Facilities within the Sokaogon Chippewa Community are not eligible for stormwater discharge coverage under this permit. Contact the Region 5 office for an individual permit application.

D. Region 6

1. NMR100000: The State of New Mexico, except Indian country
   a. In addition to all other provisions of this permit, operators who intend to obtain authorization under this permit for all new stormwater discharges must satisfy the conditions in Part 10.C.1.b., unless a TMDL has been established for the receiving stream which specifies a waste load allocation (WLA) for construction stormwater discharges or the receiving stream is a Tier 3 water, in which case Part 10.C.1.c. applies.
   b. The SWPPP must include site-specific interim and permanent stabilization, managerial, and structural solids, erosion, and sediment control best management practices (BMPs) and/or other controls that are designed to prevent to the maximum extent practicable an increase in the sediment yield and flow velocity from pre-construction, pre-development conditions to assure that applicable standards in 20.6.4 NMAC, including the antidegradation policy, or WLAs are met. This requirement applies to discharges both during construction and after construction operations have been completed. The SWPPP must identify, and document the rationale for selecting these BMPs and/or other controls. The SWPPP must also describe design specifications, construction specifications, maintenance schedules (including a long term maintenance plan), criteria for inspections, as well as expected performance and longevity of these BMPs. BMP selection must be made based on the use of appropriate soil loss prediction models (such as SEDCAD 4.0, RUSLE, SEDIMOT II, MULTISED, etc.), or equivalent, generally accepted (by professional erosion control specialists), soil loss prediction tools. The operator(s) must demonstrate, and include documentation in the SWPPP, that implementation of the site-specific practices will assure that the applicable standards or WLAs are met, and will result in sediment yields and flow velocities that, to the maximum extent practicable, will not be greater than the sediment yield levels and flow velocities from pre-construction, pre-development conditions. The SWPPP must be prepared in accordance with good engineering practices by qualified (e.g., CPESC certified, engineers with appropriate training, etc.) erosion control specialists familiar with the use of soil loss prediction models and design of erosion and sediment control systems based on these models (or equivalent soil loss prediction tools). The operator(s) must design, implement, and maintain BMPs in the manner specified in the SWPPP.
   c. Operators are not eligible to obtain authorization under this permit for all new stormwater discharges to outstanding national resource waters (ONRWs) (also referred to as "Tier 3: waters). According to the Antidegradation Policy at Paragraph 3 of Subsection A of 20.6.4.8 NMAC, in part, "ONRWs may include, but are not limited to, surface waters of the state within national and state monuments, parks, wildlife refuges, waters of exceptional recreational or

ecological significance, and waters identified under the Wild and Scenic Rivers Act." No ONRWs exist at the time this permit is being finalized; however, during the term of the permit, if a receiving water is designated as an ONRW, the operator must obtain an individual permit for stormwater discharges from large and small construction activities.

d. Stormwater discharges associated with construction activity that the State has determined to be or may reasonably be expected to be contributing to a violation of an applicable standard, including the antidegradation policy, are not authorized by this permit. *Note: Upon receipt of this determination, NMED anticipates that, within a reasonable period of time, EPA will notify the general permittee to apply for and obtain an individual NPDES permit for these discharges per 40 CFR Part 122.28(b)(3).*

e. Inspections required under Part 4 must be conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. The option for inspections at least once per 7 calendar days is not available. The Inspection Waivers provided in Part 4.B and C still apply.

f. Permittees can use temporary erosion controls as described in item 3 of the Appendix A definition of "Final Stabilization" as a method for final stabilization under the permit only under the following conditions:

If this option is selected, you must notify SWQB at the address listed in item g. below at the time the NOT is submitted to EPA. The information to be submitted includes:

- A copy of the NOT;
- Contact information, including individual name or title, address, and phone number for the qualified (see CGP Part 4.10.D) party responsible for implementing the final stabilization measures; and
- The date that the temporary erosion control practice was implemented (this is always prior to, and sometimes significantly prior to, submission of an NOT) and the projected timeframe that the 70% native vegetative cover requirements are expected to be met. (Note that if more than three years is required to establish 70 percent of the natural vegetative cover, this technique cannot be used or cited for fulfillment of the final stabilization requirement – you remain responsible for establishment of final stabilization)

SWQB also requires that you periodically (minimum once/year) inspect and properly maintain the area until the criteria for final stabilization, as defined in Appendix A, item 3 of the CGP, have been met. You must prepare an inspection report documenting the findings of these inspections and signed in accordance with Appendix G, Section 11 of the CGP. This inspection record must be retained along with the SWPPP for three years after the NOT is submitted for the site and additionally submitted to SWQB at the address listed in item g. below. The inspections must at a minimum include the following:

- Observations of all areas of the site disturbed by construction activity;

- Best Management Practices (BMPs)/post-construction storm water controls must be observed to ensure they are effective;
- An assessment of the status of vegetative re-establishment; and
- Corrective actions required to ensure vegetative success within three years, and control of pollutants in storm water runoff from the site, including implementation dates.

Signed copies of discharge monitoring reports, individual permit applications, and all other reports required by the permit to be submitted, shall also be sent to:

Program Manager
Point Source Regulation Section
Surface Water Quality Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

2. NMR10000I: Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I
   a. *Pueblo of Acoma.* The following conditions apply only to facilities on or bordering the Pueblo of Acoma with discharges into or flowing into waters of the Pueblo.
      i. A copy of the Notice of Intent and Notice of Termination must be submitted to the Haaku Water Office at the address below at the same time they are submitted to EPA. A copy of the storm water pollution prevention plan must be provided to the Haaku Water Office upon request.
      ii. HAAKU WATER OFFICE
      PO Box 309
      Pueblo of Acoma, NM 87034
   b. *Pueblo of Isleta.* The following conditions apply only to discharges on the Pueblo of Isleta.
      i. Subpart 1.3.C.4, (Eligibility, Limitations on Coverage) first sentence, is revised to read: "This permit does not authorize discharges that EPA or the Pueblo of Isleta, prior to authorization under this permit, determines will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard or impairment of a designated use of receiving waters."
      ii. Subpart 2.2. (How to Submit) is amended to require: Copies of all Notices of Intent submitted to EPA must also be sent concurrently to the Pueblo of Isleta at the following address. Discharges are not authorized by this permit unless an accurate and complete Notice of Intent has been submitted to the Pueblo of Isleta.

      <u>Regular U.S. Mail Delivery</u>
      Natural Resources Department
      Pueblo of Isleta

P.O. Box 1270
Isleta, NM 87022

Overnight/Express Mail Delivery
Natural Resources Department
Building L
11000 Broadway, SE
Albuquerque, NM 87105

iii. Part 2 (Authorizations for Discharges of Storm Water from Construction Activity), second sentence, is amended to read: "Discharges are not authorized if your NOI is incomplete or inaccurate, if you failed to submit a copy of the NOI to the Pueblo of Isleta, or if you were never eligible for permit coverage.

iv. Subpart 5.3 (Description of Control Measures to Reduce Pollutant Discharges), section A, last sentence, is amended to read: "For each major activity identified in the project description the SWPPP must clearly describe appropriate control measures, the general sequence during the construction process in which the measures will be implemented, and which operator is responsible for the control measure's implementation and maintenance."

v. Subpart 5.7 (Copy of Permit Requirements), first sentence, is revised to read "Copies of this permit and of the signed and certified NOI form that was submitted to the Pueblo of Isleta and EPA must be included in the SWPPP."

vi. Subpart 4. (Inspections), section A is revised to read "Inspections must be conducted at least once every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater."

vii. Subpart 4. (Inspections), section H, last paragraph, is amended to add: "Copies of inspection reports that identify incidents of noncompliance shall be sent to Pueblo of Isleta at the address listed in Subpart 2.2." (See above)

viii. Subpart 5.11. (Signature, Plan Review and Making Plans Available), section A, first sentence is amended to read:

"A copy of the SWPPP (including a copy of the permit), NOI, and acknowledgement letter from EPA must be retained at the construction site (or other location easily accessible during normal business hours to the Pueblo of Isleta's Natural Resources Department, EPA, a state, tribal or local agency approving sediment and erosion plans, grading plans, or storm water management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service) from the date of commencement of construction activities to the date of final stabilization."

ix. Subpart 5.11. (Signature, Plan Review and Making Plans Available), section C. is amended to read: "SWPPPs must be made available upon request by EPA; representatives of the Pueblo of Isleta Natural Resources Department, a state, tribal or local agency approving sediment and erosion plans, grading

plans, or storm water management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service to the requestor. The copy of the SWPPP that is required to be kept on-site or locally available must be made available, in its entirety, to the EPA staff and the Pueblo of Isleta's Natural Resources Department staff for review and copying at the time of an on-site inspection.

x. Subpart 3.1.A (Sediment Controls), is amended to add: "Erosion and sediment controls shall be designed to retain sediment on-site."

xi. Subpart 3.1.I (Spills/Releases in Excess of Reportable Quantities), first bullet is amended to read: "you must provide notice to the Pueblo of Isleta Natural Resources Department (505-869-5748) and the National Response Center (NRC) (800–424–8802; in the Washington, DC, metropolitan area call 202–426– 2675) in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 as soon as site staff have knowledge of the discharge; and"

xii. Subpart 3.4.B (Attainment of Water Quality Standards After Authorization), is amended to add: "You must provide the Pueblo of Isleta, at the address listed in Subpart 2.2, with a copy of the EPA notification, modifications to your storm water controls, data and certification required by EPA."

xiii. Subpart 6.1. (Submitting a Notice of Termination) is amended to add: Copies of all Notices of Termination submitted to EPA must also be sent concurrently to the Pueblo of Isleta at the following address in Subpart 2.2.

xiv. Any correspondence, other than NOIs and NOTs, with the Pueblo of Isleta concerning storm water discharges authorized by this permit shall sent one of the addresses in Subpart 2.2.

xv. Appendix G, Section 9, first sentence is amended to read: "You must allow the Pueblo of Isleta's Natural Resources Department, EPA, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:..."

xvi. Appendix G, Section 12, subsections A- H are amended to require that when you must notify EPA of an event (e.g., planned changes, anticipated noncompliance, transfers, required reporting due to potential adverse effects or environmental impacts or other noncompliance matters), the Pueblo of Isleta must also be notified.

xvii. Parties wishing to apply for an Equivalent Analysis Waiver (see Appendix D, Section C) must provide a copy of the waiver analysis to the Pueblo of Isleta at the address specified in Subpart 2.2 at the time it is submitted to EPA.

c. *Ohkay Owingeh (San Juan Pueblo).* The following conditions apply only to discharges on Ohkay Owinegeh.

i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency, at the following address. A copy of the Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.

Office of Environmental Affairs
P.O. Box 717
Ohkay Owingeh, NM 87566

ii. Appendix G, Section 10 (Monitoring and records), item D is amended to add: "All monitoring must be conducted in accordance with the Pueblo of San Juan's Quality Assurance Project Plan."

d. *Pueblo of Nambé.* The following conditions apply only to discharges on the Pueblo of Nambé.

i. Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and any analytical data must be provided to the Nambé Pueblo Department of Environment and Natural Resources (DENR) at the time it is provided to the Environmental Protection Agency, at the following address. A copy of the Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.

ii. All correspondence chall be sent to:

Pueblo of Nambé
Department of Environment and Natural Resources
Rt. 1 Box 117-BB
Santa Fe, NM 87506
505-455-2036 ext. 120 fax: 505-455-8873

e. *Pueblo of Picuris.* The following conditions apply only to discharges on the Pueblo of Picuris.

i. Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and any analytical data (e.g. Discharge Monitoring Reports, etc.) or any other reports must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency. A copy of the Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.

ii. All correspondence shall be sent to:

Cordell Arellano
Director, Environment Department
Pueblo of Picuris
PO Box 158
Penasco, NM 87553

f. *Pueblo of Pojoaque.* The following conditions apply only to discharges on the Pueblo of Pojoaque.

i. Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and any analytical data (e.g. Discharge Monitoring Reports, etc.) or any other reports must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency. A copy of documents related to the

Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.

ii. All correspondence shall be sent to:

Luke Mario Duran
Director, Environment Department
Pueblo of Pojoaque
5 West Gutierrez, Suite 2b
Santa Fe, NM 87506

g. *Pueblo of Taos.* The following conditions apply only to discharges on the Pueblo of Taos.

i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Taos Pueblo Governor's Office and the Taos Pueblo Environmental Office at the same time as or prior to submission to the Environmental Protection Agency. A copy of the Storm Water Pollution Prevention Plan must be provided to Pueblo environmental personnel upon request.

ii. All correspondence for both the Taos Pueblo Governor's Office and the Taos Pueblo Environmental Office (same address) shall be sent to:

Governor/ Taos Pueblo Environmental Office (as applicable)
Taos Pueblo
PO Box 1846
Taos, NM 87571

h. *Pueblo of Sandia.* The following conditions apply only to discharges on the Pueblo of Sandia.

i. A copy of the Notice of Intent (NOI) must be provided to the Pueblo at the same, (or prior to) the time it is submitted to the Environmental Protection Agency.

ii. The Pueblo of Sandia objects to use of Low Rainfall Erosivity Waivers (see Appendix D, Part A) for any small construction activities on the Pueblo, so this waiver will not be available for construction projects on the Pueblo. Permittees wishing to apply for all other waivers (see Appendix D) must provide a copy of the waiver certification or analysis to the Pueblo of Sandia Environment Department.

iii. The Storm Water Pollution Prevention Plan (SWPPP) must be available to the Pueblo of Sandia either electronically or hard copy upon request for review. The SWPPP must be made available at least fourteen (14) days before construction begins. The fourteen (14) day period will give Tribal staff time to become familiar with the project site, prepare for construction inspections, and determine compliance with the Pueblo of Sandia Water Quality Standards. Failure to provide a SWPPP to the Pueblo of Sandia may result in denial of the discharge or construction delay.

iv. Discharges are not authorized by this permit unless and until:

a. An accurate and complete NOI has been submitted to the Pueblo; AND

b. An "Authorization to Proceed Letter" with any site specific mitigation requirements has been received from the Pueblo of Sandia following their review of the NOI and SWPPP and the permittee complies with all applicable requirements therein.

v. Before submitting a Notice of Termination (NOT), permittees must clearly demonstrate to the Pueblo of Sandia Environment Department though a site visit or documentation that requirements for site stabilization have been met and any temporary erosion control structures have been removed (or operational control is being passed to another operator). A short letter concurring that conditions for submittal of an NOT have met will be sent to the permittee by the Pueblo. Upon receipt of this letter, and provided the all other applicable requirements of the permit are met, the permittee will be eligible to submit and NOT.

vi. You must telephone the Pueblo of Sandia Environment Department at (505) 867-4533 of any noncompliance that may endanger human health or the environment within ten (10) hours of becoming aware of the circumstance.

vii. All corresondance shall be sent to:

Scott Bulgrin, Water Quality Manager
Pueblo of Sandia
481 Sandia Loop
Bernalillo, NM 87004

i. *Santa Clara Pueblo.* The following conditions apply only to discharges on the Santa Clara Pueblo.

i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pueblo of Santa Clara Office of Environmental Affairs when they are submitted to the Environmental Protection Agency.

ii. A copy of the storm water pollution prevention plan must be made available to the Pueblo of Santa Clara Office of Environmental Affairs upon request.

iii. Construction site operators must notify the Pueblo of Santa Clara Office of Environmental Affairs by telephone at (505) 753-7326 of any non-compliance discharges that may endanger human health or the environment within twenty-fout (24) hours of becoming aware of the discharge.

iv. All correspondence shall be sent to:

Santa Clara Office of Environmental Affairs Taos Pueblo
One Kee Street
PO Box 580
Espanola, NM 87532
505-753-7326 Tel
505-747-2728 Fax

j. *Pueblo of Tesuque.* The following conditions apply only to discharges on the Pueblo of Tesuque.

i. Copies of the Notice of Intent (NOI), Notice of Termination (NOT), and any analytical data (e.g. Discharge Monitoring Reports, etc.) or any other

reports must be provided to the Pueblo at the time it is provided to the Environmental Protection Agency.

ii. A copy of documents related to the Storm Water Pollution Prevention Plan must be provided to the Pueblo upon request.

iii. All correspondence shall be sent to:

Ryan Swazo-Hinds
Sr. Envirionmental Technician
Pueblo of Tesuque
Environment Department
Rt. 42, Box 360-T
Santa Fe, NM 87506

3. OKR10000F: Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).
   a. In accordance with Oklahoma's Water Quality Standards (OAC 785:45-5-25), Subpart 1.3.C. (Limitations on Coverage) is modified to add paragraphs 8 and 9 as follows:

      "8. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may only be used to authorize discharges from temporary construction activities. Discharges from any on-going activities such as sand and gravel mining or any other mineral mining are not authorized.

      9. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may not be used to authorize discharges from support activities, including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, or borrow areas."
4. OKR10000I: Indian country within the State of Oklahoma.
   a. In order to protect downstream waters subject to the state of Oklahoma's Water Quality Standards (OAC 785:45-5-25) where receiving waters flow from Indian Country to State waters, Subpart 1.3.C. (Limitations on Coverage) is modified to add paragraphs 8 and 9 as follows:

      "8. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated

"ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may only be used to authorize discharges from temporary construction activities. Discharges from any on-going activities such as sand and gravel mining or any other mineral mining are not authorized.

9. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Big Lee Creek or any water or watershed designated "ORW" (Outstanding Resource Water) in Oklahoma's Water Quality Standards, this permit may not be used to authorize discharges from support activities, including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, or borrow areas."

b. *Pawnee Nation of Oklahoma.* The following conditions apply only to discharges on the Pawnee Nation of Oklahoma.
   i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pawnee Nation at the same time they are submitted to the Environmental Protection Agency.
   ii. A copy of the storm water pollution prevention plan must be made available to Pawnee Nation Department of Environmental Conservation and Safety upon request.
   iii. Construction site operators must notify the Pawnee Nation Department of Environmental Conservation and Safety by telephone at (918) 762-3655 immediately of any non-compliance with any provision of the permit conditions.
   iv. All correspondence shall be sent to:

   Pawnee Nation
   Department of Environmental Conservation and Safety
   PO Box 470
   Pawnee, OK 74058

5. TXR10000F: Discharges in the State of Texas that are not under the authority of the Texas Commission on Environmental Quality, including activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline.

   NOTE: This permit does not create an obligation to obtain a permit where such obligation does not already exist under federal statute or regulation. For more information on the Clean Water Act §§ 402(l)(2) permitting exemption for uncontaminated discharges of storm water from oil and gas exploration, production, processing, or treatment operations or transmission facilities, visit: http://cfpub.epa.gov/npdes/stormwater/oilgas.cfm

D. Region 8

1. MTR10000I:

   a. Confederated Salish and Kootenai Tribes. The following conditions only apply for projects on the Flathead Indian Reservation:

i. Permittees must send a Stormwater Pollution Prevention Plan (SWPPP) to the Tribe at least 30 days before construction starts;
ii. Before submitting a Notice of Termination (NOT), permittees must clearly demonstrate to an appointed tribal staff person during an on-site inspection that requirements for site stabilization have been met;
iii. Permittees submitting electronic Notices of Intents (eNOI's) to USEPA must cc a copy to NRD-EPD@cskt.org; and
iv. Written NOIs, SWPPPs, and NOTs shall be mailed to:

Confederated Salish and Kootenai Tribes
National Resources Department
Department Head
P.O. Box 278
Pablo, MT 59855

Permittees may also submit their SWPPP and NOT to NRD-EPD@cskt.org

b. Fort Peck Tribes. The following conditions only apply for projects on the Fort Peck Indian Reservation:
i. The permittee must send a copy of the Notice of Intent (NOI) and the Notice of Termination (NOT) to the Tribes at the same time that the NOI and NOT is submitted to EPA. Copies of the NOI and NOT shall be accepted either electronically or hard copy format and should be sent to:

Deb Madison
Environmental Programs Manager
Fort Peck Assiniboine & Sioux Tribes
P.O. Box 1027
Poplar, MT 59255
Tel: 406.768.2389 Fax: 406.768.5606
E-mail: 2horses@nemont.net

ii. A copy of the proposed SWPPP at the time of NOI/NOT submissions must be sent to the Tribes to ensure that upon closure of the site and/or activities all environmental commitments have been met.

c. Northern Cheyenne Reservation. The following conditions only apply for projects on the Northern Cheyenne Indian Reservation:
i. Permittees must contact the Northern Cheyenne Environmental Protection Department at (406) 477-6506 prior to authorization to discharge under the general permit;
ii. The Tribe shall review and approve SWPPPs prior to approval; and
iii. The Tribe shall review and improve BMPs on site to ensure that Tribal water quality standards are protected.

E. Region 9

1. ASR100000: The Island of American Samoa
   a. Discharges authorized by the general permit shall meet all applicable American Samoa water quality standards.
   b. Permittees discharging under the general permit shall comply with all conditions of the permit.

3. AZR10000I: Indian country lands within the State of Arizona, including Navajo Reservation lands in New Mexico and Utah
   a. White Mountain Apache Tribe. The following condition applies only for projects on the White Mountain Apache Reservation: All NOIs for proposed stormwater discharge coverage shall be provided to the following address:

      Tribal Environmental Planning Office
      P.O. Box 2109
      Whiteriver, AZ 85941

   b. Hoopa Valley Tribe. The following conditions apply only for projects on the Hoopa Valley Reservation:
      i. All notices of intent submitted for stormwater discharges under the general permit in Hoopa Valley Indian Reservation (HVIR) shall be submitted to the Tribal Environmental Protection Agency (TEPA); and
      ii. All pollution prevention plans for stormwater discharge in HVIR shall be submitted to TEPA for review and approval.

   c. 29 Palms Band of Mission Indians. The following conditions apply only for projects on the 29 Palms Band of Mission Indians Reservation:
      i. The 29 Palms Tribal EPA is informed of any future changes made to the proposed CGP;
      ii. For each permitted activity, the U.S. EPA will ensure that all terms and conditions of the proposed CGP are complied with;
      iii Notices of intent must be submitted to the 29 Palms Tribal EPA for review, comment and tracking;
      iv. Copies of stormwater pollution prevention plans (SWPPPs) and supporting Best Management Practices (BMPs) must be submitted to the 29 Palms Tribal EPA for review and compliance;
      v. Copies of all monitoring reports must be provided to the 29 Palms Tribal EPA;
      vi. Depending on the permitted activity, the 29 Palms Tribal EPA reserves the right to stipulate additional monitoring requirements; and
      vii. In order to meet the requirements of Tribal law, including water quality standards, each of the conditions cited in the proposed CGP and the Twenty-Nine Palms Band of Mission Indians certification shall not be made any less stringent.

d. Hualapai Tribe. The following conditions apply only for projects on the Hualapai Reservation:

   i. All notices of intent for proposed stormwater discharges under the CGP and all pollution prevention plans for stormwater discharges on Hualapai Tribal lands shall be submitted to the Water Resource Program through the Tribal Chairman for review and approval, P.O. Box 179, Peach Springs, AZ 86434.

e. Pyramid Lake Paiute Tribe. The following conditions apply only for projects on the Pyramid Lake Paiute Reservation:

   i. All notices of intent (NOIs) must be submitted to the Tribe for review, comments and tracking;

   ii. copies of all Stormwater Pollution Prevention Plan (SWPPPs) and supporting Best Management Practices (BMPs) must be submitted to the Pyramid Lake Paiute Tribe for review and concurrence;

   iii. copies of the criteria for Effluent Limitations Guidelines (ELGs) and the criteria for proposed Qualifying Local Programs (QLPs) to be used for sediment and erosion control pursuant to 40 CFR 122.44(s) be provided to the Pyramid Lake Paiute Tribe; and

   iv. copies of all monitoring reports must be provided to the Pyramid Lake Paiute Tribe.

4. MPR100000: Commonwealth of the Northern Mariana Islands (CNMI)

   a. An Earthmoving and Erosion Control Permit shall be obtained from the CNMI DEQ prior to any construction activity covered under the NPDES general permit.

   b. All conditions and requirements set forth in the USEPA NPDES general permit for discharges from large and small construction must be complied with.

   c. A SWPPP for storm water discharges from construction activity must be approved by the Director of the CNMI DEQ prior to the submission of the NOI to USEPA. The CNMI address for the submittal of the SWPPP for approval is:

      Commonwealth of the Northern Mariana Islands
      Office of the Governor
      Director, Division of Environmental Quality (DEQ)
      P.O. Box 501304 C.K.
      Saipan, MP 96950-1304

   d. An NOI to be covered by the general permit for discharges from large and small construction sites must be submitted to CNMI DEQ (use above address) and USEPA, Region 9, in the form prescribed by USEPA, accompanied by a SWPPP approval letter from CNMI DEQ.

   e. The NOI must be postmarked seven (7) calendar days prior to any storm water discharges and a copy must be submitted to the Director of CNMI DEQ (use above address) no later than seven (7) calendar days prior to any stormwater discharges.

f. Copies of all monitoring reports required by the NPDES general permit must be submitted to CNMI DEQ (use above address).

g. In accordance with section 10.3(h) and (i) of the CNMI water quality standards, CNMI DEQ reserves the right to deny coverage under the general permit and to require submittal of an application for an individual NPDES permit based on a review of the NOI or other information made available to the Director.

F. Region 10

1. AKR100000: The State of Alaska, except Indian country

a. For Storm Water Pollution Prevention Plans

i. Operators of construction projects disturbing at least one acre of land but less than five acres of land shall submit a copy of the Notice of Intent (NOI) to the Alaska Department of Environmental Conservation (ADEC) at the same time it is submitted to the EPA. Submittals to ADEC shall be made to the following address

Alaska Department of Environmental Conservation
Wastewater Discharge/Storm Water
555 Cordova St.
Anchorage, AK 99501

ii. Operators of construction projects that disturb five or more acres of land and that are located outside the areas of the local governments described in numbers iii, iv, v, or vi below, shall submit a copy of the Storm Water Pollution Prevention Plan (SWPPP) and a copy of the NOI to ADEC for review. The SWPPP shall be accompanied by the state-required plan review fee (see 18 AAC 72.955).

iii. Within the Municipality of Anchorage

(1) Operators of construction projects disturbing one or more acres of land shall submit a copy of the SWPPP to either ADEC or the Municipality based on the project type and operator as shown in the following table

Project Type	Submit SWPPP to
Government (federal, state, municipal) road projects and other government transportation projects such as ports, railroads or airports	ADEC
Utility projects for which the utility is initiating the work	Municipality
Work that requires a Building Permit	Municipality
Non-publicly funded transportation projects	Municipality

(2) Submittal of the SWPPP to the Municipality should be made before or at the same time the NOI is submitted to the EPA and ADEC and shall be accompanied by any Municipality-required fee. Copies of the SWPPP shall be submitted to the Municipality at the following address

Municipality of Anchorage
Office of Planning Development and Public Works
4700 South Elmore Rd.
PO Box 196650
Anchorage, AK 99519-6650

(3) Submittals to ADEC shall include a copy of the SWPPP and a copy of the NOI for review and shall be accompanied by the state-required plan review fee (see 18 AAC 72.995).

iv. Within the urbanized area boundary of the Fairbanks North Star Borough check with the Borough for the latest requirements.

Fairbanks North Star Borough
Department of Public Works
PO Box 71267
Fairbanks, AK 99707

v. Within the urbanized area boundary of the City of Fairbanks

(1) Operators of privately-funded construction projects disturbing one or more acres of land shall submit a copy of the SWPPP to the City of Fairbanks.

(2) Submittal of the SWPPP to the City of Fairbanks should be made before or at the same time the NOI is submitted to the EPA and ADEC and shall be accompanied by any City-required fee. Copies of the SWPPP shall be submitted to the City of Fairbanks at the following address

City of Fairbanks
Engineering Division
800 Cushman St
Fairbanks, AK 99701

(3) Operators of publicly-funded projects disturbing one or more acres of land shall submit a copy of the SWPPP and a copy of the NOI to ADEC for review, and shall be accompanied by the state-required plan review fee (see 18 AAC 72.995).

vi. Within the urbanized area boundary of the City of North Pole

(1) Operators of privately-funded construction projects disturbing one or more acres of land shall submit a copy of the SWPPP to the City of North Pole.

(2) Submittal of the SWPPP to the City of North Pole should be made before or at the same time the NOI is submitted to the EPA and ADEC and shall be accompanied by any City-required fee. Copies of the SWPPP shall be submitted to the City of North Pole at the following address

City of North Pole
Department of Public Works
125 Snowman Lane
North Pole, AK 99705

(3) Operators of publicly-funded projects disturbing one or more acres of land shall submit a copy of the SWPPP and a copy of the NOI to ADEC for review, and shall be accompanied by the state-required plan review fee (see 18 AAC 72.995).

vii. For hardrock mines that are designed to process 500 or more tons per day and intend to file a Notice of Intent to begin construction under this permit

(1) The operator shall submit their SWPPP to ADEC for review at least 90 days before the start of construction,

(2) Representatives of the operator and the prime site construction contractor shall meet with ADEC representatives in a pre-construction conference at least 20 days before the start of construction to discuss the details of the SWPPP and stormwater management during construction,

(3) The operator shall submit to ADEC addendums to the SWPPP that address any planned physical alterations, additions to the permitted facility, or unanticipated conditions that arise during planned construction that could significantly change the nature, or increase the quantity, of pollutants discharged from the facility, and

(4) The operator shall have at least one person on-site during construction who is qualified and trained in the principles and practices of erosion and sediment control and has the authority to direct the maintenance of storm water best management practices.

b. For Post-Construction (Permanent) Storm Water Control Measures (Section 3.1.E *[Post-Construction Stormwater Management]* of the CGP)

   i. Operators of construction projects who construct, alter, install, modify, or operate any part of a storm water treatment system and are located outside the Municipality of Anchorage, shall submit a copy of the engineering plans to ADEC for review at the address given above (see 18 AAC 72.600).

   ii. Operators of construction projects who construct, alter, install, modify, or operate any part of a storm water treatment system and are located inside the Municipality of Anchorage, shall submit a copy of the engineering plans to the respective government agency based on project type, as indicated in the table in a.iii.*(1)* above, for review at the addresses given in a.i. or a.iii.*(2)* above.

2. IDR100000: The State of Idaho, except Indian country

   a. *303(d)-listed Water Bodies with Approved TMDLs.*
   Discharges of storm water will be consistent with load allocations established by the applicable TMDL.

   b. *303(d)-listed Water Bodies without Approved TMDLs (High Priority)*
   If a TMDL has not been established for a high priority 303(d)-listed water body, then discharges of storm water may not cause an increase in the total load of listed pollutant(s) in the receiving water body.

   c. *303(d)-listed Water Bodies without Approved TMDLs (Medium or Low Priority)*
   If a TMDL has not been established for a medium or low priority 303(d)-listed water body, then best management practices shall be employed as necessary to prohibit further impairment of the designated or existing beneficial uses in the receiving water body.

   d. *Best Management Practices (BMPs)*
   BMPs must be designed, implemented, and maintained by the permittee to fully protect and maintain the beneficial uses of the receiving water body. The permittee should select appropriate BMPs that are either authorized by the

appropriate designated agency as defined in Idaho Water Quality Standards (IDAPA 58.01.02), recommended in IDEQ's *Catalog of Stormwater BMPs for Idaho Cities and Counties*, or recommended by other local government entities or guidance documents.

e. *Equivalent Analysis Waiver* - Use of the "Equivalent Analysis Waiver" in Appendix D of the permit is not authorized.

f. Operators may contact the Idaho Department of Environmental Quality regional office nearest the construction activity for more information about impaired waterways:

Boise Regional Office:
1445 N. Orchard
Boise ID 83706-2239
Tel: (208)373-0550
Fax: (208)373-0287

Grangeville Satellite Office:
300 W. Main
Grangeville ID 83530
Tel: (208)983-0808
Fax: (208)983-2873

Pocatello Regional Office:
444 Hospital Way #300
Pocatello ID 83201
Tel: (208)236-6160
Fax: (208)236-6168

McCall Satellite Office:
502 N. 3rd Street #9A
P.O. Box 4654
McCall, ID 83638
Tel: (208)634-4900
Fax: (208)634-9405

Idaho Falls Regional Office:
900 N. Skyline, Suite B
Idaho Falls, ID 83402
Tel: (208)528-2650
Fax: (208)528-2695

Twin Falls Regional Office:
1363 Fillmore
Twin Falls, ID 83301
Tel: (208)736-2190
Fax: (208)736-2194

Coeur d'Alene Regional Office:
2110 Ironwood Parkway
Coeur d'Alene ID 83814
Tel: (208)769-1422
Fax: (208)769-1404

Lewiston Regional Office:
1118 "F" Street
Lewiston, ID 83501
Tel: (208)799-4370
Toll Free: 1-877-541-3304
Fax: (208)799-3451

3. ORR10000I: Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9):

a. Confederated Tribes of the Umatilla Indian Reservation.
The following conditions apply only for projects within the exterior boundaries of the Umatilla Indian Reservation:
   i. The operator shall be responsible for achieving compliance with the Confederated Tribes of the Umatilla Indian Reservation's (CTUIR) Water Quality Standards.
   ii. The operator must submit all Storm Water Pollution Prevention Plans required under this general permit to the CTUIR Water Resources Program for review and determination that the SWPPP is sufficient to meet Tribal Water Quality Standards prior to the beginning of any discharge activities taking place.
   iii. The operator must submit a copy of the Notice of Intent (NOI) to be covered by this general permit to the CTUIR Water Resources Program at the address below, at the same time it is submitted to EPA.
   iv. The operator shall be responsible for reporting an exceedance of Tribal Water Quality Standards to the CTUIR Water Resources Program at the same time it is reported to EPA.
      Confederated Tribes of the Umatilla Indian Reservation
      Water Resources Program
      P.O. Box 638
      Pendleton, OR 97801
      (541) 966-2420
   v. At least 45 days prior to beginning any discharge activities, the operator must submit a copy of the Notice of Intent to be covered under this general permit and an assessment of whether the undertaking has the potential to affect historic properties to CTUIR Tribal Historic Preservation Office (THPO) at the address below. If the project has potential to affect historic properties, the operator must define the area of potential effect (APE). The operator must provide the THPO at least 30 days to comment on the APE as defined.

vi. If the project is an undertaking, the operator must conduct a cultural resource investigation. All fieldwork must be conducted by qualified personnel (as outlined by the Secretary of the Interior's Standards and Guidelines found at http://www.nps.gov/history/local-law/arch_stnds_0.htm). All fieldwork must be documented using Oregon Reporting Standards (as outlined at http://egov.oregon.gov/OPRD/HCD/ARCH/arch_pubsandlinks.shtml). The resulting report must be submitted to the THPO for concurrence before any ground disturbing work can occur. The operator must provide the THPO at least 30 days to review and respond to all reports.
The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties.

Confederated Tribes of the Umatilla Indian Reservation
Cultural Resources Protection Program
Tribal Historic Preservation Office
P.O. Box 638
Pendleton, OR 97801
(541) 966-2340

b. Confederated Tribes of Warm Springs.
The following conditions apply only for projects on the Warm Springs Indian Reservation:

i. All activities covered by this NPDES general permit occurring within a designated riparian buffer zone as established in Ordinance 74 (Integrated Resource Management Plan or IRMP) must be reviewed, approved and permitted through the Tribe's Hydraulic Permit Application process, including payment of any applicable fees.
ii. All activities covered by this NPDES general permit must follow all applicable land management and resource conservation requirements specified in the IRMP.
iii. Operators of activities covered by this NPDES general permit must submit a Storm Water Pollution Prevention Plan to the Tribe's Water Control Board at the following address for approval at least 30 days prior to beginning construction activity:

Chair, Warm Springs Water Control Board
P.O. Box C
Warm Springs, Oregon 97761

4. WAR10000F: Federal Facilities in the State of Washington, except those located on Indian Country

a. Discharges shall not cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR Part 131.36). Discharges that are not in compliance with these standards are not authorized.

b. Prior to the discharge of stormwater and non-stormwater to waters of the state, the Permittee shall apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate best management practices (BMPs) installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.

c. Sampling & Numeric Effluent Limitations – For Sites Discharging to Certain Waterbodies on the 303(d) List or with an Applicable TMDL

   i. Permittees that discharge to water bodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH or phosphorus, shall conduct water quality sampling according to the requirements of this section.

      (1) The operator must retain all monitoring results required by this section as part of the SWPPP. All data and related monitoring records must be provided to EPA or the Washington Department of Ecology upon request.

      (2) The operator must notify EPA when the discharge turbidity or discharge pH exceeds the water quality standards as defined in Parts 10.F.4.d.ii and e.ii below, in accordance with the reporting requirements of Part G.12.F of this permit. All reports must be submitted to EPA at the following address:
      U.S EPA Region 10
      NPDES Compliance Unit - Attn: Federal Facilities Compliance Officer
      1200 6th Avenue, Suite 900
      OCE-133
      Seattle, WA 98101
      (206) 553-1846

   ii. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current listing by Ecology of impaired waters that exists on November 16, 2005, or the date when the operator's complete NOI is received by EPA, whichever is later.

Parameter identified in 303(d) listing	Parameter/Units	Analytical Method	Sampling Frequency	Water Quality Standard
Turbidity Fine Sediment Phosphorus	Turbidity/NTU	SM2130 or EPA180.1	Weekly, if discharging	If background is 50 NTU or less: 5 NTU over background; or If background is more than 50 NTU: 10% over background
High pH	pH/Standard Units	pH meter	Weekly, if discharging	In the range of 6.5 – 8.5

d. Discharges to waterbodies on the 303(d) list for turbidity, fine sediment, or phosphorus

   i. Permittees which discharge to waterbodies on the 303(d) list for turbidity, fine sediment, or phosphorus shall conduct turbidity sampling at the

following locations to evaluate compliance with the water quality standard for turbidity:

(1) Background turbidity shall be measured in the 303(d) listed receiving water immediately upstream (upgradient) or outside the area of influence of the discharge; and

(2) Discharge turbidity shall be measured at the point of discharge into the 303(d) listed receiving waterbody, inside the area of influence of the discharge; **or**
Alternatively, discharge turbidity may be measured at the point where the discharge leaves the construction site, rather than in the receiving waterbody.

ii. Based on sampling, if the discharge turbidity ever exceeds the water quality standard for turbidity (more than 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or more than a 10% increase in turbidity when the background turbidity is more than 50 NTU), all future discharges shall comply with a numeric effluent limit which is equal to the water quality standard for turbidity. If a future discharge exceeds the water quality standard for turbidity, the permittee shall:

(1) Review the SWPPP for compliance with the permit and make appropriate revisions within 7 days of the discharge that exceeded the standard;

(2) Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but no later than 10 days of the discharge that exceeded the standard;

(3) Document BMP implementation and maintenance in the site log book;

(4) Continue to sample daily until discharge turbidity meets the water quality standard for turbidity.

e. Discharges to waterbodies on the 303(d) list for High pH

i. Permittees which discharge to waterbodies on the 303(d) list for high pH shall conduct sampling at one of the following locations to evaluate compliance with the water quality standard for pH (in the range of 6.5 – 8.5):

(1) pH shall be measured at the point of discharge into the 303(d) listed waterbody, inside the area of influence of the discharge; or

(2) Alternatively, pH may be measured at the point where the discharge leaves the construction site, rather than in the receiving water.

ii. Based on the sampling set forth above, if the pH ever exceeds the water quality standard for pH (in the range of 6.5 – 8.5), all future discharges shall comply with a numeric effluent limit which is equal to the water quality standard for pH. If a future discharge exceeds the water quality standard for pH, the permittee shall:

(1) Review the SWPPP for compliance with the permit and make appropriate revisions within 7 days of the discharge;

(2) Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but no later than 10 days of the discharge that exceeded the standards;

(3) Document BMP implementation and maintenance in the site log book;

(4) Continue to sample daily until discharge meets the water quality standard for pH (in the range of 6.5 – 8.5).

f. Sampling & Limitations – For Sites Discharging to TMDLs

i. Discharges to waterbodies subject to an applicable Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus, shall be consistent with the assumptions and requirements of the TMDL.

(1) Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges shall be consistent with any specific waste load allocations or requirements established by the applicable TMDL.

a. Discharges shall be sampled weekly, or as otherwise specified by the TMDL, to evaluate compliance with the specific waste load allocations or requirements.

b. Analytical methods used to meet the monitoring requirements shall conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136.

(2) Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but no specific requirements have been identified, compliance with this permit will be assumed to be consistent with the approved TMDL.

(3) Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with this permit will be assumed to be consistent with the approved TMDL.

(4) Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

ii. Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which has been completed and approved by EPA prior to November 16, 2005, or prior to the date the operator's complete NOI is received by EPA, whichever is later.
Information on impaired waterways is available from the Department of Ecology website at:
http://www.ecy.wa.gov/programs/wq/stormwater/construction/impaired.html
or by phone: 360-407-6460.

5. WAR10000I: Indian country within the State of Washington

a. Kalispel Tribe.

The following conditions apply only for projects on the Kalispel Reservation:

i. The permittee shall be responsible for achieving compliance with the Kalispel Tribe's Water Quality Standards.
ii. The permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Kalispel Tribe Natural Resources Department at the same time as it submitted to the U.S. EPA
iii. The permittee shall submit all Storm Water Prevention Plans (SWPP) to the Kalispel Tribe Natural Resources Department thirty (30) days prior to beginning any discharge activities for review.
iv. Prior to any land disturbing activities on the Kalispel Indian Reservation and its dependent communities, the permittee shall obtain a cultural resource clearance letter from the Kalispel Natural Resource Department.
v. All tribal correspondence pertaining to the general permit for discharges of construction stormwater shall be sent to:

Kalispel Tribe Natural Resources Department
PO Box 39
Usk, WA 99180

b. Lummi Nation

The following conditions apply only for projects on the Lummi Reservation:

i. Pursuant to Lummi Code of Laws (LCL) 17.05.020(a), the operator must obtain a land use permit from the Lummi Planning Department as provided in Title 15 of the Lummi Code of Laws and regulations adopted thereunder.
ii. Pursuant to LCL 17.05.020(a), each operator shall develop and submit a Storm Water Pollution Prevention Plan to the Lummi Water Resources Division for review and approval by the Water Resources Manager prior to beginning any discharge activities.
iii. Pursuant to LCL Title 17, each operator shall be responsible for achieving compliance with the Water Quality Standards for Surface Waters of the Lummi Indian Reservation (Lummi Administrative Regulations [LAR] 17 LAR 07.010 through 17 LAR 07.210).
iv. Each operator shall submit a copy of the Notice of Intent to the Lummi Water Resources Division at the same time it is submitted to the Environmental Protection Agency (EPA).
v. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Lummi Natural Resources Department
ATTN: Water Resources Manager
2616 Kwina Road
Bellingham, WA 98226

vi. Refer to the Lummi Nation website at *http://www.lummi-nsn.gov* to review a copy of Title 17 of the Lummi Code of Laws and the references upon which the conditions identified above are based.

c. Makah Tribe

The following conditions apply only for projects on the Makah Reservation:

i. The operator shall be responsible for achieving compliance with the Makah Tribe's Water Quality Standards.
ii. The operator shall submit a Storm Water Pollution Prevention Plan to the

Makah Tribe Water Quality Program and Makah Fisheries Habitat Division for review and approval at least thirty (30) days prior to beginning any discharge activities.

iii. The operator shall submit a copy of the Notice of Intent to the Makah Tribe Water Quality Program and Makah Fisheries Habitat Division at the same time it is submitted to EPA.

iv. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Makah Fisheries Water Quality and Habitat Division
PO Box 115
Neah Bay, WA 98357

d. Puyallup Tribe of Indians.

The following conditions apply only to stormwater discharges from large and small construction activities that result in a total land disturbance of equal to or greater than one acre, where those discharges enter surface waters of the Puyallup Tribe:

i. Each permittee shall be responsible for achieving compliance with the Puyallup Tribe's Water Quality Standards, including antidegradation provisions. The Puyallup Natural Resources Department will conduct an antidegradation review for permitted activities that have the potential to affect water quality. The antidegradation review will be consistent with the Tribe's Antidegradation Implementation Procedures.

ii. The permittee shall be responsible for meeting any additional permit requirements imposed by EPA necessary to comply with the Puyallup Tribe's antidegradation policies if the discharge point is located within 1 linear mile upstream of waters designated by the Tribe.

iii. Each permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Puyallup Tribal Natural Resources Department at the address listed below at the same time it is submitted to EPA.

Puyallup Tribe of Indians
3009 E. Portland Avenue
Tacoma, WA 98404
ATTN: Natural Resources Department

iv. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to the Puyallup Tribal Natural Resources Department for review.

v. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to the Puyallup Tribal Natural Resources Department at the address listed above.

vi. The permittee shall submit all stormwater pollution prevention plans to the Puyallup Tribal Natural Resources Department for review and approval prior to beginning any activities resulting in a discharge to tribal waters.

Appendix A - Definitions and Acronyms

Definitions

"Arid Areas" means areas with an average annual rainfall of 0 to 10 inches.

"Best Management Practices" (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practice to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"Commencement of Construction Activities" means the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction-related activities (e.g., stockpiling of fill material).

"Control Measure" as used in this permit, refers to any BMP or other method used to prevent or reduce the discharge of pollutants to waters of the United States.

"CWA" means the Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C. section 1251 et seq.

"Discharge" when used without qualification means the "discharge of a pollutant."

"Discharge of Stormwater Associated with Construction Activity" as used in this permit, refers to a discharge of pollutants in stormwater from areas where soil disturbing activities (e.g., clearing, grading, or excavation), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck chute washdown, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

"Eligible" means qualified for authorization to discharge stormwater under this general permit.

"Facility" or "Activity" means any "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

"Federal Facility" means any buildings, installations, structures, land, public works, equipment, aircraft, vessels, and other vehicles and property, owned by, or constructed or manufactured for the purpose of leasing to, the Federal government.

"Final Stabilization" means that:

1. All soil disturbing activities at the site have been completed and either of the two following criteria are met:
    a. a uniform (e.g,, evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background

vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or

b. equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

2. When background native vegetation will cover less than 100 percent of the ground (e.g., arid areas, beaches), the 70 percent coverage criteria is adjusted as follows: if the native vegetation covers 50 percent of the ground, 70 percent of 50 percent (0.70 X 0.50 = 0.35) would require 35 percent total cover for final stabilization. On a beach with no natural vegetation, no stabilization is required.
3. In arid and semi-arid areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:
   a. Temporary erosion control measures (e.g., degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by you,
   b. The temporary erosion control measures are selected, designed, and installed to achieve 70 percent vegetative coverage within three years.
4. For individual lots in residential construction, final stabilization means that either:
   a. The homebuilder has completed final stabilization as specified above, or
   b. The homebuilder has established temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, final stabilization.
5. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land, staging areas for highway construction, etc.), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to ''water of the United States,'' and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization criteria (1) or (2) or (3) above.

"Indian country" is defined at 40 CFR §122.2 to mean:

1. All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;
2. All dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and
3. All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-ways running through the same.

"Large Construction Activity" is defined at 40 CFR §122.26(b)(14)(x) and incorporated here by reference. A large construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than five acres of land or will disturb less than five acres of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than five acres. Large

construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site.

"Municipal Separate Storm Sewer System" or "MS4" is defined at 40 CFR §122.26(b)(8) to mean a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

1. Owned and operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
2. Designed or used for collecting or conveying stormwater;
3. Which is not a combined sewer; and
4. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR §122.2.

"New Project" means the "commencement of construction activities" occurs after the effective date of this permit.

"Ongoing Project" means the "commencement of construction activities" occurs before the effective date of this permit.

"Operator" for the purpose of this permit and in the context of stormwater associated with construction activity, means any party associated with a construction project that meets either of the following two criteria:

1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
2. The party has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions). This definition is provided to inform permittees of EPA's interpretation of how the regulatory definitions of "owner or operator" and "facility or activity" are applied to discharges of stormwater associated with construction activity.

"Owner or operator" means the owner or operator of any ''facility or activity'' subject to regulation under the NPDES program.

"Permitting Authority" means the United States Environmental Protection Agency, EPA, a Regional Administrator of the Environmental Protection Agency or an authorized representative.

"Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

"Pollutant" is defined at 40 CFR §122.2. A partial listing from this definition includes: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial or municipal waste.

"Project Area" means:
– The areas on the construction site where stormwater discharges originate and flow toward the point of discharge into the receiving waters (including areas where excavation, site development, or other ground disturbance activities occur) and the immediate vicinity. (Example: 1. Where bald eagles nest in a tree that is on or bordering a construction site and could be disturbed by the construction activity or where grading causes stormwater to flow into a small wetland or other habitat that is on the site that contains listed species.)
– The areas where stormwater discharges flow from the construction site to the point of discharge into receiving waters. (Example: Where stormwater flows into a ditch, swale, or gully that leads to receiving waters and where listed species (such as amphibians) are found in the ditch, swale, or gully.)
– The areas where stormwater from construction activities discharge into receiving waters and the areas in the immediate vicinity of the point of discharge. (Example: Where stormwater from construction activities discharges into a stream segment that is known to harbor listed aquatic species.)
– The areas where stormwater BMPs will be constructed and operated, including any areas where stormwater flows to and from BMPs. (Example: Where a stormwater retention pond would be built.)
– The areas upstream and /or downstream from construction activities discharges into a stream segment that may be affected by the said discharges. (Example: Where sediment discharged to a receiving stream settles downstream and impacts a breeding area of a listed aquatic species.)

"Receiving water" means the "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.

"Runoff coefficient" means the fraction of total rainfall that will appear at the conveyance as runoff.

"Semi-Arid Areas" means areas with an average annual rainfall of 10 to 20 inches.

"Site" means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

"Small Construction Activity" is defined at 40 CFR §122.26(b)(15) and incorporated here by reference. A small construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than one (1) acre and less than five (5) acres of land or will disturb less than one (1) acre of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one (1) acre and less than five (5) acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site.

"Stormwater" means stormwater runoff, snow melt runoff, and surface runoff and drainage.

"Stormwater Discharge-Related Activities" as used in this permit, include: activities that cause, contribute to, or result in stormwater point source pollutant discharges, including but not limited to: excavation, site development, grading and other surface disturbance activities; and measures to control stormwater including the siting, construction and operation of BMPs to control, reduce or prevent stormwater pollution.

"Total Maximum Daily Load" or "TMDL" means the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

"Waters of the United States" is as defined at 40 CFR §122.2.

"Wetland" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

ACRONYMS

BMP - Best Management Practices
CGP - Construction General Permit
CFR - Code of Federal Regulations
CWA - Clean Water Act
EPA - United States Environmental Protection Agency
ESA - Endangered Species Act
FWS - United States Fish and Wildlife Service
MS4 - Municipal Separate Storm Sewer System
MSGP - Multi-Sector General Permit
NHPA - National Historic Preservation Act
NMFS - United States National Marine Fisheries Service
NOI - Notice of Intent

NOT - Notice of Termination
NPDES - National Pollutant Discharge Elimination System
POTW - Publicly Owned Treatment Works
SHPO - State Historic Preservation Officer
SWPPP - Stormwater Pollution Prevention Plan
THPO - Tribal Historic Preservation Officer
TMDL - Total Maximum Daily Load
WQS - Water Quality Standard

Appendix B - Permit Areas Eligible for Coverage

Permit coverage for stormwater discharges from construction activity occurring within the following areas is provided by legally separate and distinctly numbered permits:

1. EPA Region 1: CT, MA, ME, NH, RI, VT

US EPA, Region 01
Office of Ecosystem Protection
NPDES Stormwater Program
1 Congress St, Suite 1100 (CMU)
Boston, MA 02114-2023

The States of Connecticut, Maine, Rhode Island, and Vermont are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
MAR100000	Commonwealth of Massachusetts (except Indian country)
MAR10000I	Indian country within the State of Massachusetts
CTR10000I	Indian country within the State of Connecticut
NHR100000	State of New Hampshire
RIR10000I	Indian country within the State of Rhode Island
VTR10000F	Federal Facilities in the State of Vermont

2. EPA Region 2: NJ, NY, PR, VI

For NJ, NY, and VI:
US EPA, Region 02
NPDES Stormwater Program
290 Broadway, 24th Floor
New York, NY 10007-1866

For PR:
US EPA, Region 02
Caribbean Environmental Protection Division
NPDES Stormwater Program
1492 Ponce de Leon Ave
Central Europa Building, Suite 417
San Juan, PR 00907-4127

The State of New York is the NPDES Permitting Authority for the majority of discharges within its state. The State of New Jersey and the Virgin Islands are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
NYR10000I	Indian country within the State of New York
PRR100000	The Commonwealth of Puerto Rico

3. EPA Region 3: DE, DC, MD, PA, VA, WV

US EPA, Region 03
NPDES Stormwater Program
1650 Arch St
Philadelphia, PA 19103

The State of Delaware is the NPDES Permitting Authority for the majority of discharges within its state. Maryland, Pennsylvania, Virginia, and West Virginia are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
DCR100000	The District of Columbia
DER10000F	Federal Facilities in the State of Delaware

4. EPA Region 4: AL, FL, GA, KY, MS, NC, SC, TN

US EPA, Region 04
Water Management Division
NPDES Stormwater Program
61 Forsyth St SW
Atlanta, GA 30303-3104

Coverage Not Available. Construction activities in Region 4 must obtain permit coverage under an alternative permit.

5. EPA Region 5: IL, IN, MI, MN, OH, WI

US EPA, Region 05
NPDES & Technical Support
NPDES Stormwater Program
77 W Jackson Blvd
(WN-16J)
Chicago, IL 60604-3507

The States of Michigan, Minnesota, and Wisconsin are the NPDES Permitting Authority for the majority of discharges within their respective states. The States of Illinois, Indiana, and Ohio are the NPDES Permitting Authorities for all discharges within their respective states.

Permit No.	Areas of coverage/where EPA is Permitting Authority
MIR10000I	Indian country within the State of Michigan
MNR10000I	Indian country within the State of Minnesota, except the Grand Portage Band of Chippewa
WIR10000I	Indian country within the State of Wisconsin, except the Sokaogon Chippewa (Mole Lake) Community.

6. EPA Region 6: AR, LA, OK, TX, NM (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands)

US EPA, Region 06
NPDES Stormwater Program
1445 Ross Ave, Suite 1200
Dallas, TX 75202-2733

The States of Louisiana, Oklahoma, and Texas are the NPDES Permitting Authority for the majority of discharges within their respective state. The State of Arkansas is the NPDES Permitting Authority for all discharges within its respective state.

Permit No.	Areas of coverage/where EPA is Permitting Authority
LAR10000I	Indian country within the State of Louisiana
NMR100000	The State of New Mexico, except Indian country
NMR10000I	Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I.
OKR10000I	Indian country within the State of Oklahoma
OKR10000F	Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).
TXR10000F	Discharges in the State of Texas that are not under the authority of the Texas Commission on Environmental Quality (formerly TNRCC), including activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline.
TXR10000I	Indian country within the State of Texas.

7. EPA Region 7: IA, KS, MO, NE (except see Region 8 for Pine Ridge Reservation Lands)

US EPA, Region 07
NPDES Stormwater Program
901 N 5th St
Kansas City, KS 66101

The States of Iowa, Kansas, and Nebraska are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Missouri is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of coverage/where EPA is Permitting Authority
IAR10000I	Indian country within the State of Iowa
KSR10000I	Indian country within the State of Kansas
NER10000I	Indian country within the State of Nebraska, except Pine Ridge Reservation lands (see Region 8)

8. EPA Region 8: CO, MT, ND, SD, WY, UT (except see Region 9 for Goshute Reservation and Navajo Reservation Lands), the Ute Mountain Reservation in NM, and the Pine Ridge Reservation in NE.

US EPA, Region 08
NPDES Stormwater Program
999 18th St, Suite 300
(EPR-EP)
Denver, CO 80202-2466

The States of Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of coverage/where EPA is Permitting Authority
COR10000F	Federal Facilities in the State of Colorado, except those located on Indian country
COR10000I	Indian country within the State of Colorado, as well as the portion of the Ute Mountain Reservation located in New Mexico
MTR10000I	Indian country within the State of Montana
NDR10000I	Indian country within the State of North Dakota, as well as that portion of the Standing Rock Reservation located in South Dakota (except for the portion of the lands within the former boundaries of the Lake Traverse Reservation which is covered under South Dakota permit SDR10000I listed below)
SDR10000I	Indian country within the State of South Dakota, as well as the portion of the Pine Ridge Reservation located in Nebraska and the portion of the lands within the former boundaries of the Lake

	Traverse Reservation located in North Dakota (except for the Standing Rock Reservation which is covered under North Dakota permit NDR10000I listed above)
UTR10000I	Indian country within the State of Utah, except Goshute and Navajo Reservation lands (see Region 9)
WYR10000I	Indian country within the State of Wyoming

9. EPA Region 9: CA, HI, NV, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Goshute Reservation in UT and NV, the Navajo Reservation in UT, NM, and AZ, the Duck Valley Reservation in ID, and the Fort McDermitt Reservation in OR.

US EPA, Region 09
NPDES Stormwater Program
75 Hawthorne St
San Francisco, CA 94105-3901

The States of Arizona, California and Nevada are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Hawaii is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of coverage/where EPA is Permitting Authority
ASR100000	The Island of American Samoa
AZR10000I	Indian country within the State of Arizona, as well as Navajo Reservation lands in New Mexico and Utah
CAR10000I	Indian country within the State of California
GUR100000	The Island of Guam
JAR100000	Johnston Atoll
MWR100000	Midway Island and Wake Island
MPR100000	Commonwealth of the Northern Mariana Islands
NVR10000I	Indian country within the State of Nevada, as well as the Duck Valley Reservation in Idaho, the Fort McDermitt Reservation in Oregon and the Goshute Reservation in Utah

10. EPA Region 10: AK, WA, ID (except see Region 9 for Duck Valley Reservation Lands), and OR (except see Region 9 for Fort McDermitt Reservation).

US EPA, Region 10
NPDES Stormwater Program
1200 6th Ave (OW-130)
Seattle, WA 98101-1128
Phone: (206) 553-6650

The States of Oregon and Washington are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of coverage/where EPA is Permitting Authority
AKR100000	The State of Alaska, except Indian country
AKR10000I	Indian country within the state of Alaska
IDR100000	The State of Idaho, except Indian country
IDR10000I	Indian country within the State of Idaho, except Duck Valley Reservation lands (see Region 9)
ORR10000I	Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9)
WAR10000F	Federal Facilities in the State of Washington, except those located on Indian country
WAR10000I	Indian country within the State of Washington

Appendix C - Endangered Species Act Review Procedures

You must meet at least one of the six criteria in Part 1.3.C.6 to be eligible for coverage under this permit. You must follow the procedures in this Appendix to assess the potential effects of stormwater discharges and stormwater discharge-related activities on listed species and their critical habitat. When evaluating these potential effects, operators must evaluate the entire project area.

For purposes of this Appendix, the term "project area" is inclusive of the term "Action Area." Action area is defined in 50 CFR §402.02 as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.

This includes areas beyond the footprint of the construction area that may be affected by stormwater discharges and stormwater discharge related activities. "Project area" is defined in Appendix A.

(Operators who are eligible and able to certify eligibility under Criterion B, C, D, or F of Part 1.3.C.6 because of a previously issued ESA section 10 permit, a previously completed ESA section 7 consultation, or because the operator's activities were already addressed in another operator's certification of eligibility may proceed directly to Step Four.)

Step One: Determine if Listed Threatened or Endangered Species are Present On or Near Your Project Area

You must determine, to the best of your knowledge, whether listed species are located on or near your project area. To make this determination, you should:

- Determine if listed species are in your county or township. The local offices of the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and State or Tribal Heritage Centers often maintain lists of federally listed endangered or threatened species on their internet sites. Visit http://www.epa.gov/npdes/stormwater/cgp to find the appropriate site for your state or check with your local office. In most cases, these lists allow you to determine if there are listed species in your county or township.
- If there are listed species in your county or township, check to see if critical habitat has been designated and if that area overlaps or is near your project area.
- Contact your local FWS, NMFS, or State or Tribal Heritage Center to determine if the listed species could be found on or near your project area and if any critical habitat areas have been designated that overlap or are near your project area. Critical habitat areas maybe designated independently from the listed species for your county, so even if there are no listed species in your county or township, you must still contact one of the agencies mentioned above to determine if there are any critical habitat areas on or near your project area.

You can also find critical habitat designations and associated requirements at 50 CFR Parts 17 and 226. http://www.access.gpo.gov.

- If there are no listed species in your county or township, no critical habitat areas on or near your project area, or if your local FWS, NMFS, or State or Tribal Heritage Center indicates that listed species are not a concern in your part of the county or township, you may check box A on the Notice of Intent Form.
- If there are listed species and if your local FWS, NMFS, or State or Tribal Heritage Center indicates that these species could exist on or near your project area, you will need to do one or more of the following:
  - Conduct visual inspections: This method may be particularly suitable for construction sites that are smaller in size or located in non-natural settings such as highly urbanized areas or industrial parks where there is little or no natural habitat, or for construction activities that discharge directly into municipal stormwater collection systems.
  - Conduct a formal biological survey. In some cases, particularly for larger construction sites with extensive stormwater discharges, biological surveys may be an appropriate way to assess whether species are located on or near the project area and whether there are likely adverse effects to such species. Biological surveys are frequently performed by environmental consulting firms. A biological survey may in some cases be useful in conjunction with Steps Two, Three, or Four of these instructions.
  - Conduct an environmental assessment under the National Environmental Policy Act (NEPA). Such reviews may indicate if listed species are in proximity to the project area. Coverage under the CGP does not trigger such a review because the CGP does not regulate new sources (that is, dischargers subject to New Source Performance Standards under section 306 of the Clean Water Act), and is thus statutorily exempted from NEPA. See CWA section 511(c). However, some construction activities might require review under NEPA for other reasons such as federal funding or other federal involvement in the project.
  - If listed threatened or endangered species or critical habitat are present in the project area, you must look at impacts to species and/or habitat when following Steps Two through Four. Note that many but not all measures imposed to protect listed species under these steps will also protect critical habitat. Thus, meeting the eligibility requirements of this CGP may require measures to protect critical habitat that are separate from those to protect listed species.

Step Two: Determine if the Construction Activity's Stormwater Discharges or Stormwater Discharge- Related Activities Are Likely to Adversely Affect Listed Threatened or Endangered Species or Designated Critical Habitat

To receive CGP coverage, you must assess whether your stormwater discharges or stormwater discharge related activities is likely to adversely affect listed threatened or endangered species or designated critical habitat that are present on or near your project area.

Potential adverse effects from stormwater discharges and stormwater discharge-related activities include:

- *Hydrological.* Stormwater discharges may cause siltation, sedimentation or induce other changes in receiving waters such as temperature, salinity or pH. These effects will vary with the amount of stormwater discharged and the volume and condition of the receiving water. Where a stormwater discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely. Construction activity itself may also alter drainage patterns on a site where construction occurs that can impact listed species or critical habitat.
- *Habitat.* Excavation, site development, grading, and other surface disturbance activities from construction activities, including the installation or placement of stormwater BMPs, may adversely affect listed species or their habitat. Stormwater may drain or inundate listed species habitat.
- *Toxicity.* In some cases, pollutants in stormwater may have toxic effects on listed species.

The scope of effects to consider will vary with each site. If you are having difficulty determining whether your project is likely to adversely affect listed species or critical habitat, or one of the Services has already raised concerns to you, you must contact the appropriate office of the FWS, NMFS or Natural Heritage Center for assistance. If adverse effects are not likely, then you may check box E on the NOI form and apply for coverage under the CGP. If the discharge may adversely effect listed species or critical habitat, you must follow Step Three.

Step Three: Determine if Measures Can Be Implemented to Avoid Adverse Effects
If you make a preliminary determination that adverse effects are likely to occur, you can still receive coverage under Criterion E of Part 1.3.C.6 of the CGP if appropriate measures are undertaken to avoid or eliminate the likelihood of adverse effects prior to applying for CGP coverage. These measures may involve relatively simple changes to construction activities such as re-routing a stormwater discharge to bypass an area where species are located, relocating BMPs, or by changing the "footprint" of the construction activity. You should contact the FWS and/or NMFS to see what appropriate measures might be suitable to avoid or eliminate the likelihood of adverse impacts to listed species and/or critical habitat. (See 50 CFR §402.13(b)). This can entail the initiation of informal consultation with the FWS and/or NMFS (described in more detail in Step Four).

If you adopt measures to avoid or eliminate adverse affects, you must continue to abide by those measures for the duration of the construction project and coverage under the CGP. These measures must be described in the SWPPP and are enforceable CGP conditions and/or conditions for meeting the eligibility criteria in Part 1.3. If appropriate measures to avoid the likelihood of adverse effects are not available, you must follow Step Four.

Step Four: Determine if the Eligibility Requirements of Criterion B, C, D, or F of Part 1.3.C.6 Can Be Met
Where adverse effects are likely, you must contact the FWS and/or NMFS. You may still be eligible for CGP coverage if any likely adverse effects can be addressed through meeting Criterion B, C, D, or F of Part 1.3.C.6 of the CGP. These criteria are as follows:

1. *An ESA Section 7 Consultation Is Performed for Your Activity (See Criterion B or C of Part 1.3.C.6 of the CGP).*

Formal or informal ESA section 7 consultation is performed with the FWS and/or NMFS that addresses the effects of your stormwater discharges and stormwater discharge-related activities on federally-listed and threatened species and designated critical habitat. FWS and/or NMFS may request that consultation take place if any actions are identified that may affect listed species or critical habitat. In order to be eligible for coverage under this permit, consultation must result in a "no jeopardy opinion" or a written concurrence by the Service(s) on a finding that your stormwater discharge(s) and stormwater discharge-related activities are not likely to adversely affect listed species or critical habitat (For more information on consultation, see 50 CFR §402). If you receive a "jeopardy opinion," you may continue to work with the FWS and/or NMFS and your permitting authority to modify your project so that it will not jeopardize listed species or designated critical habitat.

Most consultations are accomplished through informal consultation. By the terms of this CGP, EPA has automatically designated operators as non-federal representatives for the purpose of conducting informal consultations. See Part 1.3.C.6 and 50 CFR §402.08 and §402.13. When conducting informal ESA section 7 consultation as a non-federal representative, you must follow the procedures found in 50 CFR Part 402 of the ESA regulations. You must notify FWS and/or NMFS of your intention and agreement to conduct consultation as a non-federal representative.

Consultation may occur in the context of another federal action at the construction site (e.g., where ESA section 7 consultation was performed for issuance of a wetlands dredge and fill permit for the project or where a NEPA review is performed for the project that incorporates a section 7 consultation). Any terms and conditions developed through consultations to protect listed species and critical habitat must be incorporated into the SWPPP. As noted above, operators may, if they wish, initiate consultation with the Services at Step Four.

Whether ESA section 7 consultation must be performed with either the FWS, NMFS or both Services depends on the listed species that may be affected by the operator's activity. In general, NMFS has jurisdiction over marine, estuaries, and anadromous species. Operators should also be aware that while formal section 7 consultation provides protection from incidental takings liability, informal consultation does not.

2. *An Incidental Taking Permit Under Section 10 of the ESA is Issued for the Operators Activity (See Criterion D of Part 1.3.C.6 of the CGP).*

Your construction activities are authorized through the issuance of a permit under section 10 of the ESA and that authorization addresses the effects of your stormwater discharge(s) and stormwater discharge-related activities on federally-listed species and designated critical habitat. You must follow FWS and/or NMFS procedures when applying for an ESA Section 10 permit (see 50 CFR §17.22(b)(1) for FWS and §222.22

for NMFS). Application instructions for section 10 permits for FWS and NMFS can be obtained by accessing the FWS and NMFS websites (http://www.fws.gov and http://www.nmfs.noaa.gov) or by contacting the appropriate FWS and NMFS regional office.

3. *You are Covered Under the Eligibility Certification of Another Operator for the Project Area (See Criterion F of Part 1.3.C.6 of the CGP).*

Your stormwater discharges and stormwater discharge-related activities were already addressed in another operator's certification of eligibility under Criteria A through E of Part 1.3.C.6 which also included your project area. For example, a general contractor or developer may have completed and filed an NOI for the entire project area with the necessary Endangered Species Act certifications (criteria A-E), subcontractors may then rely upon that certification and must comply with any conditions resulting from that process. By certifying eligibility under Criterion F of Part 1.3.C.6, you agree to comply with any measures or controls upon which the other operator's certification under Criterion B, C, or D of Part 1.3.C.6 was based. Certification under Criterion F of Part 1.3.C.6 is discussed in more detail in the Fact Sheet that accompanies this permit.

You must comply with any terms and conditions imposed under the eligibility requirements of Criterion A through F to ensure that your stormwater discharges and stormwater discharge-related activities are protective of listed species and/or critical habitat. Such terms and conditions must be incorporated in the project's SWPPP. If the eligibility requirements of Part 1.3.C.6 cannot be met, then you are not eligible for coverage under the CGP. In these instances, you may consider applying to EPA for an individual permit.

Appendix D - Small Construction Waivers and Instructions

These waivers are only available to stormwater discharges associated with small construction activities (i.e., 1-5 acres). As the operator of a small construction activity, you may be able to qualify for a waiver in lieu of needing to obtain coverage under this general permit based on: (A) a low rainfall erosivity factor, (B) a TMDL analysis, or (C) an equivalent analysis that determines allocations for small construction sites are not needed. Each operator, otherwise needing permit coverage, must notify EPA of its intention for a waiver. It is the responsibility of those individuals wishing to obtain a waiver from coverage under this general permit to submit a complete and accurate waiver certification as described below. Where the operator changes or another is added during the construction project, the new operator must also submit a waiver certification to be waived.

A. Rainfall Erosivity Waiver

Under this scenario the small construction project's rainfall erosivity factor calculation ("R" in the Revised Universal Soil Loss Equation) is less than 5 during the period of construction activity. The operator must certify to the EPA that construction activity will occur only when the rainfall erosivity factor is less than 5. The period of construction activity begins at initial earth disturbance and ends with final stabilization. Where vegetation will be used for final stabilization, the date of installation of a stabilization practice that will provide interim non-vegetative stabilization can be used for the end of the construction period, provided the operator commits (as a condition of waiver eligibility) to periodically inspect and properly maintain the area until the criteria for final stabilization as defined in the construction general permit have been met. If use of this interim stabilization eligibility condition was relied on to qualify for the waiver, signature on the waiver with its certification statement constitutes acceptance of and commitment to complete the final stabilization process. The operator must submit a waiver certification to EPA prior to commencing construction activities.

Note: The rainfall erosivity factor "R" is determined in accordance with Chapter 2 of Agriculture Handbook Number 703, Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE), pages 21–64, dated January 1997; United States Department of Agriculture (USDA), Agricultural Research Service.

EPA has developed an online rainfall erosivity calculator to help small construction sites determine potential eligibility for the rainfall erosivity waiver.You can access the calculator from EPA's website at: www.epa.gov/npdes/stormwater/lew. The R factor can easily be calculated by using the construction site latitude/longitude or address and estimated start and end dates of construction. This calculator may also be useful in determining the time periods during which construction activity could be waived from permit coverage. You may find that moving your construction activity by a few weeks or expediting site stabilization will allow you to qualify for the waiver. Use this online calculator or the Construction Rainfall Erosivity Waiver Fact Sheet

(www.epa.gov/npdes/pubs/fact3-1.pdf) to assist in determining the R Factor for your small construction site.

If you are the operator of the construction activity and eligible for a waiver based on low erosivity potential, you may submit a rainfall erosivity waiver electronically via EPA's eNOI system (www.epa.gov/npdes/eNOI) or provide the following information on the waiver certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operators;
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The rainfall erosivity factor calculation that applies to the active construction phase at your project site; and
5. A statement, signed and dated by an authorized representative as provided in Appendix G, Subsection 11, that certifies that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five.

You can access the waiver certification form from EPA's website at: (http://www.epa.gov/npdes/pubs/construction_waiver_form.pdf). Paper copies of the form must be sent to one of the addresses listed in Part D of this section.

Note: If the R factor is 5 or greater, you cannot apply for the rainfall erosivity waiver, and must apply for permit coverage as per Subpart 2.1 of the construction general permit, unless you qualify for the Water Quality Waiver as described below.

If your small construction project continues beyond the projected completion date given on the waiver certification, you must recalculate the rainfall erosivity factor for the new project duration. If the R factor is below five (5), you must update all applicable information on the waiver certification and retain a copy of the revised waiver as part of the site SWPPP. The new waiver certification must be submitted prior to the projected completion date listed on the original waiver form to assure your exemption from permitting requirements is uninterrupted. If the new R factor is five (5) or above, you must submit an NOI as per Part 2.

B. TMDL Waiver

This waiver is available if EPA has established or approved a TMDL that addresses the pollutant(s) of concern and has determined that controls on stormwater discharges from small construction activity are not needed to protect water quality. The pollutant(s) of concern include sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. Information on TMDLs that have been established or approved by EPA is available from EPA online at http://www.epa.gov/owow/tmdl/ and from state and tribal water quality agencies.

If you are the operator of the construction activity and eligible for a waiver based on compliance with an EPA established or approved TMDL, you must provide the following information on the Waiver Certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the water body(s) that would be receiving stormwater discharges from your construction project;
5. The name and approval date of the TMDL;
6. A statement, signed and dated by an authorized representative as provided in Appendix G, Subsection 11, that certifies that the construction activity will take place and that the stormwater discharges will occur, within the drainage area addressed by the TMDL.

C. Equivalent Analysis Waiver

This waiver is available for non-impaired waters only. The operator can develop an equivalent analysis that determines allocations for his small construction site for the pollutant(s) of concern or determines that such allocations are not needed to protect water quality. This waiver requires a small construction operator to develop an equivalent analysis based on existing in-stream concentrations, expected growth in pollutant concentrations from all sources, and a margin of safety.

If you are a construction operator who wants to use this waiver, you must develop your equivalent analysis and provide the following information to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the water bodies that would be receiving stormwater discharges from your construction project;
5. Your equivalent analysis;
6. A statement, signed and dated by an authorized representative as provided in Appendix G, Subsection 11, that certifies that the construction activity will take place and that the stormwater discharges will occur, within the drainage area addressed by the equivalent analysis.

D. Waiver Deadlines and Submissions

1. Waiver certifications must be submitted prior to commencement of construction activities.
2. If you submit a TMDL or equivalent analysis waiver request, you are not waived until EPA approves your request. As such, you may not commence construction activities until receipt of approval from EPA.
3. Late Notifications: Operators are not prohibited from submitting waiver certifications after initiating clearing, grading, excavation activities, or other construction activities. The Agency reserves the right to take enforcement for any unpermitted discharges that occur between the time construction commenced and waiver authorization is granted.

Submittal of a waiver certification is an optional alternative to obtaining permit coverage for discharges of stormwater associated with small construction activity, provided you qualify for the waiver. Any discharge of stormwater associated with small construction activity not covered by either a permit or a waiver may be considered an unpermitted discharge under the Clean Water Act. As mentioned above, EPA reserves the right to take enforcement for any unpermitted discharges that occur between the time construction commenced and either discharge authorization is granted or a complete and accurate waiver certification is submitted. EPA may notify any operator covered by a waiver that they must apply for a permit. EPA may notify any operator who has been in non-compliance with a waiver that they may no longer use the waiver for future projects. Any member of the public may petition EPA to take action under this provision by submitting written notice along with supporting justification.

Complete and accurate Rainfall Erosivity waiver certifications not otherwise submitted electronically via EPA's eNOI system (www.epa.gov/npdes/eNOI) must be sent to one of the following addresses:

Regular U.S. Mail Delivery
EPA Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Overnight/Express Mail Delivery
EPA Stormwater Notice Processing Center
Room 7420
U.S. EPA
1201Constitution Avenue, NW
Washington, DC 20004

Complete and accurate TMDL or equivalent analysis waiver requests must be sent to the applicable EPA Region office specified in Appendix B.

Appendix E - Notice of Intent Form and Instructions

From the effective date of this permit, operators are to use the Notice of Intent Form contained in this Appendix to obtain permit coverage.

This Form Replaces Form 3510-9 (8-98)
Refer to the Following Pages for Instructions

Form Approved OMB Nos. 2040-0188 and 2040-0211

NPDES FORM

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

Submission of this Notice of Intent (NOI) constitutes notice that the party identified in Section II of this form requests authorization to discharge pursuant to the NPDES Construction General Permit (CGP) permit number identified in Section I of this form. Submission of this NOI also constitutes notice that the party identified in Section II of this form meets the eligibility requirements of the CGP for the project identified in Section III of this form. Permit coverage is required prior to commencement of construction activity until you are eligible to terminate coverage as detailed in the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Refer to the instructions at the end of this form.

I. Permit Number

II. Operator Information

Name:

IRS Employer Identification Number (EIN): –

Mailing Address:

Street:

City: State: Zip Code: -

Phone: - - Fax (optional): - -

E-mail:

III. Project/Site Information

Project/Site Name:

Project Street/Location:

City: State: Zip Code: -

County or similar government subdivision:

Latitude/Longitude (Use one of three possible formats, and specify method)

Latitude 1. ___° ___′ ___″ N (degrees, minutes, seconds)
2. ___° ___. ___′ N (degrees, minutes, decimal)
3. ___. ___ ___° N (degrees decimal)

Longitude 1. ___ ___° ___′ ___″ W (degrees, minutes, seconds)
2. ___ ___° ___. ___′ W (degrees, minutes, decimal)
3. ___ ___. ___ ___° W (degrees decimal)

Method: ☐ U.S.G.S. topographic map ☐ EPA web site ☐ GPS ☐ Other:

If you used a U.S.G.S. topographic map, what was the scale? _____

Project located in Indian Country? ☐ YES ☐ NO

If yes, name of reservation, or if not part of a reservation, put "Not Applicable:" _____

Estimated Project Start Date: / / (Month Day Year)

Estimated Project Completion Date: / / (Month Day Year)

Estimated Area to be Disturbed (to the nearest quarter acre): .

IV. SWPPP Information

Has the SWPPP been prepared in advance of filing this NOI? ☐ YES ☐ NO

Location of SWPP for Viewing: ☐ Address in Section II ☐ Address in Section III ☐ Other

If other:

SWPPP Street: _____

City: _____ State: _____ Zip Code: _____ - _____

SWPPP Contact Information (if different than that in Section II):

Name: _____

Phone: ___ - ___ - ____ Fax (optional): ___ - ___ - ____

E-mail: _____

V. Discharge Information

Identify the name(s) of waterbodies to which you discharge. _____

_____

Is this discharge consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s)? ☐ YES ☐ NO

VI. Endangered Species Protection

Under which criterion of the permit have you satisfied your ESA eligibility obligations?

☐ A ☐ B ☐ C ☐ D ☐ E ☐ F

If you select criterion F, provide permit tracking number of operator under which you are certifying eligibility:

_____

VII. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: _____

Title: _____

Signature: _____ Date: _____

E-mail: _____

NOI Preparer (Complete if NOI was prepared by someone other than the certifier)

Prepared by: _____

Organization: _____

Phone: ___ - ___ - ____ Ext. ___ E-mail: _____

Instructions for Completing EPA Form 3510-9

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

NPDES Form Date | This Form Replaces Form 3510-9 (8/98) | Form Approved OMB Nos. 2040-0188 and 2040-0211

Who Must File an NOI Form
Under the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et. seq.; the Act), federal law prohibits storm water discharges from certain construction activities to waters of the U.S. unless that discharge is covered under a National Pollutant Discharge Elimination System (NPDES) Permit. Operator(s) of construction sites where one or more acres are disturbed, smaller sites that are part of a larger common plan of development or sale where there is a cumulative disturbance of at least one acre, or any other site specifically designated by the Director, must submit an NOI to obtain coverage under an NPDES general permit. Each person, firm, public organization, or any other entity that meets either of the following criteria must file this form: (1) they have operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (2) they have day-to-day operational control of those activities at the project necessary to ensure compliance with SWPPP requirements or other permit conditions. If you have questions about whether you need an NPDES storm water permit, or if you need information to determine whether EPA or your state agency is the permitting authority, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Storm Water Notice Processing Center at (866) 352-7755.

Where to File NOI Form
See the applicable CGP for information on where to send your completed NOI form.

Completing the Form
Obtain and read a copy of the appropriate EPA Storm Water Construction General Permit for your area. To complete this form, type or print uppercase letters, in the appropriate areas only. Please place each character between the marks (abbreviate if necessary to stay within the number of characters allowed for each item). Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions on this form, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Storm Water Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink . do not send a photocopied signature.

Section I. Permit Number
Provide the number of the permit under which you are applying for coverage (see Appendix B of the general permit for the list of eligible permit numbers).

Section II. Operator Information
Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application. An operator of a project is a legal entity that controls at least a portion of site operations and is not necessarily the site manager. Provide the employer identification number (EIN from the Internal Revenue Service; IRS), also commonly referred to as your taxpayer ID. If the applicant does not have an EIN enter "NA" in the space provided. Also provide the operator's mailing address, telephone number, fax number (optional) and e-mail address (to be notified via e-mail of NOI approval when available). Correspondence for the NOI will be sent to this address.

Section III. Project/Site Information
Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for permit coverage to be granted.

The applicant must also provide the latitude and longitude of the facility either in degrees, minutes, seconds; degrees, minutes, decimal; or decimal format. The latitude and longitude of your facility can be determined in several different ways, including through the use of global positioning system (GPS) receivers, U.S. Geological Survey (U.S.G.S.) topographic or quadrangle maps, and EPA's web-based siting tools, among others. Refer to *www.epa.gov/npdes/stormwater/cgp* for further guidance on the use of these methodologies. For consistency, EPA requests that measurements be taken from the approximate center of the construction site. Applicants must specify which method they used to determine latitude and longitude. If a U.S.G.S. topographic map is used, applicants are required to specify the scale of the map used.

Indicate whether the project is in Indian country, and if so, provide the name of the Reservation. If the project is in Indian Country Lands that are not part of a Reservation, indicate "not applicable" in the space provided.

Enter the estimated construction start and completion dates using four digits for the year (i.e., 05/27/1998). Enter the estimated area to be disturbed including but not limited to: grubbing, excavation, grading, and utilities and infrastructure installation. Indicate to the nearest quarter acre. Note: 1 acre = 43,560 sq. ft.

Section IV. SWPPP Information
Indicate whether or not the SWPPP was prepared in advance of filing the NOI form. Check the appropriate box for the location where the SWPPP may be viewed. Provide the name, fax number (optional), and e-mail address of the contact person if different than that listed in Section II of the NOI form.

Section V. Discharge Information
Enter the name(s) of receiving waterbodies to which the project's storm water will discharge. These should be the first bodies of water that the discharge will reach. (Note: If you discharge to more than one waterbody, please indicate all such waters in the space provided and attach a separate sheet if necessary.) For example, if the discharge leaves your

site and travels through a roadside swale or a storm sewer and then enters a stream that flows to a river, the stream would be the receiving waterbody. Waters of the U.S. include lakes, streams, creeks, rivers, wetlands, impoundments, estuaries, bays, oceans, and other surface bodies of water within the confines of the U.S. and U.S. coastal waters. Waters of the U.S. do not include man-made structures created solely for the purpose of wastewater treatment. U.S. Geological Survey topographical maps may be used to make this determination. If the map does not provide a name, use a format such as "unnamed tributary to Cross Creek". If you discharge into a municipal separate storm sewer system (MS4), you must identify the waterbody into which that portion of the storm sewer discharges. That information should be readily available from the operator of the MS4.

Indicate whether your storm water discharges from construction activities will be consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s). To answer this question, refer to *www.epa.gov/npdes/stormwater/cgp* for state- and regional-specific TMDL information related to the construction general permit. You may also have to contact your EPA regional office or state agency. If there are no applicable TMDLs or no related requirements, please check the "yes" box in the NOI form.

Section VI. Endangered Species Information

Indicate for which criterion (i.e., A, B, C, D, E, or F) of the permit the applicant is eligible with regard to protection of federally listed endangered and threatened species, and designated critical habitat. See Part 1.3.C.6 and Appendix C of the permit. If you select criterion F, provide the permit tracking number of the operator under which you are certifying eligibility. The permit tracking number is the number assigned to the operator by the Storm Water Notice Processing Center after EPA acceptance of a complete NOI.

Section VII. Certification Information

All applications, including NOIs, must be signed as follows: *For a corporation:* By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

Include the name, title, and email address of the person signing the form and the date of signing. An unsigned or undated NOI form will not be considered eligible for permit coverage. If the NOI was prepared by someone other than the certifier (for example, if the NOI was prepared by the facility SWPPP contact or a consultant for the certifier's signature), include the name, organization, phone number and email address of the NOI preparer.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 3.7 hours. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch 2136, U.S. Environmental Protection, Agency, 1200 Pennsylvania Avenue, NW, Washington, D.C. 20460. Include the OMB control number on any correspondence. Do not send the completed form to this address.

Visit this website for mailing instructions:
www.epa.gov/npdes/stormwater/mail

Visit this website for instructions on how to submit electronically:
www.epa.gov/npdes/stormwater/enoi

Appendix F - Notice of Termination Form and Instructions
From the effective date of this permit, operators are to use the Notice of Termination Form contained in this Appendix to terminate permit coverage.

This Form Replaces Form 3517-7 (8-98)
Refer to the Following Page for Instructions

Form Approved OMB Nos. 2040-0086 and 2040-0211

NPDES FORM

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge stormwater associated with construction activity under the NPDES program from the site identified in Section III of this form. All necessary information must be included on this form. Refer to the instructions at the end of this form.

I. Permit Information

NPDES Stormwater General Permit Tracking Number: ☐☐☐☐☐☐☐☐☐

Reason for Termination (Check only one):

- ☐ Final stabilization has been achieved on all portions of the site for which you are responsible.
- ☐ Another operator has assumed control, according to Appendix G, Section 11.C of the CGP, over all areas of the site that have not been finally stabilized.
- ☐ Coverage under an alternative NPDES permit has been obtained.
- ☐ For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

II. Operator Information

Name: _____

IRS Employer Identification Number (EIN): ☐☐ – ☐☐☐☐☐☐☐

Mailing Address:

Street: _____

City: _____ State: ☐☐ Zip Code: ☐☐☐☐☐-☐☐☐☐

Phone: ☐☐☐-☐☐☐-☐☐☐☐ Fax (optional): ☐☐☐-☐☐☐-☐☐☐☐

E-mail: _____

III. Project/Site Information

Project/Site Name: _____

Project Street/Location: _____

City: _____ State: ☐☐ Zip Code: ☐☐☐☐☐-☐☐☐☐

County or similar government subdivision: _____

IV. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: _____

Print Title: _____

Email: _____

Signature: _____

Date: _____

Instructions for Completing EPA Form 3510-13

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

NPDES Form | This Form Replaces Form 3517-7 (8-98) | Form Approved OMB Nos. 2040-0086 and 2040-0211

Who May File an NOT Form
Permittees who are presently covered under the EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity may submit an NOT form when final stabilization has been achieved on all portions of the site for which you are responsible; another operator has assumed control in accordance with Appendix G, Section 11.C of the General Permit over all areas of the site that have not been finally stabilized; coverage under an alternative NPDES permit has been obtained; or for residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

"Final stabilization" means that all soil disturbing activities at the site have been completed and that a uniform perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. See "final stabilization" definition in Appendix A of the Construction General Permit for further guidance where background native vegetation covers less than 100 percent of the ground, in arid or semi-arid areas, for individual lots in residential construction, and for construction projects on land used for agricultural purposes.

Completing the Form
Type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Stormwater Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink - do not send a photocopied signature.

Section I. Permit Number
Enter the existing NPDES Stormwater General Permit Tracking Number assigned to the project by EPA's Stormwater Notice Processing Center. If you do not know the permit tracking number, refer to *www.epa.gov/npdes/stormwater/cgp* or contact the Stormwater Notice Processing Center at (866) 352-7755.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box. Check only one:

Final stabilization has been achieved on all portions of the site for which you are responsible.

Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized.

Coverage under an alternative NPDES permit has been obtained.

For residential construction only, if temporary stabilization has been completed and the residence has been transferred to the homeowner.

Section II. Operator Information
Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application and is covered by the permit tracking number identified in Section I. The operator of the project is the legal entity that controls the site operation, rather than the site manager. Provide the employer identification number (EIN from the Internal Revenue Service; IRS). If the applicant does not have an EIN enter "NA" in the space provided. Enter the complete mailing address, telephone number, and email address of the operator. Optional: enter the fax number of the operator.

Section III. Project/Site Information
Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for termination of permit coverage to be valid.

Section IV. Certification Information
All applications, including NOIs, must be signed as follows:
For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

Include the name, title, and email address of the person signing the form and the date of signing. An unsigned or undated NOT form will not be considered valid termination of permit coverage.

Paperwork Reduction Act Notice
Public reporting burden for this application is estimated to average 0.5 hours per notice, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Include the OMB number on any correspondence. Do not send the completed form to this address.

Visit this website for mailing instruction:
www.epa.gov/npdes/stormwater/mail

Visit this website for instructions on how to submit electronically:
www.epa.gov/npdes/stormwater/enoi

Appendix G - Standard Permit Conditions

STANDARD PERMIT CONDITIONS

1. Duty To Comply

You must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

A. You must comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

B. The Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $27,500 per day for each violation).

   The Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

C. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Pursuant to 40 CFR Part 19 and the Act, administrative penalties for Class I violations are not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $27,500). Pursuant to 40 CFR Part 19 and the Act, penalties for Class II violations are not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $137,500).

2. Duty to Reapply

If you wish to continue an activity regulated by this permit after the expiration date of this permit, you must apply for and obtain a new permit.

3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for you in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate

You must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance

You must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by you to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by you only when the operation is necessary to achieve compliance with the conditions of this permit.

6. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privileges.

8. Duty to Provide Information

You must furnish to EPA, within a reasonable time, any information which EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. You must also furnish to EPA upon request, copies of records required to be kept by this permit.

9. Inspection and Entry

You must allow EPA, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

A. Enter upon your premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
D. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

10. Monitoring and Records

A. Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.
B. You must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of EPA at any time.
C. Records of monitoring information must include:
   1. The date, exact place, and time of sampling or measurements;
   2. The individual(s) who performed the sampling or measurements;
   3. The date(s) analyses were performed
   4. The individual(s) who performed the analyses;
   5. The analytical techniques or methods used; and
   6. The results of such analyses.
D. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.
E. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

11. Signatory Requirements

A. All applications, including NOIs, must be signed as follows:
   1. For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any

other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
3. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

B. All reports required by this permit, including SWPPPs, must be signed by a person described in Appendix G, Subsection 11.A above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   1. The authorization is made in writing by a person described in Appendix G, Subsection 11.A;
   2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
   3. The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

C. Changes to Authorization. If an authorization under Part 2.1 is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new NOI satisfying the requirements of Part 2.1 must be submitted to EPA prior to or together with any reports, information, or applications to be signed by an authorized representative. The change in authorization must be submitted within the time frame specified in Part 2.4, and sent to the address specified in Part 2.2.

D. Any person signing documents required under the terms of this permit must include the following certification:
   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons

directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

E. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

12. Reporting Requirements

A. Planned changes. You must give notice to EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
   1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b); or
   2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR §122.42(a)(1).

B. Anticipated noncompliance. You must give advance notice to EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Transfers. This permit is not transferable to any person except after notice to EPA. EPA may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (See 40 CFR §122.61; in some cases, modification or revocation and reissuance is mandatory.)

D. Monitoring reports. Monitoring results must be reported at the intervals specified elsewhere in this permit.
   1. Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by EPA for reporting results of monitoring of sludge use or disposal practices.
   2. If you monitor any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by EPA.
   3. Calculations for all limitations which require averaging of measurements must use an arithmetic mean.

E. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

F. Twenty-four hour reporting.

1. You must report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time you become aware of the circumstances. A written submission must also be provided within five days of the time you become aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
2. The following shall be included as information which must be reported within 24 hours under this paragraph.
   a. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
   b. Any upset which exceeds any effluent limitation in the permit
   c. Violation of a maximum daily discharge limitation for any of the pollutants listed by EPA in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

13. EPA may waive the written report on a case-by-case basis for reports under Appendix G, Subsection 12.F.2 if the oral report has been received within 24 hours.

G. Other noncompliance. You must report all instances of noncompliance not reported under Appendix G, Subsections 12.D, 12.E, and 12.F, at the time monitoring reports are submitted. The reports must contain the information listed in Appendix G, Subsection 12.F.

H. Other information. Where you become aware that you failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Permitting Authority, you must promptly submit such facts or information.

13. Bypass

A. Definitions.
   1. Bypass means the intentional diversion of waste streams from any portion of a treatment facility
   2. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

B. Bypass not exceeding limitations. You may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Appendix G, Subsections 13.C and 13.D.

C. Notice–
   1. Anticipated bypass. If you know in advance of the need for a bypass, you must submit prior notice, if possible at least ten days before the date of the bypass.
   2. Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Appendix G, Subsection 12.F (24-hour notice).

D. Prohibition of bypass.
   1. Bypass is prohibited, and EPA may take enforcement action against you for bypass, unless:
      a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
      b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
      c. You submitted notices as required under Appendix G, Subsection 13.C.
   2. EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above in Appendix G, Subsection 13.D.1.

14. Upset

A. Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

B. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Appendix G, Subsection 14.C are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

C. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
   1. An upset occurred and that you can identify the cause(s) of the upset;
   2. The permitted facility was at the time being properly operated; and
   3. You submitted notice of the upset as required in Appendix G, Subsection 12.F.2.b(24 hour notice).
   4. You complied with any remedial measures required under Appendix G, Section 4.

D. Burden of proof. In any enforcement proceeding, you, as the one seeking to establish the occurrence of an upset, has the burden of proof.

Appendix C

Operator Certifications

Authorization Designations

Subcontractor Certifications

Operator Certification – Stockbridge-Munsee Community, Band of Mohican Indians

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Operator _____

Name: _____

Signature: _____

Title: _____

Company: _____

Date _____

Note: The form must be signed by a responsible corporate officer of the Operator or by a duly authorized representative in accordance with Appendix G, Section 11B. of the General Permit

Operator Certification – Trading Cove New York

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Operator _____

Name: _____

Signature: _____

Title: _____

Company: _____

Date _____

Note: The form must be signed by a responsible corporate officer of the Operator or by a duly authorized representative in accordance with Appendix G, Section 11B. of the General Permit

Operator Certification – CONTRACTOR - TBD.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Operator _____

Name: _____

Signature: _____

Title: _____

Company: _____

Date _____

Note: The form must be signed by a responsible corporate officer of the Operator or by a duly authorized representative in accordance with Appendix G, Section 11B. of the General Permit

Authorization Designation Form – Contractor-

In accordance with the NPDES General Permit for Storm Water Discharges from Construction Activities, Appendix G Section 11B, _____is hereby duly authorized to sign on my behalf, all reports and certifications that are required under the Permit and as part of this Storm Water Pollution Prevention Plan.

Operator

Signature: _____

Print Name: _____

Title: _____

Company: _____

Date _____

If designation is made insert the name of an individual or the title of the position of the party(ies) to be designated.

Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Title: Stockbridge – Munsee Casino. Thompson, NY

Operator(s): Stockbridge-Munsee Community, Band of Mohican Indians and Trading Cove New York

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the BMPs and practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

_____

Signature: _____

Title: _____

Date: _____

Appendix D

Notices of Intent

Notices of Coverage (to be inserted upon receipt)

Blank Notice of Termination

This Form Replaces Form 3510-9 (8-98)
Refer to the Following Pages for Instructions

Form Approved OMB Nos. 2040-0188 and 2040-0211

NPDES FORM

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

Submission of this Notice of Intent (NOI) constitutes notice that the party identified in Section II of this form requests authorization to discharge pursuant to the NPDES Construction General Permit (CGP) permit number identified in Section I of this form. Submission of this NOI also constitutes notice that the party identified in Section II of this form meets the eligibility requirements of the CGP for the project identified in Section III of this form. Permit coverage is required prior to commencement of construction activity until you are eligible to terminate coverage as detailed in the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Refer to the instructions at the end of this form.

I. Permit Number

NYR100001

II. Operator Information

Name: TRADING COVE NEW YORK

IRS Employer Identification Number (EIN): ___ - _____

Mailing Address:

Street:

City: State: Zip Code: -

Phone: - - Fax (optional): - -

E-mail:

III. Project/Site Information

Project/Site Name: STOCKBRIDGE MUNSEE CASNIO

Project Street/Location: HEIDEN ROAD

City: THOMPSON State: NY Zip Code: 12738 -

County or similar government subdivision: SULLIVAN

Latitude/Longitude (Use one of three possible formats, and specify method)

Latitude 1. 42° 38' 46" N (degrees, minutes, seconds)
2. __° __.__' N (degrees, minutes, decimal)
3. __.__ __° N (degrees decimal)

Longitude 1. -74° 37' 26" W (degrees, minutes, seconds)
2. ___° __.__' W (degrees, minutes, decimal)
3. ___.__ __° W (degrees decimal)

Method: ☐ U.S.G.S. topographic map ☑ EPA web site ☐ GPS ☐ Other:

If you used a U.S.G.S. topographic map, what was the scale? TRAILS.COM

Project located in Indian Country? ☑ YES ☐ NO

If yes, name of reservation, or if not part of a reservation, put "Not Applicable:"

Estimated Project Start Date: __ / __ / ____ (Month Day Year)

Estimated Project Completion Date: __ / __ / ____ (Month Day Year)

Estimated Area to be Disturbed (to the nearest quarter acre): ____.__

IV. SWPPP Information

Has the SWPPP been prepared in advance of filing this NOI? ☑ YES ☐ NO

Location of SWPP for Viewing: ☐ Address in Section II ☑ Address in Section III ☐ Other

If other:

SWPPP Street:

City: State: Zip Code: -

SWPPP Contact Information (if different than that in Section II):

Name:

Phone: - - Fax (optional): - -

E-mail:

V. Discharge Information

Identify the name(s) of waterbodies to which you discharge. NEVERSINK RIVER, UNNAMED TRIBUTARIES TO NEVERSINK RIVER, UNNAMED WETLANDS AND PONDS

Is this discharge consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s)? ☑ YES ☐ NO

VI. Endangered Species Protection

Under which criterion of the permit have you satisfied your ESA eligibility obligations?

☑ A ☐ B ☐ C ☐ D ☐ E ☐ F

If you select criterion F, provide permit tracking number of operator under which you are certifying eligibility:

VII. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name:

Title:

Signature: Date:

E-mail:

NOI Preparer (Complete if NOI was prepared by someone other than the certifier)

Prepared by:

Organization: TETRA TECH RIZZO

Phone: - - Ext. E-mail:

This Form Replaces Form 3510-9 (8-98)
Refer to the Following Pages for Instructions

Form Approved OMB Nos. 2040-0188 and 2040-0211

NPDES FORM

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

Submission of this Notice of Intent (NOI) constitutes notice that the party identified in Section II of this form requests authorization to discharge pursuant to the NPDES Construction General Permit (CGP) permit number identified in Section I of this form. Submission of this NOI also constitutes notice that the party identified in Section II of this form meets the eligibility requirements of the CGP for the project identified in Section III of this form. Permit coverage is required prior to commencement of construction activity until you are eligible to terminate coverage as detailed in the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Refer to the instructions at the end of this form.

I. Permit Number

NYR10000I

II. Operator Information

Name: STOCKBRIDGE MUNSEE COMMUNITY

IRS Employer Identification Number (EIN): ___ - _____

Mailing Address:

Street:

City: State: Zip Code: -

Phone: - - Fax (optional): - -

E-mail:

III. Project/Site Information

Project/Site Name: STOCKBRIDGE MUNSEE CASNIO

Project Street/Location: HEIDEN ROAD

City: THOMPSON State: NY Zip Code: 12738 -

County or similar government subdivision: SULLIVAN

Latitude/Longitude (Use one of three possible formats, and specify method)

Latitude 1. 42°38'46" N (degrees, minutes, seconds)
2. __°__.__' N (degrees, minutes, decimal)
3. __.__ __° N (degrees decimal)

Longitude 1. -74°37'26" W (degrees, minutes, seconds)
2. ___°__.__' W (degrees, minutes, decimal)
3. ___.__ __° W (degrees decimal)

Method: ☐ U.S.G.S. topographic map ☑ EPA web site ☐ GPS ☐ Other:

If you used a U.S.G.S. topographic map, what was the scale? TRAILS.COM

Project located in Indian Country? ☑ YES ☐ NO

If yes, name of reservation, or if not part of a reservation, put "Not Applicable:" _____

Estimated Project Start Date: __/__/____ (Month Day Year) Estimated Project Completion Date: __/__/____ (Month Day Year)

Estimated Area to be Disturbed (to the nearest quarter acre): ____.__

IV. SWPPP Information

Has the SWPPP been prepared in advance of filing this NOI? ☑ YES ☐ NO

Location of SWPP for Viewing: ☐ Address in Section II ☑ Address in Section III ☐ Other

If other:

SWPPP Street:

City: State: Zip Code: -

SWPPP Contact Information (if different than that in Section II):

Name:

Phone: - - Fax (optional): - -

E-mail:

V. Discharge Information

Identify the name(s) of waterbodies to which you discharge. NEVERSINK RIVER, UNNAMED TRIBUTARIES TO NEVERSINK RIVER, UNNAMED WETLANDS AND PONDS

Is this discharge consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s)? ☑ YES ☐ NO

VI. Endangered Species Protection

Under which criterion of the permit have you satisfied your ESA eligibility obligations?

☑ A ☐ B ☐ C ☐ D ☐ E ☐ F

If you select criterion F, provide permit tracking number of operator under which you are certifying eligibility:

VII. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name:

Title:

Signature: _____ Date:

E-mail: _____

NOI Preparer (Complete if NOI was prepared by someone other than the certifier)

Prepared by:

Organization: TETRA TECH RIZZO

Phone: - - Ext. E-mail: _____

Appendix F - Notice of Termination Form and Instructions
From the effective date of this permit, operators are to use the Notice of Termination Form contained in this Appendix to terminate permit coverage.

This Form Replaces Form 3517-7 (8-98)
Refer to the Following Page for Instructions

Form Approved OMB Nos. 2040-0086 and 2040-0211

NPDES FORM

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge stormwater associated with construction activity under the NPDES program from the site identified in Section III of this form. All necessary information must be included on this form. Refer to the instructions at the end of this form.

I. Permit Information

NPDES Stormwater General Permit Tracking Number: _____

Reason for Termination (Check only one):

- ☐ Final stabilization has been achieved on all portions of the site for which you are responsible.
- ☐ Another operator has assumed control, according to Appendix G, Section 11.C of the CGP, over all areas of the site that have not been finally stabilized.
- ☐ Coverage under an alternative NPDES permit has been obtained.
- ☐ For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

II. Operator Information

Name: _____

IRS Employer Identification Number (EIN): ___ – _____

Mailing Address:

Street: _____

City: _____ State: ___ Zip Code: _____-____

Phone: ___-___-____ Fax (optional): ___-___-____

E-mail: _____

III. Project/Site Information

Project/Site Name: _____

Project Street/Location: _____

City: _____ State: ___ Zip Code: _____-____

County or similar government subdivision: _____

IV. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: _____

Print Title: _____

Email: _____

Signature: _____

Date: _____

Instructions for Completing EPA Form 3510-13

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Stormwater Discharges Associated with Construction Activity

NPDES Form | This Form Replaces Form 3517-7 (8-98) | Form Approved OMB Nos. 2040-0086 and 2040-0211

Who May File an NOT Form
Permittees who are presently covered under the EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity may submit an NOT form when final stabilization has been achieved on all portions of the site for which you are responsible; another operator has assumed control in accordance with Appendix G, Section 11.C of the General Permit over all areas of the site that have not been finally stabilized; coverage under an alternative NPDES permit has been obtained; or for residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

"Final stabilization" means that all soil disturbing activities at the site have been completed and that a uniform perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. See "final stabilization" definition in Appendix A of the Construction General Permit for further guidance where background native vegetation covers less than 100 percent of the ground, in arid or semi-arid areas, for individual lots in residential construction, and for construction projects on land used for agricultural purposes.

Completing the Form
Type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Stormwater Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink - do not send a photocopied signature.

Section I. Permit Number
Enter the existing NPDES Stormwater General Permit Tracking Number assigned to the project by EPA's Stormwater Notice Processing Center. If you do not know the permit tracking number, refer to *www.epa.gov/npdes/stormwater/cgp* or contact the Stormwater Notice Processing Center at (866) 352-7755.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box. Check only one:

Final stabilization has been achieved on all portions of the site for which you are responsible.

Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized.

Coverage under an alternative NPDES permit has been obtained.

For residential construction only, if temporary stabilization has been completed and the residence has been transferred to the homeowner.

Section II. Operator Information
Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application and is covered by the permit tracking number identified in Section I. The operator of the project is the legal entity that controls the site operation, rather than the site manager. Provide the employer identification number (EIN from the Internal Revenue Service; IRS). If the applicant does not have an EIN enter "NA" in the space provided. Enter the complete mailing address, telephone number, and email address of the operator. Optional: enter the fax number of the operator.

Section III. Project/Site Information
Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., intersection of State Highways 61 and 34). Complete site information must be provided for termination of permit coverage to be valid.

Section IV. Certification Information
All applications, including NOIs, must be signed as follows:
For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

Include the name, title, and email address of the person signing the form and the date of signing. An unsigned or undated NOT form will not be considered valid termination of permit coverage.

Paperwork Reduction Act Notice
Public reporting burden for this application is estimated to average 0.5 hours per notice, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Include the OMB number on any correspondence. Do not send the completed form to this address.

Visit this website for mailing instruction:
www.epa.gov/npdes/stormwater/mail

Visit this website for instructions on how to submit electronically:
www.epa.gov/npdes/stormwater/enoi

Appendix E

Construction Site Inspection Report Forms (Pages 1 – 4)

Grading and Stabilization Activities Log

Corrective Action Log

SWPPP Amendment Log

Training Log

Storm Water Construction Site Inspection Report

PROJECT: STOCKBRIGE –MUNSEE CASINO

 Date of Inspection: _____

General Information	
Project Name	Stockbridge-Munsee Casino
Location	Thompson, New York
Inspector's Name(s)	
Inspector's Title(s)	
Inspector's Contact Information	
Describe present phase of construction	

Type of Inspection:

❑ **Regular (every 7 calendar days)** ❑ **Regular (every 14 calendar days and within 24 hours of a rain event of 0.5 inches or greater)**

❑ **Pre-Storm** ❑ **Post-Storm**

Weather Information

Has it rained since the last inspection?
❑Yes ❑No

If yes, provide:

Start Date & Time: _____ **Approximate Rainfall (in):** _____

Approximate Storm Duration (hrs): _____

Weather at the time of inspection?
❑ Clear ❑ Cloudy ❑ Rain ❑ Sleet ❑Snow ❑ High winds

Do you suspect that any sediment laden discharges may have occurred since the last inspection?
❑Yes ❑No

Are there any storm water discharges at the time of inspection?
❑Yes ❑No

Site-Specific BMPs – page 2 of 4

BMP Description	BMP Installed & Operating Properly?	Corrective Action Needed and Notes
Stabilized Construction Exit (s)	❑Yes ❑No ❑ N/A	
Silt fence	❑Yes ❑No ❑ N/A	
Fiber Roll	❑Yes ❑No ❑ N/A	
Temporary Sediment Basin	❑Yes ❑No ❑ N/A	
Catch basin inlet protection – silt bags	❑Yes ❑No ❑ N/A	
Catch basin inlet protection – gravel drop inlet	❑Yes ❑No ❑ N/A	
Concrete washout area	❑Yes ❑No ❑ N/A	
Surface roughening	❑Yes ❑No ❑ N/A	
Temporary seeding	❑Yes ❑No ❑ N/A	
Temporary mulching	❑Yes ❑No ❑ N/A	
Stockpile management	❑Yes ❑No ❑ N/A	
Dust control	❑Yes ❑No ❑ N/A	
Pipe Slope Drain	❑Yes ❑No ❑ N/A	
Rip Rap outlet	❑Yes ❑No ❑ N/A	
Erosion Control Blanket	❑Yes ❑No ❑ N/A	
Stone Check Dams	❑Yes ❑No ❑ N/A	
Others:	❑Yes ❑No ❑ N/A	

Overall Site Issues – page 3 of 4

BMP/activity	Implemented?	Maintained?	Corrective Action Needed and Notes
Are all slopes and disturbed areas not actively being worked properly stabilized?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Are perimeter controls and sediment adequately installed (toed-in and staked?)	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Are natural resource areas (wetlands, trees to be protected) protected with barriers or similar BMP's?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Is the construction exit preventing sediment from being tracked into the street?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Are stockpiles not in active use covered and surrounded by perimeter protection?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Are storm drain inlets properly protected?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Are discharge points 1 and 2 and receiving waters free of turbidity and sediment deposits?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Is trash/litter collected and placed in covered dumpsters?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Are concrete washout facilities available, clearly marked, and properly used?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Are allowable non –stormwater discharges (dewatering) properly controlled?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	

Check Box if:

☐ No incidents of non-compliance were found and I certify that this inspection found this site to be fully in compliance with both the Stormwater Pollution Prevention Plan and EPA's Construction General Permit.

Inspector's Certification Statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature: _____

Print Name: _____

Title: _____

Company: _____

Date: _____

Grading and Stabilization Activities Log- SAMPLE to be updated based on actual activities

Date Grading Activity Initiated	Description of Grading Activity	Date Grading Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures are Initiated	Description of Stabilization Measure and Location
	Temporary sediment basin A			
	Temporary sediment basin B			
	Temporary sediment basin C			
	Excavation activities			
	Utility installations			
	Slope Grading			
	Permanent stormwater system			

Corrective Action Log

This corrective action log is provided to track BMP maintenance activities which occurred but were not the result of a formal inspection.

BMP	Action Taken	Date Completed	Performed by

SWPPP Amendment Log

Project Name: Stockbridge-Munsee Casino

Amendment No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

Training Log – Storm Water Pollution Prevention Plan
Topic: (check as appropriate)

- ☐ Soil Stabilization
- ☐ Erosion Controls
- ☐ Sedimentation Controls
- ☐ Runoff Management Controls
- ☐ Good Housekeeping/Materials Management
- ☐ Sediment Tracking
- ☐ Dust Control
- ☐ _____ (Other)

Specific Training Objective: _____

_____

Date: _____ **Location:** _____

Instructor: _____

Attendance Roster

Name	Company	Signature

Project Manager _____

Appendix F

Emergency Contact Information

Reportable Quantity Release Form

Emergency Contact Information

Contact Information	
Thompson Fire Department	
Emergency	
Business	
Thompson Police Department	
Emergency	
Business	
Thompson Health Department	
NY Department of Environmental Conservation	
Emergency Response - hazardous material or oil spill	1-888-304-1133
National Response Center	1-800-424-8802 or 202-867-2675
U.S. Environmental Protection Agency (Region XXX)	
Clean Up Operator: (to be determined by Contractor)	TBD

Reportable Quantity Release Form

The discharges of hazardous substances or oil in storm water discharges from construction sites must be prevented or minimized in accordance with the SWPPP. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under 40CFR110, 40CFR117 and 40CFR302 occurs, the following steps must be taken:

1. All measures must be taken to contain and abate the spill and to prevent the discharge of the pollutant(s) to storm water or off-site.

2. The SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans must identify measures to prevent the recurrence of such releases and to respond to such releases.

Date of Spill	Material Spilled	Approximate Quantity of Spill (in gallons)	Agency(s) Notified	Date of Notification	SWPPP Revision Date

Appendix G

Construction Site Notice

Construction Site Notice

The following information is posted in compliance with the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP)

Job Superintendent Contact Name, Title & Phone Number:

TO BE DETERMINED

Location of Storm Water Pollution Prevention Plan:

TO BE DETERMINED

NPDES Permit Number(s):

TO BE DETERMINED

Project Description:

The proposed Stockbridge-Munsee Casino will be a destination facility that includes a Class III gaming complex, as well as such ancillary facilities as a hotel, food and beverage outlets, retail facilities, and a service station.

A Storm Water Pollution Prevention Plan (SWPPP) has been developed and implemented according to Permit requirements. A full copy of the SWPPP for this construction project can be found at the location identified above.

This permit does not provide the public with any right to trespass on a construction site for any reason, including inspection of a site; nor does this permit require that permittees allow members of the public access to a construction site.

*This notice must be posted conspicuously at the main entrance of the construction site (and at or inside the Job Trailer) and shall also include the NPDES Permit Number for the project or a "completed" copy of the Notice of Intent (NOI) or other form of request required to obtain coverage under the applicable storm water permit if a number has not yet been assigned. This notice must be updated whenever information related to the contact person has changed or the location of the SWPPP has changed.

Appendix H

Total Maximum Daily Load Supporting Documentation

Endangered Species and Critical Habitat Supporting Documentation

file:///N:/Telcom/LMC/DOCS/TC%20Casino/TMDL/Neversink.htm
Last updated on Tuesday, July 27, 2010

Total Maximum Daily Loads

You are here: EPA Home Water Wetlands, Oceans, Watersheds TMDLs TMDL Reports

TMDL Documents Search Results

Search Criteria:
Lead State: NY
Water Body Name contains: Neversink River
There were no documents found for the listed criteria!

Back to Search

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Outdoor Activities
Animals, Plants, Aquatic Life
Chemical & Pollution Control
Water
Water Quality Monitoring, Assessment and Planning
Water Quality Management
Total Maximum Daily Loads (TMDLs)
Energy and Climate
Lands and Waters
Education
Permits and Licenses
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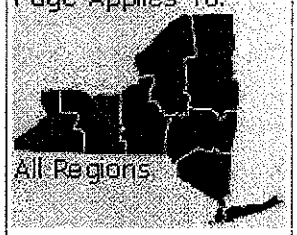
Regulations and Enforcement
Publications, Forms, Maps
About DEC

Total Maximum Daily Loads (TMDLs)

Section 303(d)(1)(C) of the Clean Water Act and EPA's implementing regulations (40CFR Part 130) require states to identify those waterbodies that do not meet water quality standards after application of the technology-based effluent limitations required by the Act. For these waters, states must consider the development of strategies, including Total Maximum Daily Load (TMDL) analysis, for reducing the pollutants that are causing the water quality standards exceedance in those waterbodies.

By definition, a TMDL specifies the allowable pollutant loading from all contributing sources (e.g., point sources, nonpoint sources, and natural background) at a level necessary to attain the applicable water quality standards with seasonal variations and a margin of safety that takes into account any lack of knowledge concerning the

Page Applies To:



On This Page:

Peconic Estuary Nitrogen TMDL
Northeast Regional Mercury TMDL
New York City Water Supply Watershed/ Phosphorus
Long Island Pathogens (Shellfishing) TMDL
Small Lakes Phosphorus TMDL

Related Links:

Impaired Waters List - Section 303(d)

PDF Help:

For assistance with PDFs on this page, please call 518-402-8179.

Contact for this Page:

NYSDEC
Water Assessment

relationship between the sources of the pollutant and water quality. In essence, a TMDL defines the assimilative capacity of the waterbody to absorb a pollutant and still meet water quality standards.

The Division of Water has completed TMDLs for a number of waterbodies in New York State. Waterbodies/Pollutants addressed by these TMDLs include:

Adirondack Acid Rain Waters/pH

See contact information (at right) for more information regarding this TMDL.

Greenwood Lake/Phosphorus

See contact information (at right) for more information regarding this TMDL.

Long Island Sound/Dissolved Oxygen

Total Maximum Daily Load (TMDL) Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound, December 2000, NYSDEC and CTDEP (259 Kb PDF)

Response to Public Comments - Long Island Sound Dissolved Oxygen TMDL, January 2001, NYSDEC (133 Kb PDF)

Long Island/Pathogens (Shellfishing)

Shellfish Pathogen TMDL for 27 Section 303(d)-Listed Waters, September 2007, NYSDEC, et al. (909 Kb PDF)

and Management
Division of Water
625 Broadway
Albany, NY
12233-3502
518-402-8179

Shellfish Pathogen TMDL, Attachment A - Waterbody Maps, September 2007, NYSDEC, et al. (Full Document is 23 MB and may be difficult to view/download; see below to view/download smaller portions of this PDF document)

- Shellfish Pathogen TMDL, Attachment A - Waterbody Maps, Figures 1 - 2 (2.58 MB PDF)
- Shellfish Pathogen TMDL, Attachment A - Waterbody Maps, Figures 3 - 7 (4.97 MB PDF)
- Shellfish Pathogen TMDL, Attachment A - Waterbody Maps, Figures 8 - 13 (4.50 MB PDF)
- Shellfish Pathogen TMDL, Attachment A - Waterbody Maps, Figures 14 - 21 (4.98 MB PDF)
- Shellfish Pathogen TMDL, Attachment A - Waterbody Maps, Figures 22 - 27 (4.55 MB PDF)

Shellfish Pathogen TMDL, Attachment B - Assumptions and Methods, September 2007, NYSDEC, et al. (266 Kb PDF)

Response to Public Comments - Shellfish Pathogen TMDL, September 2007, NYSDEC (36 Kb PDF)

Lake Champlain/Phosphorus

Total Maximum Daily Load (TMDL) Analysis to Achieve Water Quality Standards for Phosphorus in Lake Champlain, September 2002, NYSDEC and VTDEC (362 Kb PDF)

New York City Water Supply Watershed/Phosphorus

Total Maximum Daily Load (TMDL) Analysis to Achieve Water Quality Standards for Phosphorus in New York City Water Supply Reservoirs - Final Phase II, June 2000, NYSDEC (172 Kb PDF)

Response to Public Comments - Phase II NYC Watershed Phosphorus TMDL, June 2000, NYSDEC (172 Kb PDF)

Nonpoint Source Implementation - Phase II NYC Watershed Phosphorus TMDL, March 2002, NYSDEC (203 Kb PDF)

Nonpoint Source Implementation - Phase II NYC Watershed Phosphorus TMDL, April 2001, NYSDEC and NYCDEP (1 Mb PDF)

Croton Watershed Phase II Phosphorus TMDL Imlementation Plan, January 14, 2009, NYSDEC (552 Kb PDF)

Croton Watershed Phase II TMDL Implementation Plan Comment Responsiveness Summary, January 15, 2009 NYSDEC (95 Kb PDF)

Technical Background For Retrofitting Practices, January 14, 2009, NYSDEC (142 Kb, PDF)

Northeast Regional Mercury TMDL

Northeast Regional Mercury Total Maximum Daily Load, October 24, 2007, NYSDEC in collaboration with NEIWPCC (806 Kb PDF)

Oyster Bay/Pathogens

Total Maximum Daily Load (TMDL) Analysis to Achieve Water Quality Standards for Pathogens in Oyster Bay/Mill Neck Creek, September 2003, NYSDEC (Full Document 4.5MB; may be difficult to download, see below to download smaller portions of this PDF document)

Oyster Bay/Mill Neck Creek Pathogens TMDL - Text Only, no figures (368 Kb PDF)

Oyster Bay/Mill Neck Creek Pathogens TMDL - Figures 1-4 (1.1 MB PDF)

Oyster Bay/Mill Neck Creek Pathogens TMDL - Figures 5-7 (940 Kb PDF)

Oyster Bay/Mill Neck Creek Pathogens TMDL - Figures 8-15 (967 Kb PDF)

Oyster Bay/Mill Neck Creek Pathogens TMDL - Figures 16-21 (800 Kb PDF)

Oyster Bay/Mill Neck Creek Pathogens TMDL - Figures 22-27 (394 Kb PDF)

Peconic Bay/Pathogens

Total Maximum Daily Load (TMDL) Analysis to Achieve Water Quality Standards for Pathogens in Peconic Bay, September 2006, NYSDEC (Full Document 3.25 MB; may be difficult to download, see below to download

smaller portions of this document)

Peconic Bay Pathogens TMDL - Exec Summ/Table of Contents (147 Kb PDF)

Peconic Bay Pathogens TMDL - Introduction (251 Kb PDF)

Peconic Bay Pathogens TMDL - Section 2: Problem Identification (1.0MB PDF)

Peconic Bay Pathogens TMDL - Section 3-4: Applicable Standards, Water Quality/Watershed Characterization (228 Kb PDF)

Peconic Bay Pathogens TMDL - Section 5-6: Source Assessment, Modeling Approach (162 Kb PDF)

Peconic Bay Pathogens TMDL - Section 7: Load Allocation (317 Kb PDF)

Peconic Bay Pathogens TMDL - Section 8-11 and attachments: Implementation, Reasonable Assurance, Public Participation and References (186 Kb PDF)

Peconic Estuary/Nitrogen

Total Maximum Daily Load (TMDL) for Nitrogen in the Peconic Estuary Study Area, September 2007, NYSDEC (Full Document 3.57 MB; may be difficult to download, see below to download smaller portions of this document)

Peconic Estuary Nitrogen TMDL - Section I-IV: Executive Summary, Introduction, Waterbody Description, Applicable Standards, CWA 303(d) Listing (860 Kb PDF)

Peconic Estuary Nitrogen TMDL - Section V-VI: TMDL Development, TMDL/WLAs/LAs, (598 Kb PDF)

Peconic Estuary Nitrogen TMDL - Section VII-XIII: Implementation, Reasonable Assurance, Public Participation, (117 kb PDF)

Peconic Estuary Nitrogen TMDL - Appendix A: Cumulative Impact Graphics, (1,295 Kb PDF)

Peconic Estuary Nitrogen TMDL - Appendices B and C, (953 Kb PDF)

Response to Public Comments - Peconic Estuary Nitrogen TMDL, September 2007, NYSDEC (413 Kb PDF)

Small Lakes Phosphorus

Blind Sodus Bay

TMDL for Phosphorus in Blind Sodus Bay, September 2007, NYSDEC (704 Kb PDF)

TMDL for Phosphorus in Blind Sodus Bay - Appendices, September 2007, NYSDEC (1 Mb PDF)

Cossayuna Lake

TMDL for Phosphorus in Cossayuna Lake, September 2008, NYSDEC (3.03 Mb PDF)

Findley Lake

TMDL for Phosphorus in Findley Lake, September 2008, NYSDEC (2.88 Mb PDF)

Lake Oscawana

TMDL for Phosphorus in Lake Oscawana, September 2008, NYSDEC (2.45 Mb PDF)

Lake Salubria

TMDL for Phosphorus in Lake Salubria, July 2009, NYSDEC (2.24 Mb PDF)

Little Sodus Bay

TMDL for Phosphorus in Little Sodus Bay, September 2007, NYSDEC (659 Kb PDF)

TMDL for Phosphorus in Little Sodus Bay - Appendices, September 2007, NYSDEC (985 Kb PDF)

Moon Lake

TMDL for Phosphorus in Moon Lake, September 2007, NYSDEC (649 Kb PDF)

TMDL for Phosphorus in Moon Lake - Appendices, September 2007, NYSDEC (963 Kb PDF)

Peach Lake

TMDL for Phosphorus in Peach Lake, September 2009, NYSDEC (2.12 Mb PDF)

Port Bay

TMDL for Phosphorus in Port Bay (DRAFT), July 2010, NYSDEC (1.79 Mb PDF)

Silver Lake

TMDL for Phosphorus in Silver Lake (DRAFT), July 2010, NYSDEC (3.59 Mb PDF)

Snyders Lake

TMDL for Phosphorus in Snyders Lake (DRAFT), July 2009, NYSDEC (2.47 Mb PDF)

Summit Lake

TMDL for Phosphorus in Summit Lake, September 2009, NYSDEC (1.90 Mb PDF)

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 LUKER ROAD
CORTLAND, NY 13045

February 12, 2001

Mr. Edward T. Hutchinson
Project Environmental Scientist
Rizzo Associates
One Grant Street
Framingham, MA 01701-9005

Dear Mr. Hutchinson:

This responds to your letter of January 5, 2001, requesting information on the presence of Federally listed or proposed endangered or threatened species in the vicinity of the proposed project area in the Town of Thompson, Sullivan County, New York.

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. In addition, no habitat in the project impact area is currently designated or proposed "critical habitat" in accordance with provisions of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act is required with the U.S. Fish and Wildlife Service (Service). Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered.

The above comments pertaining to endangered species under our jurisdiction are provided pursuant to the Endangered Species Act. This response does not preclude additional Service comments under the Fish and Wildlife Coordination Act or other legislation.

The swollen wedge mussel (*Alasmidonta varicosa*) is found in the Neversink River in the vicinity of the proposed project. This species is considered a species of concern (formerly known as Category 2 Candidate species) by the Service and its status is being monitored throughout much of its range. Species of concern do not receive substantive or procedural protection under the Endangered Species Act; however, the Service does encourage Federal agencies and other appropriate parties to consider these species in the project planning process.

The Service recommends, therefore, that if the wetted area of the Neversink River or feeder streams will be effected, they be surveyed by a qualified person to determine the presence of the swollen wedge mussel. The Service further recommends that the project's environmental documents include an evaluation of the potential direct, indirect, and cumulative effects of the proposed activities on this species, and include appropriate measures, as necessary, to protect this species and its habitats.

C-1 (1)

The swollen wedge mussel is also a species of concern to New York State. Should the project proceed, detailed project plans, and any evaluations, including surveys, their timing, and results, should be coordinated with both this office and with the following:

Dr. Kathryn Schneider
New York State Department of
Environmental Conservation
New York Natural Heritage Program
700 Troy-Schenectady Road
Latham, NY 12110-2400
(518) 783-3932

Mr. Peter Nye
New York State Department of
Environmental Conservation
Endangered Species Unit
Wildlife Resources Center
Delmar, NY 12045-9767
(518) 439-7635

For additional information on fish and wildlife resources or State-listed species, we suggest you contact:

New York State Department
of Environmental Conservation
Region 3
21 South Putt Corners Road
New Paltz, NY 12561-1676
(845) 256-3000

New York State Department
of Environmental Conservation
Wildlife Resources Center - Information Services
New York Natural Heritage Program
700 Troy-Schenectady Road
Latham, NY 12110-2400
(518) 783-3932

National Wetlands Inventory (NWI) maps may or may not be available for the project area. However, while the NWI maps are reasonably accurate, they should not be used in lieu of field surveys for determining the presence of wetlands or delineating wetland boundaries for Federal regulatory purposes. Copies of specific NWI maps can be obtained from:

Cornell Institute for Resource Information Systems
302 Rice Hall
Cornell University
Ithaca, NY 14853
(607) 255-4864

Work in certain waters and wetlands of the United States may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act, the Service may concur, with or without stipulations, or recommend denial of the permit depending upon the potential adverse impacts on fish and wildlife resources associated with project implementation. The need for a Corps permit may be determined by contacting Mr. Joseph Seebode, Chief, Regulatory Branch, U.S. Army Corps of Engineers, 26 Federal Plaza, New York, NY 10278 (telephone: [212] 264-3996).

C-1(2)

If you require additional information please contact Michael Stoll at (607) 753-9334.

Sincerely,

Mark W. Clough
Acting For

David A. Stilwell
Field Supervisor

cc: NYSDEC, New Paltz, NY (Environmental Permits)
NYSDEC, Latham, NY (Attn: Dr. K. Schneider)
NYSDEC, Delmar, NY (Attn: P. Nye)
COE, New York, NY

C-1 (3)

Division of Fish, Wildlife & Marine Resources
Wildlife Resources Center - New York Natural Heritage Program
700 Troy-Schenectady Road, Latham, New York 12110-2400
Phone: (518) 783-3932 FAX: (518) 783-3916

John P. Cahill
Commissioner

January 25, 2001

Edward T Hutchinson
Rizzo Associates
1 Grant Street
Framingham, MA 07107-9005

Dear Mr. Hutchinson:

In response to your recent request, we have reviewed the New York Natural Heritage Program databases with respect to the Natural Resource Inventory - Thompson, for a proposed possible gambling facility, area as indicated on the map you provided, located in the Town of Thompson, Sullivan County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site.
This information is considered sensitive and may not be released to the public without permission from the New York Natural Heritage Program.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

This response applies only to known occurrences of rare or state-listed animals and plants, of significant natural communities, and of other significant habitats. For information regarding regulated areas or permits that may be required under state law (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

Sincerely,

Heidi Krahling

Heidi J. Krahling, Information Services
NY Natural Heritage Program

Encs.
cc: Reg. 3, Wildlife Mgr.
Reg. 3, Fisheries Mgr.
Peter Nye, Endangered Species Unit. (518) 478-3053

F-3(1)

Natural Heritage Report on R Species and Ecological Communities

Prepared 25 January 2001 by NY Natural Heritage Program, NYS DEC, Latham, New York

F-3 (2)

Records with a Precision value of "S" or with a blank Precision are known to be in a location that may be impacted by the proposed action.
Records with a Precision value of "M" may possibly occur within the project area in appropriate habitat. **Maps are not provided for M precision records.**
This report contains SENSITIVE information that should be treated in a sensitive manner -- Please see cover letter.
Refer to the Users' Guide for explanations of codes, ranks, and fields.

* County
** Town

Scientific Name, COMMON NAME, & Group Name	NY Legal Status, Heritage Ranks, & Federal Status	Precision & Acreage	EO Rank & Last Seen	General Habitat and Quality	Detailed Location	USGS Topo Quad	Office Use
* SULLIVAN							
** THOMPSON							
Alasmidonta varicosa BROOK FLOATER Bivalve Mollusc	THREATENED G3; S1	S	D 1990-07-11	STREAM APPROXIMATELY 100-150 FT WIDE AND 1-2 FT DEEP WITH COBBLE/GRAVEL SUBSTRATE, INTERSPERSED WITH SAND. GENERALLY WOODED BANKS, CLEARED IN SOME PLACES FOR THE CONSTRUCTION OF DECKS, REVEGETATED WITH TALL GRASS. ASSOCIATED SPECIES: E. COMPLANATA, A	NEVERSINK RIVER SHELDRAKE FROM BRIDGEVILLE NORTH ON EDWARDS RD APPROXIMATELY 1.5 MI, MUSSEL IN RIVER TO W OF RD. MUSSELS IN 0.25 M OF WATER IN A COBBLY RIFFLE.	WOODRIDGE	4107465 ESU
* SULLIVAN, ORANGE							
** NEVERSINK, FALLSBURG, THOMPSON, FORESTBURGH, DEERPARK, CITY OF PORT JERVIS							
Haliaeetus leucocephalus BALD EAGLE Bird	THREATENED G4; S2S3B,S2N (PS:LT,PDL)	S	E 1989	RIVER AND RESERVOIR.	NEVERSINK RIVER NEVERSINK RIVER FROM CLARYVILLE TO W ABOUT 42 MI TO PORT JERVIS INCLUDING NEVERSINK RESERVOIR.	LIBERTY EAST	4107476 ESU

2 Records Processed

New York State Department of Environmental Conservation
Division of Fish, Wildlife and Marine Resources, Region 3
21 South Putt Corners Road, New Paltz, New York 12561-1696
Phone: (845) 256-3003 • FAX: (845) 255-4659
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

Mr. Bernie Raftery
Rizzo Associates
1 Grant St.
Framingham, MA 01701

September 10, 2001

Dear Mr. Raftery:

As requested, the following are a list of fish species which have been documented in historic Department surveys from the Neversink River (D1) in the vicinity of Bridgeville, NY:

Brown trout *Salmo trutta*
Brook trout *Salvelinus fontinalis*
Smallmouth bass *Micropterus dolomieu*
Redbreast sunfish *Lepomis auritus*
Pumpkinseed *L. gibbosus*
Rock bass *Ambloplites rupestris*
Black crappie *Pomoxis nigromaculatus*
Johnny darter *Etheostoma nigrum*
Tesselated darter *Etheostoma olmstedi*
Shield darter *Percina peltata*
Margined madtom *Noturus insignis*
Brown bullhead *Ameirus nebulosis*
Chain pickerel *Esox niger*
Grass pickerel *Esox americana vermiculatus*
Blacknose dace *Rhinichthys atratulus*
Longnose dace *R. cataractae*
Golden shiner *Notemogonus crysoleucas*
Common shiner *Luxilus cornutus*
Spottail shiner *Notropis hudsonius*
Cutlips minnow *Exoglossum maxillingua*
Fallfish *Semotilus corporalis*
Creek chub *S. atromaculatus*
Creek chubsucker *Erimyzon oblongus*
White sucker *Catostomus commersoni*
American eel *Anguilla rostrata*

Please don't hesitate to contact me if you have any more questions.

Sincerely yours,

Robert K. Angyal,
Senior Aquatic Biologist

F-4

Critical Habitat - The Service also designates critical habitat for many listed spec

Critical Habitat within New York State - Within New York State, the Service has Great Lakes population of piping plovers.

For more information on the Service's Endangered Species Program, go to http://e

FWS Endangered Species Home Page • FWS Endangered Speci

Last updated: February 4, 2010
All images by FWS unless otherwise noted.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Outdoor Activities
Animals, Plants, Aquatic Life
Chemical & Pollution Control
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SEQR
Critical Environmental Areas
Unique Geologic Features
Public Involvement and News
Regulations and Enforcement
Publications, Forms, Maps
About DEC

Critical Environmental Areas

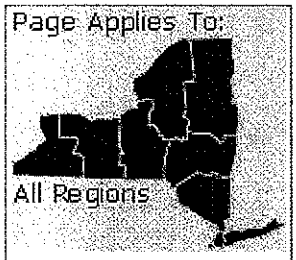
CEA's

Local agencies may designate specific geographic areas within their boundaries as "Critical Environmental Areas" (CEAs). State agencies may also designate geographic areas they own, manage or regulate.

Contact the designating agency for more information concerning a specific Critical Environmental Area.

To be designated as a CEA, an area must have an exceptional or unique character with respect to one or more of the following:

Page Applies To:



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Contact for this Page:

NYS DEC
Division of Environmental Permits
4th Floor
625 Broadway
Albany, NY 12233-1750
518-402-9167
email us

- a benefit or threat to human health;
- a natural setting (e.g., fish and wildlife habitat, forest and vegetation, open space and areas of important aesthetic or scenic quality);
- agricultural, social, cultural, historic, archaeological, recreational, or educational values; or
- an inherent ecological, geological or hydrological sensitivity to change that may be adversely affected by any change.

Following designation, the potential impact of any Type I or Unlisted Action on the environmental characteristics of the CEA is a relevant area of environmental concern and must be evaluated in the determination of significance prepared pursuant to Section 617.7 of SEQR.

Where available, a link to a map of the Critical Environmental Area is provided. If a county is not listed below, there are presently no Critical Environmental Areas in that county.

Critical Environmental Areas in Broome County
Critical Environmental Areas in Columbia County
Critical Environmental Areas in Cortland County
Critical Environmental Areas in Delaware County
Critical Environmental Areas in Dutchess County
Critical Environmental Areas in Erie County

- Critical Environmental Areas in Essex County
- Critical Environmental Areas in Kings County
- Critical Environmental Areas in Monroe County
- Critical Environmental Areas in Nassau County
- Critical Environmental Areas in Onondaga County
- Critical Environmental Areas in Ontario County
- Critical Environmental Areas in Orange County
- Critical Environmental Areas in Oswego County
- Critical Environmental Areas in Putnam County
- Critical Environmental Areas in Queens County
- Critical Environmental Areas in Rockland County
- Critical Environmental Areas in Saratoga County
- Critical Environmental Areas in Schenectady County
- Critical Environmental Areas in Schoharie County
- Critical Environmental Areas in Steuben County
- Critical Environmental Areas in St. Lawrence County
- Critical Environmental Areas in Suffolk County
- Critical Environmental Areas in Tompkins County
- Critical Environmental Areas in Ulster County
- Critical Environmental Areas in Warren County
- Critical Environmental Areas in Washington County
- Critical Environmental Areas in Westchester County

NO LISTING IN SULLIVAN COUNTY

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189 518-237-8643

NEW YORK STATE
Bernadette Castro
Commissioner

January 28, 2003

Bridget Swanke
Stockbridge-Munsee Community
Legal Office
N8476 Moh He Con Nuck Road
P.O. Box 70
Bowler, Wisconsin 54416

Dear Ms. Swanke:

Re: BIA
Stockbridge-Munsee Casino Project
(Bridgewater)
Thompson, Sullivan County
02PR04242

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). The SHPO has reviewed the *revised* Archaeological Field Investigation Report for the Stockbridge-Munsee Casino Project in accordance with Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations.

Based upon this review, it is our understanding that all project construction will be taking place solely on the parcel identified as the Gildick Parcel. Therefore, it is the SHPO's opinion that this project will have No Effect upon cultural resources in or eligible for inclusion in the National Register of Historic Places.

Cultural resources have been identified on other parcels included in the study. In the future, additional consultation with our office would be warranted if development is proposed for these other parcels.

When responding please be sure to refer to the SHPO project review (PR) number noted above. If you have any questions, please feel free to call me at (518) 237-8643 ext. 3255.

Sincerely,

Robert D. Kuhn

Assistant Director
Field Services Bureau

RDK:bsa

cc: D. Cox

An Equal Opportunity/Affirmative Action Agency
printed on recycled paper

F-6

Stockbridge-Munsee Cultural Preservation Office

Sherry Firgens-Preservation Officer
N8476 MohHeConNuck Road
Bowler, WI 54416

December 2, 2002

Bridget Swanke
Staff Attorney
P.O. Box 70
Bowler, WI 54416

Dear Bridget:

This letter is in response to the request you made of the Cultural Preservation Office for comment on Phase 1A sensitivity assessment and Phase 1B Archaeological Field Investigation for the Stockbridge-Munsee Casino Project, in the town of Thompson, Sullivan County, New York.

It appears that PAL has done a very complete job of searching all avenues, to make sure the casino project is not disturbing any historic or cultural items. I have no concerns at this time with the casino project proceeding.

If during the casino project any inadvertent discoveries are found please contact this office.

Sincerely

Sherry White

Sherry White
Cultural Preservation Officer

F-7

(715) 793-3970

Email: sloudbear@yahoo.com

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April 8, 2002

Mario Paula
U.S. Environmental Protection Agency Region 2
Wetlands Protection Section - 24th Floor
290 Broadway
New York City, NY 10007-1866

Re: Proposed Stockbridge-Munsee Casino Project
Water Quality Certificate Application

Dear Mr. Paula:

Rizzo Associates, Inc., on behalf of the Stockbridge-Munsee Community, Band of Mohican Indians and Trading Cove New York, is submitting the enclosed application for a Water Quality Certificate pursuant to Section 401 of the Clean Water Act for the Stockbridge-Munsee Casino Project in Thompson, New York. This project will involve the construction of the Casino, on-site and off-site infrastructure and utilities improvements, landscape restoration, and wetland creation. The Casino's related elements of the project will have the following impacts to wetlands and waterways:

- 66,569 sf (1.53 acres) to two vegetated wetlands
- 2,950 sf (0.07 acres) to one pond
- 705 lf of impact to three intermittent waterways

Proposed mitigation includes restoration of upland areas, stormwater management, and the creation of 3.2 acres of vegetated wetland, 0.5 acres of pond and 980 lf of waterway.

The Stockbridge-Munsee Community is a federally recognized Indian tribe and the proposed project will only take place if the project lands are held by the federal government in trust for the Tribe. As tribal trust land, these lands will not be subject to state environmental regulatory jurisdiction. Therefore, per your discussions with Bridget Swanke, a tribal attorney, the Tribe has requested that the U.S. Environmental Protection Agency provide the required Section 401 certification as permitted under law.

F-8 (1)

We are providing two copies of the U.S. Army Corps of Engineers Section 404 application. This application describes the project, its impacts and the proposed mitigation. If you have any questions, or require additional information, please do not hesitate to call either myself (508-903-2409) or Bernie Raftery (508-903-2426).

Sincerely,

Amy M. Green
Senior Project Manager

Bernard P. Raftery
Senior Project Environmental Scientist

Cc: R. English, USACE (without attachments)
B. Chicks, President, Stockbridge-Munsee Tribal Council
L. Wolman, Trading Cove New York
M. Wolman, Trading Cove New York
B. Murtha, Sun International
B. Swanke, Staff Attorney, Stockbridge-Munsee Community
J. Billig, Attorney
P. Brown, Attorney

\\earth\data\project\7419\Wetlands\WQC Cover Letter.doc

F-8 (2)

RIZZO
ASSOCIATES
A TETRA TECH COMPANY

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 LUKER ROAD
CORTLAND, NY 13045

July 19, 2001

Ms. Amy M. Green
Senior Project Manager
Rizzo Associates
One Grant Street
Framingham, MA 01701-9005

Dear Ms. Green:

This responds to your letter of June 12, 2001, requesting information on the presence of Federally listed or proposed endangered or threatened species in the vicinity of the proposed installation of new water and sewer lines in the City of Monticello and the Town of Thompson, Sullivan County, New York.

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. In addition, no habitat in the project impact area is currently designated or proposed "critical habitat" in accordance with provisions of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act is required with the U.S. Fish and Wildlife Service (Service). Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered. A compilation of Federally listed and proposed endangered and threatened species in New York is enclosed for your information.

The above comments pertaining to endangered species under our jurisdiction are provided pursuant to the Endangered Species Act. This response does not preclude additional Service comments under other legislation.

For additional information on fish and wildlife resources or State-listed species, we suggest you contact the appropriate New York State Department of Environmental Conservation regional office(s) as shown on the enclosed map, and:

New York State Department of Environmental Conservation
New York Natural Heritage Program Information Services
625 Broadway
Albany, NY 12233
(518) 402-8935

F-9 (1)

National Wetlands Inventory (NWI) maps may or may not be available for the project area. However, while the NWI maps are reasonably accurate, they should not be used in lieu of field surveys for determining the presence of wetlands or delineating wetland boundaries for Federal regulatory purposes. Copies of specific NWI maps can be obtained from:

Cornell Institute for Resource Information Systems
302 Rice Hall
Cornell University
Ithaca, NY 14853
(607) 255-4864

Work in certain waters and wetlands of the United States may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act, the Service may concur, with or without stipulations, or recommend denial of the permit depending upon the potential adverse impacts on fish and wildlife resources associated with project implementation. The need for a Corps permit may be determined by contacting the appropriate Corps office(s) as shown on the enclosed map.

If you require additional information please contact Michael Stoll at (607) 753-9334.

Sincerely,

David A. Stilwell

David A. Stilwell
Field Supervisor

Enclosures

cc: NYSDEC, New Paltz, NY (Environmental Permits)
NYSDEC, Albany, NY (Natural Heritage Program)
COE, New York, NY

F-9 (2)

ARCHEOLOGY COMMENTS
01PR2970

Based upon a review of the project the State Historic Preservation Office (SHPO) has no concerns regarding potential project effects on archeological resources and does not consider an archeological survey to be warranted.

If you have any questions concerning archeology, please call Mike Schifferli at (518) 237-8643 ext. 3281.

M. Schifferli

06/21/01

F-11 (3)

Appendix I

Completed Inspection Report Forms
Completed Grading and Stabilization Forms
Completed Corrective Action Logs
Completed SWPPP Amendment Logs
Completed Training Logs
Completed Progress Maps

Appendix L

Stormwater Management Plan Supporting Documentation

TETRA TECH

Appendix L
Stormwater Management Plan Supporting Documentation

L-1 Geotechnical Data: Test Pit and Infiltration Rate

L-2 100-Year Floodplain Impacts and Compensatory Storage

L-3 Water Quality Treatment

Appendix L-1

Geotechnical Data

Test Pit and Infiltration Rate

GZA
GeoEnvironmental, Inc.

Engineers and Scientists

June 15, 2001
File No. 16770.00-C, PC

Mr. Edward Bolteau
Rizzo Associates
One Grant Street
Framingham, Massachusetts 01701-9005

Re: Preliminary Geotechnical Evaluation
Proposed Casino Development
Thompsonville, New York

DRAFT

One Edgewater Drive
Norwood
Massachusetts
02062
781-278-3700
FAX 781-278-5701
http://www.gza.net

Dear Ed:

In accordance with our proposal dated April 20, 2001, GZA GeoEnvironmental, Inc. (GZA) is pleased to present this preliminary geotechnical evaluation for the above-referenced project. The purpose of our work was to provide a preliminary assessment of subsurface conditions and develop preliminary recommendations for slope design, and the impact of subsurface conditions on proposed drainage basin design and on-site soil re-use. Our findings and recommendations are subject to the Limitations contained in Appendix A and the terms and conditions of our Agreement.

BACKGROUND

Our understanding of the project is based on discussions with you, meetings with the project developer on April 12th and May 14th, and site visits. The approximately 350 acre site is located at the intersection of Routes 17 and 161 in the southern portion of the Catskill Mountains. The site is divided into 3 parcels, with the main parcel located east of Route 161, between the road and Neversink River. The majority of the site is heavily wooded with steep grades. Numerous bedrock outcrops and large (10 to 15 foot diameter) boulders are present at the surface. There are also several wetland areas. Most of the site is not developed except for portions of the main parcel which have been (and are currently) used as a junk yard and for mining sand and gravel. Refer to Figure 1 for a site locus.

The project is currently in the conceptual design phase. It is envisioned that an approximately 4 to 6 story building, totaling about 650,000 square feet, will be constructed between the river and Route 161 as part of the first phase of construction. Both structured and surface parking is anticipated. There will be several roadways, some cut into the rock slope, to access the building and garage. A hotel may subsequently be constructed at the site. On-site storm water management will be required, and would likely be in the flatter areas closest to the river. Some wetland restoration may also be required in this area.

Only minor development of the parcels west of Route 161 is anticipated.

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An Equal Opportunity Employer M/F/V/H

SCOPE OF WORK

The scope of our work included:

- Review of geologic information in the region published by the New York State Museum and Science Service, and plans and reports pertaining to the project provided by Client;
- Performed preliminary mapping of rock outcrops at the site;
- Planned and executed a subsurface exploration program consisting of 13 test pits and four laboratory gradation analyses; and
- Prepared this letter summarizing our findings and recommendations.

SUBSURFACE EXPLORATIONS

GZA planned and executed a subsurface exploration program to geotechnical issues at the site. Thirteen test pits (TP-1 through TP-13) were excavated on May 10 and 11, 2001, by Rieber Excavating of Rock Hill, New York. The test pits were located to avoid flagged wetland areas and to provide a general overview of site conditions. The test pits were advanced to depths of 2 to 14 feet using a rubber-tired backhoe (most of the test pits were 7 to 11 feet deep). Upon completion, the test pits were backfilled with the excavated material and tamped with the backhoe bucket.

A percolation test was performed in one of the test pits (TP-13) in the proposed storm water management area. Soils in this test pit were representative of soils encountered in the test pits conducted in areas proximate to the River and near the existing mining ponds (pond nos. 1 through 4). GZA hand-excavated a 12-inch deep hole into the natural soils and, after pre-soaking by filling the hole with water, GZA measured the rate of drop of the water level. Results are recorded on the test pit log.

A GZA geologist observed the explorations, classified soil samples and prepared the logs contained in Appendix B. Approximate test pit locations are shown on Figure 2 (actual locations are being surveyed in the field by the project surveyor).

LABORATORY ANALYSES

Grain size analyses were conducted on four soil samples obtained from the test pits to verify field classifications, to provide correlation with published permeability coefficients and to help evaluate reuse potential of soil to be excavated as part of the proposed construction. Test results are contained in Appendix C.

SUBSURFACE CONDITIONS

Subsurface conditions at the site are highly variable, and to some extent follow the highly variable topography. The following descriptions are intended to be general, since the various areas of the site were not delineated by the small number of test pits.

Soil Conditions

West of Route 161 and the area west of Wetland 3 (Rosini parcel), about 1.5 feet of topsoil and subsoil was underlain by glacial till (a mixture of clayey silt, sand, gravel, cobbles and boulders locally known as Sullivan Hardpan). Many bedrock outcrops and large (up to about 10 to 15 foot diameter) boulders were observed at the surface. The test pits (TP-2, TP-5, TP-11, and TP-12) in this area encountered refusal on bedrock or boulders at depths of 5 to 9 feet.

East of Wetland 3, shallow bedrock was encountered in TP-3, which is consistent with the shale outcrops observed in the northeast corner of the site.

Within the mining pond area, conditions vary from relatively impermeable silts and clayey silts north of the ponds (TP-4 and TP-7) to more permeable sand deposits east and south of the ponds (TP-6 and TP-13). Permeable sand and sand and gravel was also encountered in TP-1 located in the northeast portion of the currently active junk yard. This suggests that the sand/sand and gravel deposits may extend throughout most of the existing junk yard, although further explorations is required to confirm subsurface conditions in the area. However, given the junked cars and various debris noted throughout this eastern parcel, we expect the debris to extend into slopes by several feet, where there is surficial evidence of debris.

In the southeast portion of the site, silty sand and/or sand was generally encountered in test pits TP–8 and TP-10 to depths of 8 to 11 feet. However, near the existing barn (TP-9), boulder fill was encountered to a depth of 8 feet.

Bedrock Conditions

Based on observations and review of geologic maps, the site and surrounding area is underlain by bedrock of the lower Walton Formation, which locally is the only unit representing the Sonyea Group. The Walton Formation consists of gray and green cross bedded sandstones, red and green shales, and rounded pebble quartz conglomerates. Bedrock outcrops can be found at many locations within the project area, exposed on the steeply sloping hillsides facing the Neversink River.

Bedrock is composed of red and grey siltstone, sandstone, and shale. Most of the rock outcrops observed consisted of massive, intact rock. However, the shales observed in the northwest corner of the site appeared highly fractured, possible due to previous mining operations.

Groundwater

Groundwater was encountered in one of the test pits (TP-12 located west of Route 161) at a depth of 7.7 feet, corresponding to the top of rock at that location. We expect that this was water perched on the bedrock surface. Groundwater was not encountered in the other test pits.

It should be recognized that groundwater observations have been made at the times and under the conditions stated on the logs. Fluctuations in groundwater levels will occur due to variations in precipitation, temperature, tidal influences, and other factors different from those at the time the measurements were made.

IMPLICATIONS OF SUBSURFACE CONDITIONS

Based on our preliminary field reconnaissance and exploration program, there are several geotechnical issues that should be considered during design of the proposed development, as discussed below.

- The natural granular soils, glacial till and bedrock are suitable for support of proposed buildings, roadway and retaining walls. At this time, it appears that at least a portion of the proposed casino/hotel location in then northeast portion of the site will be supported on bedrock. However, depending on proposed footprint and elevation, there may also be granular soils and/or till underlying these buildings. Once building locations and approximate grading are known, a focused exploration program can be conducted.

- Most of the observed bedrock outcrops appeared massive. As such, we would anticipate that rock cuts can be made nearly vertical. For preliminary planning, we suggest using 1 horizontal to 6 vertical for roadway rock cuts. In addition, a rock catchment area will be required at the bottom of all rock slopes. The width of rock catchment areas are typically 1/4 to 1/3 the height of the rock cut. Thus, the edge of roads should be at least this distance from proposed top of rock slope.

- Soil slopes should be graded no steeper than 2.5 horizontal to 1 vertical, unless slope protection is provided.

- The transition from soil to bedrock will have to be assessed along proposed roadways. At this time, it appears that the soil overburden is relatively shallow (5 to 10 feet) in areas close to Route 161. The potential for boulders in road cut areas will have to be assessed (especially towards the southern part of the site near TP-1 and 2) since the presence of boulders instead of bedrock will require significantly flatter slopes or the use of retaining walls.

- Bedrock removal will require controlled blasting, including the use of pre-splitting and/or line drilling along the proposed bedrock face to help provide a near vertical face. We would expect that some rock stabilization will be required. This can be estimated after conducting test borings and additional geological mapping of rock outcrops in proposed rock cut areas; however, the actual amount/type of rock stabilization will have to be assessed during construction as the rock slopes are exposed.

- Groundwater control will be an issue during and, depending on file site grades, after construction. Groundwater appears to run at or near the bedrock surface from the hills west of the site, towards the river. Significant flow was observed in streams crossing below Route 161 during our May site reconnaissance.

- The soils and bedrock encountered on site can be re-used in building, roadway and landscaped areas. The glacial till soils and some of the silty sand deposits will be difficult to use during wet and/or cold weather because of their high silt/clay content. However, cleaner materials (i.e., little or no silt) can be sandwiched between layers of the silty sand/glacial till to help with material placement. The bedrock can be crushed on site to provide structural backfill.

- Based on our observations, there is a high potential for encountering debris from the former junk yard operated within at least the upper 5 feet of soil, especially in the southern portion of the site. The potential for encountering debris, as well as contaminated soil, during construction should be evaluated by deep test pits in the junk yard area. During the next phase of explorations, we recommend monitoring wells be installed in certain borings to facilitate groundwater sampling and chemical testing.

- Soils near, and south of, existing ponds 1 and 2, appear to be highly permeable. However, localized silt layers within the sand deposits exist, reducing permeability. Conversely, the glacial till overlying rock in the western part of the site, has a significantly lower permeability.

After the site layout and preliminary grading have been developed, a site specific evaluation of subsurface conditions along proposed roadways, structures and amenities should be conducted. The following investigations should be considered:

- Borings, test pits and shallow bedrock probes along proposed roadways.

- Borings with rock cores at selected shallow bedrock areas in proposed cut areas to assess rock quality for re-use, design slopes and blasting criteria (i.e., line drill and/or pre-split will be necessary in some areas near Route 161, and possibly for the casino/hotel, depending on site grades).

- Deep test pits in the junk yard area. This effort can be coordinated with Rizzo, after completion of their Phase I site assessment.

We appreciate the opportunity to work with you on this interesting project. Please do not hesitate to call Mary Hall at 781-287-3819 if you have questions.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Maurice R. Ponti
Senior Geologist

Joseph D. Guertin, P.E.
Senior Principal

Mary B. Hall, P.E.
Associate Principal

MBH/nmd
Attachments: Figures
Appendix A - Limitations
Appendix B - Test Pit Logs
Appendix C - Laboratory Results

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FIGURES

RIZZO ASSOCIATES
A TETRA TECH COMPANY

One Grant Street
Framingham, MA 01701-9005
(508) 903-2000
(508) 903-2001 fax
www.rizzo.com

JOB 7419
SHEET NO. ____ OF ____
CALCULATED BY KLW DATE 6/30/03
CHECKED BY ____ DATE ____
SCALE ____

Infiltration Basins 1 and 2
Exfiltration Rate calculation
to be used in HydroCAD model

From GZA Geotechnical Evaluation (dated June 15, 2001),

TP-13 → located just east of Infiltration Basin 1
(P) Percolation Rate = (3"-6") per 1 minute
∴ Average = 4.5" per minute
or $\frac{1 \text{ min.}}{4.5''} = 0.22$ min/inch

$$\text{Velocity } (V) = \frac{1}{\frac{12 \text{ in}}{\text{ft}} (P)} = \frac{1}{12 (0.22 \text{ min./in})} = 0.38 \text{ ft/min}$$

$$V = 0.38 \frac{\text{ft}}{\text{min}} \times \frac{1 \text{ min}}{60 \text{ sec}} = 0.006 \text{ ft/sec}$$

Velocity through basin bottom = 0.006 ft/sec

Assumed same Velocity through Infiltration Basin 2 bottom.

Appendix L-2

100-Year Floodplain Impacts and Compensatory Storage

Proposed Stockbridge-Munsee Casino
Thompson, NY

7419
By: KLW
07/02/03

100-Year Floodplain (Elevation 1084.0)
Proposed Cut/Fill Volumes

Proposed Cut (Ponds)

Elevation (feet)	Area (sf)	Average Area (sf)	Incremental Volume (cf)	Accumulative Volume (cf)
1070	9,647	0	0	0
1072	10,932	10,290	20,580	20,580
1074	43,032	26,982	53,964	74,544
1076	48,557	45,795	91,589	166,133
1078	52,075	50,316	100,632	266,765
1080	33,045	42,560	85,119	351,885
1082	18,817	25,931	51,862	403,746
1084	21,409	20,113	40,226	443,972

Proposed Fill (Road)

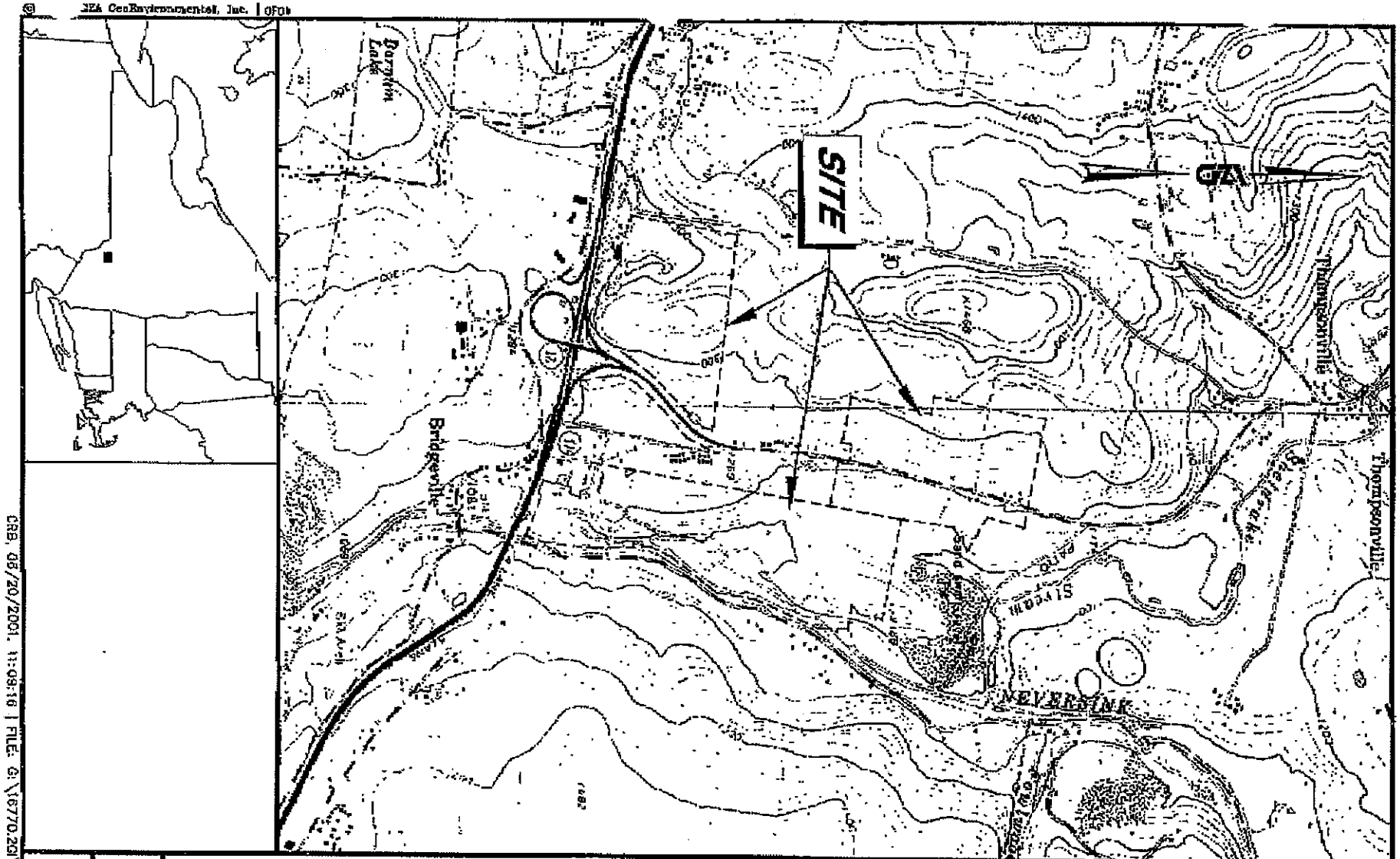
Elevation (feet)	Area (sf)	Average Area (sf)	Incremental Volume (cf)	Accumulative Volume (cf)
1080	26,164	0	0	0
1084	43,559	34,861	139,446	139,446

Proposed Fill (Adjacent to Floodplain)

Elevation (feet)	Area (sf)	Average Area (sf)	Incremental Volume (cf)	Accumulative Volume (cf)
1070	5,635	0	0	0
1080	15,626	10,631	106,305	106,305
1084	14,737	15,182	60,727	167,032

Total Fill =	306,478	cf	7.03	acre-feet
Total Cut =	443,972	cf	10.19	acre-feet
Net Cut =	137,495	cf	3.16	acre-feet

© GZA GeoEnvironmental, Inc. | 0F01



PROJECT NO.	16770.00
FIGURE NO.	1

TRADING COVE

THOMPSONVILLE, NEW YORK

LOCUS PLAN

REV. NO.	DESCRIPTION	BY	DATE

SCALE: 1:24,000

0 1000' 2000' 4000'

SOURCE: U.S.G.S MAPS WOODRIDGE, NY & MONTICELLO, NY QUADRANGLES 1982

PROJ MGR: MBH
DESIGNED BY: MBH
REVIEWED BY: MBH

DRAWN BY: CRB
DATE: 6/19/01

GZA
GeoEnvironmental, Inc.

CRB, 06/20/2001, 11:08:16 | FILE: G:\16770.00\16770-00\MBH\SOURCE\0F01.DWG

T-1-8

APPENDIX A

LIMITATIONS

GEOTECHNICAL LIMITATIONS

Explorations

1. The analyses and recommendations submitted in this report are based in part upon the data obtained from subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.

2. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil and bedrock transitions are probably more erratic. For specific information, refer to the exploration logs.

3. Water level readings have been made in the explorations at times and under conditions stated on the logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, and other factors occurring since the time measurements were made.

Review

4. In the event that any changes in the nature, design or location of the proposed structures are planned, the conclusions and recommendations contained in this memorandum shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by GZA GeoEnvironmental, Inc. (GZA). It is recommended that this firm be provided the opportunity for a general review of final design and specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

Construction

5. It is recommended that this firm be retained to provide soil and rock engineering services during construction of the excavation and foundation phases of the work. This is to observe compliance with the design concepts, specifications, and recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

Use of Report

6. This report has been prepared for the exclusive use of Rizzo Associates for specific application to the proposed Trading Cove development at Rt. 17/161 located in Thomsonville, New, in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.

7. This soil and foundation engineering report has been prepared for this project by GZA. This report is for design purposes only and is not sufficient to prepare an accurate bid. Contractors wishing a copy of the report may secure it with the understanding that its scope is limited to design considerations only.

APPENDIX B

TEST PIT LOGS

GZA GeoEnvironmental, Inc.
Engineers/Scientists

One Edgewater Drive
Norwood, Massachusetts 02062

Proposed Development - Rt. 17/161
Thompsonville, New York

Test Pit No.	TP-13
Page No.	1 of 1
File No.	16770.00
Checked By:	MBH

Excavation Equipment

GZA Rep.	M. A. Ponti, Jr.	Contractor	Kevin Rieber Contracting Company	Date	05/11/01
		Operator	Bill	Ground Elev.	
Weather	85°, Sunny	Make	J. Deere	Model	310D
		Capacity	0.8 cu. yd.	Reach	17 ft.
				Time Started	
				Time Completed	

Depth	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulders: Count/ Class	Note No.
0						
1'	Light brown, fine to medium SAND, trace Silt. (1.8')			E		
2'	Red brown, tan SILT, little fine Sand. (2.4')			E		
3'				E		
4'	Red brown, fine to coarse SAND, little Gravel, trace Silt.			E		
5'				E		
6'	(6')			E		
7'				E		
8'	Brown, fine SAND and GRAVEL, some(-) Cobbles, trace Boulders, trace(+) Silt.			E	1A+, 3A-	
9'				E	1A+, 5A	
10'				E	2A+, 5A	
11'				E	2A+, 3A	
	Bottom of Test Pit at 11'.					
12'						
13'						
14'						
15'						
16'						

Notes:

1. Percolation test conducted adjacent to deep hole between 2.4' and 3.9' below existing grade.
2. Presoak exhibited a 12" drop in approximately 2 minutes. Percolation test results:

12"-9":	1.5 minutes
9"-6":	1 minute
6"-3":	1 minute

Test Pit Plan

14' × 3'

NORTH

Volume = 17 cu. yd.

Boulder Class

Letter Designation	Size Range Classification
A	6" - 17"
B	18" - 36"
C	36" and Larger

Excavation Effort
E — Easy
M — Moderate
D — Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations
F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

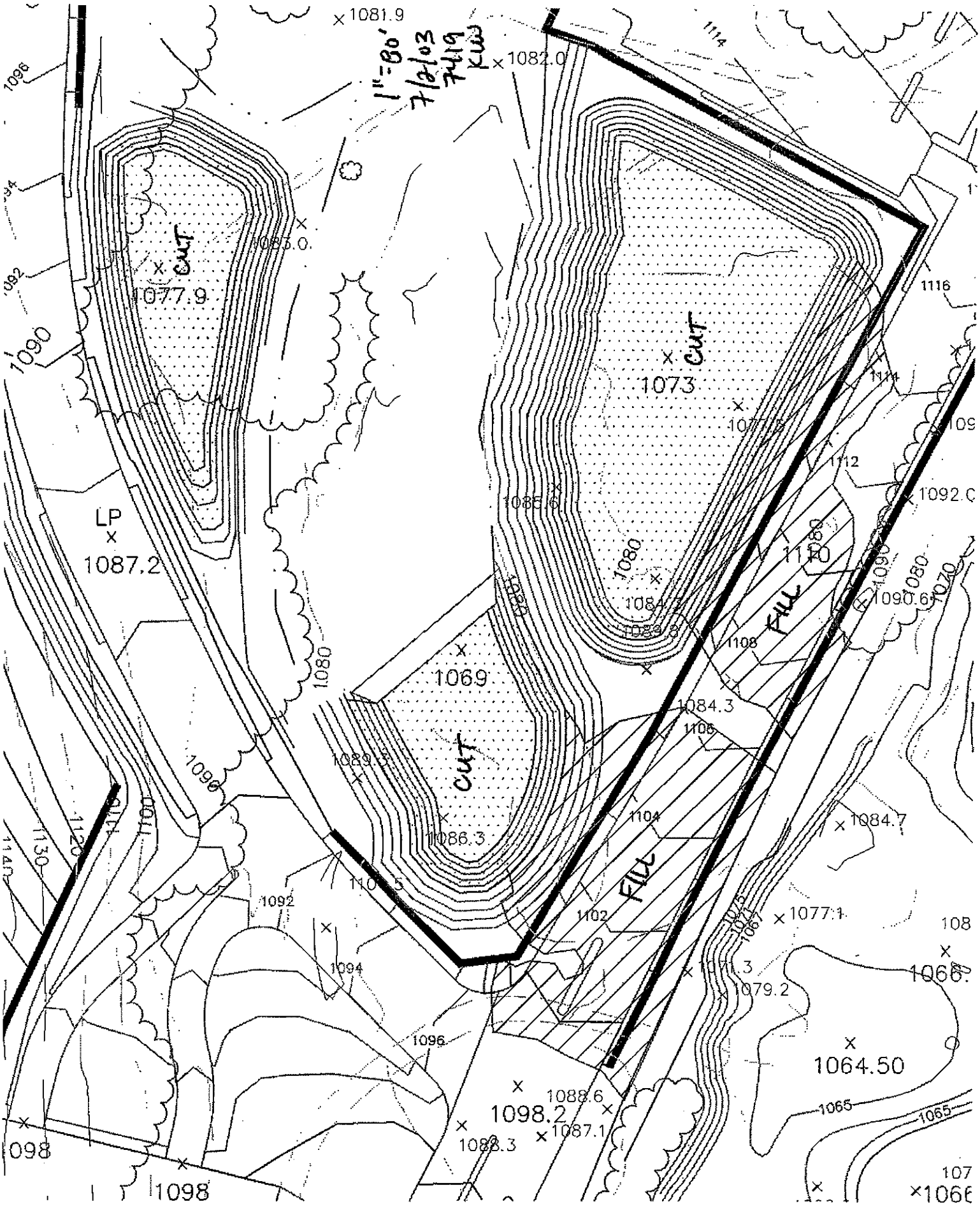
GROUNDWATER
( ) Encountered
(X) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Groundwater

GZA GeoEnvironmental, Inc.

G:\16770.2GN\6770-00.MBH\report\test.pit\TP13.XLS]TESTPIT

I-1-12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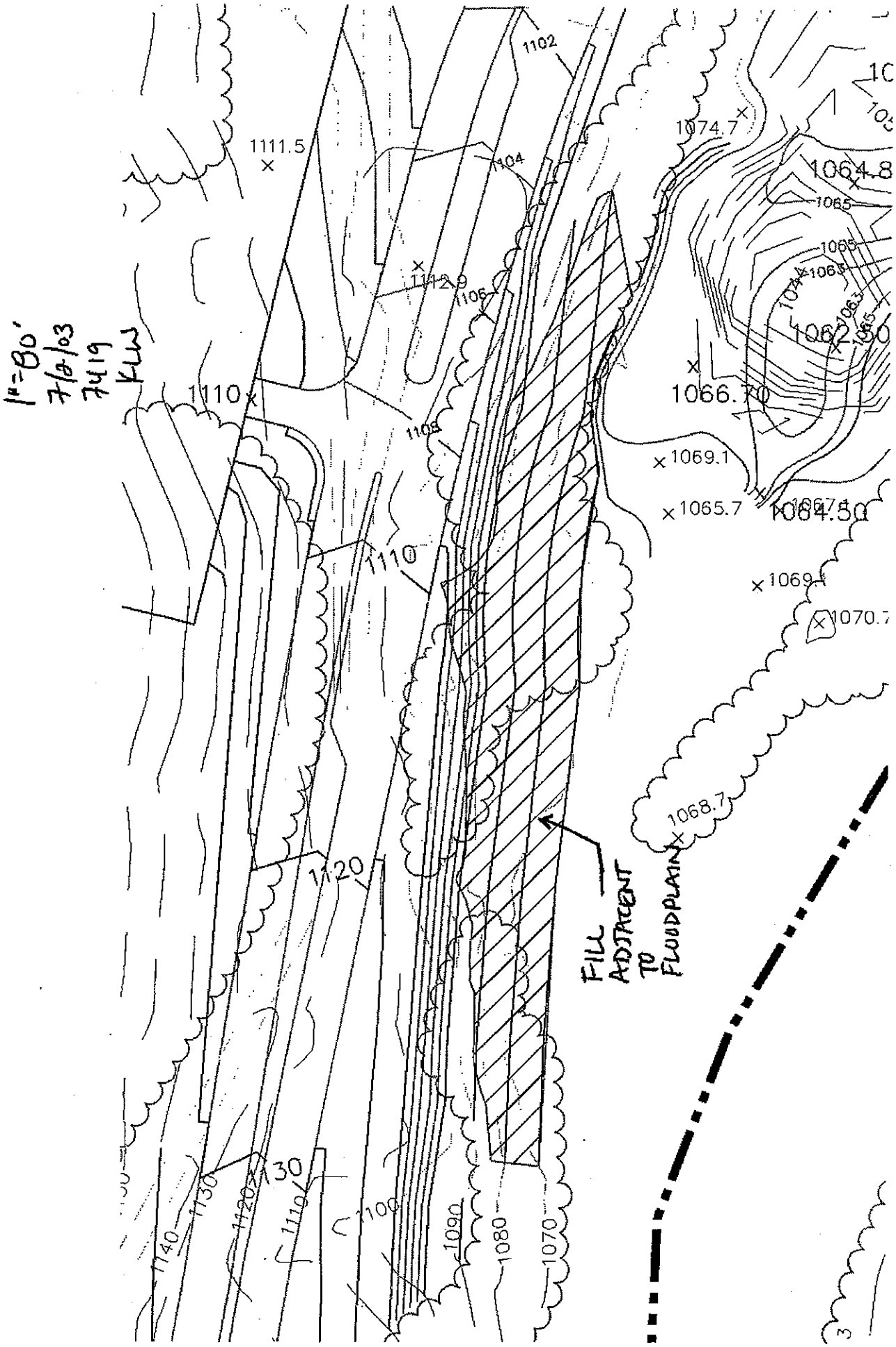
7/8/03
7419
KW
CUT
1077.9
CUT
1073
LP
1087.2
1069
CUT
FILL
FILL
1064.50
1098.2
1081.9
1082.0
1083.0
1085.6
1084.3
1089.8
1089.3
1086.3
1084.7
1077.1
1079.2
1088.6
1087.1
1088.3
1090.6
1092.0
1066.
1065
1065
1098
1098
1066

I-2-2


1" = 80'
7/8/03
7419
KLW
1102
1111.5
1104
1112.9
1106
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1108
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1120
1130
1140
1130
1120
1110
1100
1090
1080
1070
1074.7
1064.8
1065
1065
1065
1074
1063
1065
1062.50
1066.70
1069.1
1065.7
1064.50
1069.4
1070.7
1068.7
FILL ADJACENT TO FLOODPLAIN

Proposed Stockbridge-Munsee Casino
Thompson, NY

7419
By: KLW
07/03/03

100-Year Floodplain Compensatory Storage Volumes

Proposed Compensatory Storage Area

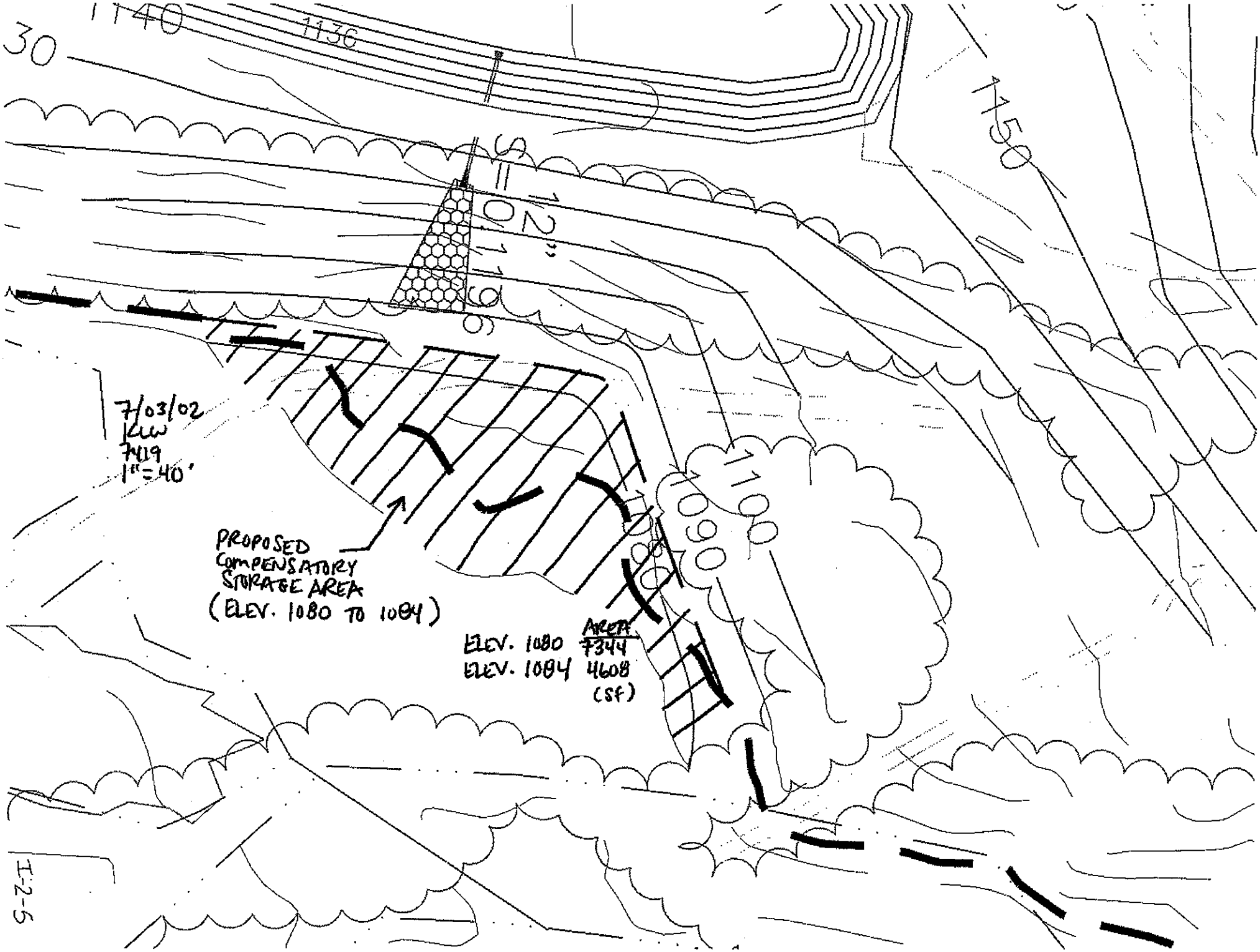
Elevation (feet)	Area (sf)	Average Area (sf)	Incremental Volume (cf)	Accumulative Volume (cf)	Accumulative Volume (ac-ft)
1080	7,344	0	0	0	0
1084	4,608	5,976	23,905	23,905	0.55

Infiltration Basin 1
Accumulative Storage Volume provided in basin above the peak elevation and storage volume required to detain the 100-year, 24-hour storm event = 5.94 ac-feet (see attached sheets)

Water Quality Basin 1
Accumulative Storage Volume provided in basin above the peak elevation and storage volume required to detain the 100-year, 24-hour storm event = 0.54 ac-feet (see attached sheets)

Total Compensatory Storage Volume provided on-site = 0.55 ac-ft + 5.94 ac-ft + 0.54 ac-ft = 7.03 ac-ft

Required Compensatory Storage Volume (based on proposed fill) = 7.03 ac-ft


30
1140
1136
1150
1100
1090
1080
7/03/02
KW
7419
1"=40'
PROPOSED
COMPENSATORY
STORAGE AREA
(ELEV. 1080 TO 1084)
ELEV. 1080 AREA 7344
ELEV. 1084 4608
(SF)

Pond 5P: infiltration basin 1

Inflow Area =	144.690 ac,	Inflow Depth = 2.59"		
Inflow =	38.60 cfs @	13.74 hrs, Volume=	31.222 af	
Outflow =	32.56 cfs @	18.26 hrs, Volume=	25.883 af,	Atten= 16%, Lag= 271.1 min
Primary =	31.10 cfs @	18.26 hrs, Volume=	24.673 af	
Secondary =	1.46 cfs @	18.26 hrs, Volume=	1.210 af	

Routing by Stor-Ind method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs

Peak Elev= 1,082.81' Surf.Area= 1.035 ac Storage= 7.840 af
Plug-Flow detention time= 158.9 min calculated for 25.883 af (83% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,074.00	0.700	0.000	0.000
1,084.00	1.080	8.900	8.900
1,088.00	1.260	4.680	13.580

Primary OutFlow Max=31.10 cfs @ 18.26 hrs HW=1,082.81' (Free Discharge)
└**2=Culvert** (Controls 31.10 cfs)

Secondary OutFlow Max=1.46 cfs @ 18.26 hrs HW=1,082.81' (Free Discharge)
└**1=Exfiltration** (Controls 1.46 cfs)

#	Routing	Invert	Outlet Devices
1	Secondary	1,074.00'	**0.006000 fpm Exfiltration over Surface area above Invert**
2	Primary	1,077.00'	**24.0" x 153.0' long Culvert** Ke= 0.600 Outlet Invert= 1,073.02' S= 0.0260 '/' n= 0.013 Cc= 0.900

100-YR COMPENSATORY STORAGE VOLUME

ELEV.	AREA (AC.)	AVE. AREA (AC.)	INC. STORAGE VOLUME (AC-FT)	ACC. STORAGE VOLUME (AC-FT)
1082.81	1.04	0	0	0
1084	1.08	1.06	1.26	1.26
1088	1.26	1.17	4.68	5.94

Pond 4P: Water Quality Basin 1

Inflow Area =	70.950 ac,	Inflow Depth = 4.94"		
Inflow =	282.01 cfs @	12.03 hrs, Volume=	29.234 af	
Outflow =	184.94 cfs @	12.21 hrs, Volume=	28.838 af,	Atten= 34%, Lag= 10.9 min
Primary =	168.38 cfs @	12.21 hrs, Volume=	28.585 af	
Secondary =	16.56 cfs @	12.21 hrs, Volume=	0.253 af	

Routing by Stor-Ind method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs

Peak Elev= 1,086.96' Surf.Area= 0.496 ac Storage= 3.309 af
Plug-Flow detention time= 19.1 min calculated for 28.633 af (98% of inflow)
Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,077.90	0.000	0.000	0.000
1,078.00	0.240	0.012	0.012
1,084.00	0.400	1.920	1.932
1,088.00	0.530	1.860	3.792

Primary OutFlow Max=167.95 cfs @ 12.21 hrs HW=1,086.93' (Free Discharge)
└**1=Culvert** (Controls 167.95 cfs)

Secondary OutFlow Max=15.77 cfs @ 12.21 hrs HW=1,086.93' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 15.77 cfs)

#	Routing	Invert	Outlet Devices
1	Primary	1,078.50'	**36.0" x 29.0' long Culvert X 2.00** Ke= 0.600 Outlet Invert= 1,077.92' S= 0.0200 '/' n= 0.013 Cc= 0.900
2	Secondary	1,086.00'	**5.0' long x 1.0' high Sharp-Crested Rectangular Weir** 2 End Contraction(s)

100-YR COMPENSATORY STORAGE

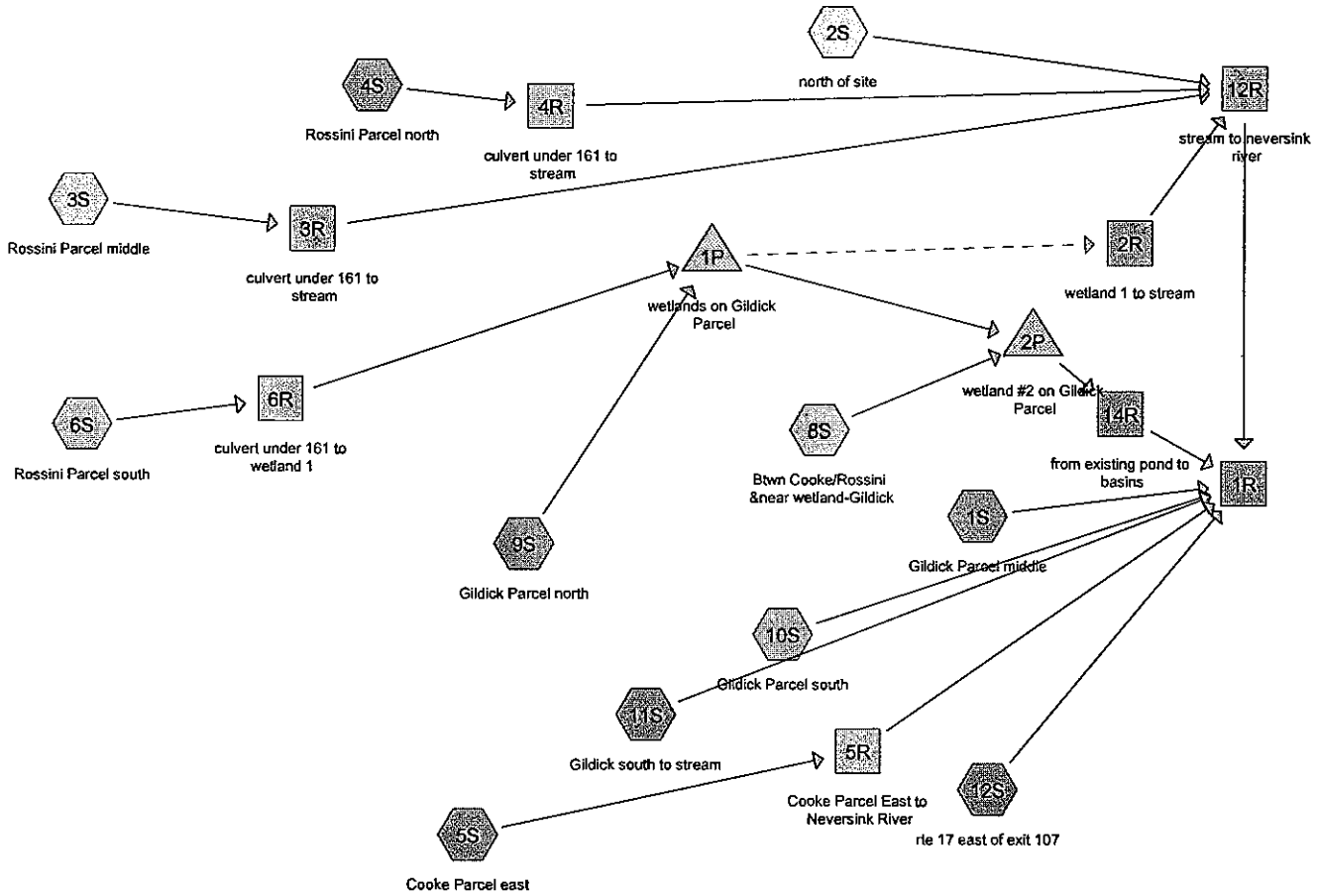
ELEV.	AREA (AC.)	AVE. AREA (AC.)	INC. STORAGE VOLUME (AC-FT)	ACC. STORAGE VOLUME (AC-FT)
1086.96	0.50	0	0	0
1088.00	0.53	0.515	0.54	0.54

Appendix L-3

Water Quality Treatment

HydroCAD© Analysis
Input/Output Data

Existing Conditions



Drainage Diagram for Trading Cove - Existing Conditions Reach 1
Prepared by Tetra Tech
HydroCAD® 9.00 s/n 00983 © 2009 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
28.360	56	FIELD (3S, 4S, 5S, 6S)
160.230	56	field (1S, 2S, 8S, 9S, 10S)
144.630	60	FOREST (3S, 4S, 5S, 6S)
334.490	60	forest (1S, 2S, 8S, 9S, 10S)
65.380	60	grassed (11S, 12S)
37.470	85	gravel pit (2S)
0.690	98	paved (5S)
8.510	98	paved road (12S)
5.120	98	road (8S, 9S, 10S, 11S)
784.880		**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Goup	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
784.880	Other	1S, 2S, 3S, 4S, 5S, 6S, 8S, 9S, 10S, 11S, 12S
784.880		**TOTAL AREA**

Time span=10.00-24.00 hrs, dt=0.10 hrs, 141 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Gildick Parcel middle Runoff Area=44.950 ac 0.00% Impervious Runoff Depth>0.30"
Flow Length=1,500' Tc=39.1 min CN=59 Runoff=4.92 cfs 1.113 af

Subcatchment 2S: north of site Runoff Area=314.160 ac 0.00% Impervious Runoff Depth>0.38"
Flow Length=5,678' Slope=0.0560 '/' Tc=92.2 min CN=62 Runoff=31.66 cfs 9.959 af

Subcatchment 3S: Rossini Parcel middle Runoff Area=56.440 ac 0.00% Impervious Runoff Depth>0.33"
Flow Length=2,340' Tc=40.4 min CN=60 Runoff=7.19 cfs 1.538 af

Subcatchment 4S: Rossini Parcel north Runoff Area=32.050 ac 0.00% Impervious Runoff Depth>0.33"
Flow Length=2,490' Tc=43.8 min CN=60 Runoff=3.89 cfs 0.872 af

Subcatchment 5S: Cooke Parcel east Runoff Area=59.130 ac 1.17% Impervious Runoff Depth>0.33"
Flow Length=1,229' Tc=26.4 min CN=60 Runoff=9.95 cfs 1.624 af

Subcatchment 6S: Rossini Parcel south Runoff Area=26.060 ac 0.00% Impervious Runoff Depth>0.30"
Flow Length=1,112' Tc=27.7 min CN=59 Runoff=3.51 cfs 0.650 af

Subcatchment 8S: Btwn Cooke/Rossini Runoff Area=86.450 ac 0.80% Impervious Runoff Depth>0.29"
Flow Length=4,136' Tc=69.7 min CN=59 Runoff=6.70 cfs 2.102 af

Subcatchment 9S: Gildick Parcel north Runoff Area=42.790 ac 2.57% Impervious Runoff Depth>0.33"
Flow Length=603' Slope=0.1990 '/' Tc=12.0 min CN=60 Runoff=11.53 cfs 1.185 af

Subcatchment 10S: Gildick Parcel south Runoff Area=47.190 ac 3.31% Impervious Runoff Depth>0.27"
Flow Length=2,639' Slope=0.0770 '/' Tc=42.5 min CN=58 Runoff=4.11 cfs 1.053 af

Subcatchment 11S: Gildick south to stream Runoff Area=30.240 ac 5.85% Impervious Runoff Depth>0.40"
Flow Length=3,172' Slope=0.1400 '/' Tc=10.9 min CN=62 Runoff=12.06 cfs 1.001 af

Subcatchment 12S: rte 17 east of exit 107 Runoff Area=45.420 ac 18.74% Impervious Runoff Depth>0.58"
Flow Length=3,174' Slope=0.1400 '/' Tc=10.9 min CN=67 Runoff=32.49 cfs 2.210 af

Reach 1R: Inflow=51.67 cfs 20.107 af
Outflow=51.67 cfs 20.107 af

Reach 2R: wetland 1 to stream Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=2,800.0' S=0.1400 '/' Capacity=1,973.89 cfs Outflow=0.00 cfs 0.000 af

Reach 3R: culvert under 161 to stream Avg. Depth=0.24' Max Vel=2.07 fps Inflow=7.19 cfs 1.538 af
n=0.050 L=3,715.0' S=0.0350 '/' Capacity=311.05 cfs Outflow=4.96 cfs 1.448 af

Reach 4R: culvert under 161 to stream Avg. Depth=0.16' Max Vel=1.78 fps Inflow=3.89 cfs 0.872 af
n=0.050 L=2,940.0' S=0.0430 '/' Capacity=344.77 cfs Outflow=2.84 cfs 0.825 af

Reach 5R: Cooke Parcel East to Neversink Avg. Depth=0.29' Max Vel=2.21 fps Inflow=9.95 cfs 1.624 af
n=0.050 L=2,775.0' S=0.0300 '/' Capacity=287.97 cfs Outflow=6.51 cfs 1.554 af

Reach 6R: culvert under 161 to wetland 1 Avg. Depth=0.12' Max Vel=2.95 fps Inflow=3.51 cfs 0.650 af
n=0.050 L=571.0' S=0.1750 '/' Capacity=695.54 cfs Outflow=3.39 cfs 0.645 af

Reach 12R: stream to neversink river Avg. Depth=0.29' Max Vel=2.59 fps Inflow=39.33 cfs 12.231 af
n=0.025 L=1,000.0' S=0.0100 '/' Capacity=1,865.25 cfs Outflow=39.09 cfs 12.076 af

Reach 14R: from existing pond to basins Avg. Depth=0.44' Max Vel=4.43 fps Inflow=1.69 cfs 1.101 af
15.0" Round Pipe n=0.013 L=90.0' S=0.0100 '/' Capacity=6.46 cfs Outflow=1.69 cfs 1.099 af

Pond 1P: wetlands on Gildick Parcel Peak Elev=1,104.92' Storage=1.827 af Inflow=11.83 cfs 1.830 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 2P: wetland #2 on Gildick Parcel Peak Elev=1,079.49' Storage=1.088 af Inflow=6.70 cfs 2.102 af
Outflow=1.69 cfs 1.101 af

Total Runoff Area = 784.880 ac Runoff Volume = 23.307 af Average Runoff Depth = 0.36"
98.18% Pervious = 770.560 ac 1.82% Impervious = 14.320 ac

Summary for Subcatchment 1S: Gildick Parcel middle

Runoff = 4.92 cfs @ 12.47 hrs, Volume= 1.113 af, Depth> 0.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	29.950	60	forest
*	15.000	56	field
	44.950	59	Weighted Average
	44.950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.1	100	0.0100	0.06		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
12.0	1,400	0.1500	1.94		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
39.1	1,500	Total			

Summary for Subcatchment 2S: north of site

Runoff = 31.66 cfs @ 13.25 hrs, Volume= 9.959 af, Depth> 0.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	198.130	60	forest
*	78.560	56	field
*	37.470	85	gravel pit
	314.160	62	Weighted Average
	314.160		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0560	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
78.6	5,578	0.0560	1.18		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
92.2	5,678	Total			

Summary for Subcatchment 3S: Rossini Parcel middle

Runoff = 7.19 cfs @ 12.47 hrs, Volume= 1.538 af, Depth> 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	49.870	60	FOREST
*	6.570	56	FIELD
	56.440	60	Weighted Average
	56.440		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
27.8	2,200	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	5.17	25.39	**Pipe Channel, Segment ID:** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.021
40.4	2,340	Total			

Summary for Subcatchment 4S: Rossini Parcel north

Runoff = 3.89 cfs @ 12.53 hrs, Volume= 0.872 af, Depth> 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	29.310	60	FOREST
*	2.740	56	FIELD
	32.050	60	Weighted Average
	32.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0645	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
30.8	2,350	0.0645	1.27		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
43.8	2,490	Total			

Summary for Subcatchment 5S: Cooke Parcel east

Runoff = 9.95 cfs @ 12.25 hrs, Volume= 1.624 af, Depth> 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	44.950	60	FOREST
*	13.490	56	FIELD
*	0.690	98	paved
	59.130	60	Weighted Average
	58.440		98.83% Pervious Area
	0.690		1.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	1,089	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
26.4	1,229	Total			

Summary for Subcatchment 6S: Rossini Parcel south

Runoff = 3.51 cfs @ 12.28 hrs, Volume= 0.650 af, Depth> 0.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	20.500	60	FOREST
*	5.560	56	FIELD
	26.060	59	Weighted Average
	26.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	972	0.0550	1.17		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.2	40	0.0100	3.95	8.61	**Pipe Channel, Segment ID:** 20.0" Round Area= 2.2 sf Perim= 5.2' r= 0.42' n= 0.021
27.7	1,112	Total			

Summary for Subcatchment 8S: Btwn Cooke/Rossini &near wetland-Gildick

Runoff = 6.70 cfs @ 12.96 hrs, Volume= 2.102 af, Depth> 0.29"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	58.770	60	forest
*	26.990	56	field
*	0.690	98	road
	86.450	59	Weighted Average
	85.760		99.20% Pervious Area
	0.690		0.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0430	0.11		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
43.4	2,700	0.0430	1.04		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	9.44	66.70	**Pipe Channel, Segment ID:** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013
11.1	1,296	0.1512	1.94		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
69.7	4,136	Total			

Summary for Subcatchment 9S: Gildick Parcel north

Runoff = 11.53 cfs @ 12.04 hrs, Volume= 1.185 af, Depth> 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	36.150	60	forest
*	5.540	56	field
*	1.100	98	road
	42.790	60	Weighted Average
	41.690		97.43% Pervious Area
	1.100		2.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	100	0.1990	0.20		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
3.8	503	0.1990	2.23		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
12.0	603	Total			

Summary for Subcatchment 10S: Gildick Parcel south

Runoff = 4.11 cfs @ 12.54 hrs, Volume= 1.053 af, Depth> 0.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	11.490	60	forest
*	34.140	56	field
*	1.560	98	road
	47.190	58	Weighted Average
	45.630		96.69% Pervious Area
	1.560		3.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0770	0.14		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
30.5	2,539	0.0770	1.39		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
42.5	2,639	Total			

Summary for Subcatchment 11S: Gildick south to stream

[49] Hint: Tc<2dt may require smaller dt

Runoff = 12.06 cfs @ 12.02 hrs, Volume= 1.001 af, Depth> 0.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	28.470	60	grassed
*	1.770	98	road
	30.240	62	Weighted Average
	28.470		94.15% Pervious Area
	1.770		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	3,072	0.1400	34.17	922.71	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
10.9	3,172	Total			

Summary for Subcatchment 12S: rte 17 east of exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 32.49 cfs @ 12.00 hrs, Volume= 2.210 af, Depth> 0.58"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	36.910	60	grassed
*	8.510	98	paved road
	45.420	67	Weighted Average
	36.910		81.26% Pervious Area
	8.510		18.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	3,074	0.1400	34.17	922.71	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
10.9	3,174	Total			

Summary for Reach 1R:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 784.880 ac, 1.82% Impervious, Inflow Depth > 0.31" for 1 YR event
Inflow = 51.67 cfs @ 13.39 hrs, Volume= 20.107 af
Outflow = 51.67 cfs @ 13.39 hrs, Volume= 20.107 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs

Summary for Reach 2R: wetland 1 to stream

[65] Warning: Inlet elevation not specified

Inflow = 0.00 cfs @ 10.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 10.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 10.00 hrs, Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,973.89 cfs

30.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 33.00'
Length= 2,800.0' Slope= 0.1400 '/'
Inlet Invert= 0.00', Outlet Invert= -392.00'

Summary for Reach 3R: culvert under 161 to stream

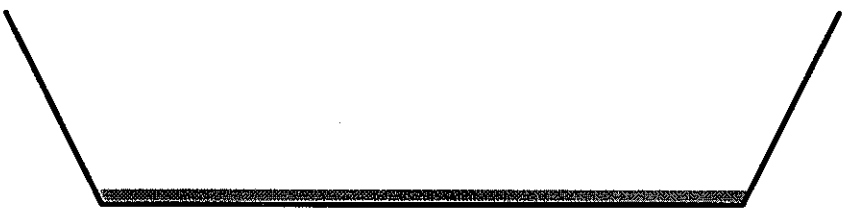
[65] Warning: Inlet elevation not specified

Inflow Area = 56.440 ac, 0.00% Impervious, Inflow Depth > 0.33" for 1 YR event
Inflow = 7.19 cfs @ 12.47 hrs, Volume= 1.538 af
Outflow = 4.96 cfs @ 13.35 hrs, Volume= 1.448 af, Atten= 31%, Lag= 52.8 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.07 fps, Min. Travel Time= 29.9 min
Avg. Velocity = 1.22 fps, Avg. Travel Time= 50.6 min

Peak Storage= 8,892 cf @ 12.85 hrs, Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 311.05 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 3,715.0' Slope= 0.0350 '/'
Inlet Invert= 0.00', Outlet Invert= -130.03'



Summary for Reach 4R: culvert under 161 to stream

[65] Warning: Inlet elevation not specified

Inflow Area = 32.050 ac, 0.00% Impervious, Inflow Depth > 0.33" for 1 YR event
Inflow = 3.89 cfs @ 12.53 hrs, Volume= 0.872 af
Outflow = 2.84 cfs @ 13.35 hrs, Volume= 0.825 af, Atten= 27%, Lag= 49.2 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 1.78 fps, Min. Travel Time= 27.5 min
Avg. Velocity = 1.06 fps, Avg. Travel Time= 46.4 min

Peak Storage= 4,705 cf @ 12.89 hrs, Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 344.77 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 2,940.0' Slope= 0.0430 '/'
Inlet Invert= 0.00', Outlet Invert= -126.42'

Summary for Reach 5R: Cooke Parcel East to Neversink River

[65] Warning: Inlet elevation not specified

Inflow Area = 59.130 ac, 1.17% Impervious, Inflow Depth > 0.33" for 1 YR event
Inflow = 9.95 cfs @ 12.25 hrs, Volume= 1.624 af
Outflow = 6.51 cfs @ 12.88 hrs, Volume= 1.554 af, Atten= 35%, Lag= 38.2 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.21 fps, Min. Travel Time= 21.0 min
Avg. Velocity = 1.19 fps, Avg. Travel Time= 38.9 min

Peak Storage= 8,296 cf @ 12.52 hrs, Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 287.97 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 2,775.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -83.25'

Summary for Reach 6R: culvert under 161 to wetland 1

[65] Warning: Inlet elevation not specified

Inflow Area = 26.060 ac, 0.00% Impervious, Inflow Depth > 0.30" for 1 YR event
Inflow = 3.51 cfs @ 12.28 hrs, Volume= 0.650 af
Outflow = 3.39 cfs @ 12.39 hrs, Volume= 0.645 af, Atten= 3%, Lag= 6.3 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.95 fps, Min. Travel Time= 3.2 min
Avg. Velocity = 1.47 fps, Avg. Travel Time= 6.5 min

Peak Storage= 678 cf @ 12.32 hrs, Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 695.54 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 571.0' Slope= 0.1750 '/'
Inlet Invert= 0.00', Outlet Invert= -99.93'

Summary for Reach 12R: stream to neversink river

[65] Warning: Inlet elevation not specified

Inflow Area =	402.650 ac,	0.00% Impervious,	Inflow Depth >	0.36"	for 1 YR event
Inflow =	39.33 cfs @	13.29 hrs,	Volume=	12.231 af	
Outflow =	39.09 cfs @	13.47 hrs,	Volume=	12.076 af,	Atten= 1%, Lag= 10.8 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.59 fps, Min. Travel Time= 6.4 min
Avg. Velocity = 1.52 fps, Avg. Travel Time= 10.9 min

Peak Storage= 15,108 cf @ 13.36 hrs, Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,865.25 cfs

52.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 55.00'
Length= 1,000.0' Slope= 0.0100 '/'
Inlet Invert= 0.00', Outlet Invert= -10.00'

Summary for Reach 14R: from existing pond to basins

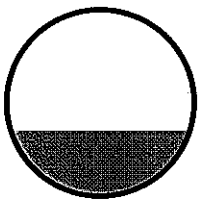
[52] Hint: Inlet/Outlet conditions not evaluated
[65] Warning: Inlet elevation not specified

Inflow Area =	155.300 ac,	1.15% Impervious,	Inflow Depth >	0.09"	for 1 YR event
Inflow =	1.69 cfs @	17.34 hrs,	Volume=	1.101 af	
Outflow =	1.69 cfs @	17.35 hrs,	Volume=	1.099 af,	Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 4.43 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.99 fps, Avg. Travel Time= 0.4 min

Peak Storage= 34 cf @ 17.34 hrs, Average Depth at Peak Storage= 0.44'
Bank-Full Depth= 1.25', Capacity at Bank-Full= 6.46 cfs

15.0" Round Pipe
n= 0.013
Length= 90.0' Slope= 0.0100 '/'
Inlet Invert= 0.00', Outlet Invert= -0.90'



Summary for Pond 1P: wetlands on Gildick Parcel

Inflow Area =	68.850 ac,	1.60% Impervious,	Inflow Depth >	0.32"	for 1 YR event
Inflow =	11.83 cfs @	12.04 hrs,	Volume=	1.830 af	
Outflow =	0.00 cfs @	10.00 hrs,	Volume=	0.000 af,	Atten= 100%, Lag= 0.0 min
Primary =	0.00 cfs @	10.00 hrs,	Volume=	0.000 af	
Secondary =	0.00 cfs @	10.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Peak Elev= 1,104.92' @ 24.00 hrs Surf.Area= 1.720 ac Storage= 1.827 af

Plug-Flow detention time= (not calculated: initial storage excedes outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	1,103.40'	15.137 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,103.40	0.000	0.000	0.000
1,104.00	0.490	0.147	0.147
1,106.00	3.170	3.660	3.807
1,108.00	8.160	11.330	15.137

Device	Routing	Invert	Outlet Devices
#1	Secondary	1,107.30'	**50.0' long Broad-Crested Rectangular Weir**
			Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00
			Coef. (English) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
#2	Primary	1,106.20'	**80.0' long Broad-Crested Rectangular Weir**
			Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00
			Coef. (English) 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30

Primary OutFlow Max=0.00 cfs @ 10.00 hrs HW=1,103.40' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 10.00 hrs HW=1,103.40' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: wetland #2 on Gildick Parcel

Inflow Area =	155.300 ac,	1.15% Impervious,	Inflow Depth >	0.16"	for 1 YR event
Inflow =	6.70 cfs @	12.96 hrs,	Volume=	2.102 af	
Outflow =	1.69 cfs @	17.34 hrs,	Volume=	1.101 af,	Atten= 75%, Lag= 262.6 min
Primary =	1.69 cfs @	17.34 hrs,	Volume=	1.101 af	

Routing by Stor-Ind method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Peak Elev= 1,079.49' @ 17.34 hrs Surf.Area= 0.997 ac Storage= 1.088 af

Plug-Flow detention time= 330.6 min calculated for 1.101 af (52% of inflow)
Center-of-Mass det. time= 174.0 min (1,147.9 - 973.9)

Volume	Invert	Avail.Storage	Storage Description
#1	1,078.30'	14.236 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,078.30	0.710	0.000	0.000
1,080.00	1.120	1.556	1.556
1,082.00	2.000	3.120	4.676
1,084.00	2.380	4.380	9.056
1,086.00	2.800	5.180	14.236

Device	Routing	Invert	Outlet Devices
#1	Primary	1,079.00'	**36.0" Round Culvert** L= 1,000.0' Ke= 0.600 Outlet Invert= 1,029.00' S= 0.0500 '/' Cc= 0.900 n= 0.024
#2	Primary	1,084.00'	**2.0' long Broad-Crested Rectangular Weir** Head (feet) 0.50 1.00 1.50 2.00 Coef. (English) 2.79 2.93 3.06 3.30

Primary OutFlow Max=1.68 cfs @ 17.34 hrs HW=1,079.49' (Free Discharge)
├─**1=Culvert** (Inlet Controls 1.68 cfs @ 2.23 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=10.00-24.00 hrs, dt=0.10 hrs, 141 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Gildick Parcel middle Runoff Area=44.950 ac 0.00% Impervious Runoff Depth>0.48"
Flow Length=1,500' Tc=39.1 min CN=59 Runoff=10.17 cfs 1.811 af

Subcatchment 2S: north of site Runoff Area=314.160 ac 0.00% Impervious Runoff Depth>0.59"
Flow Length=5,678' Slope=0.0560 '/' Tc=92.2 min CN=62 Runoff=55.43 cfs 15.470 af

Subcatchment 3S: Rossini Parcel middle Runoff Area=56.440 ac 0.00% Impervious Runoff Depth>0.52"
Flow Length=2,340' Tc=40.4 min CN=60 Runoff=14.17 cfs 2.458 af

Subcatchment 4S: Rossini Parcel north Runoff Area=32.050 ac 0.00% Impervious Runoff Depth>0.52"
Flow Length=2,490' Tc=43.8 min CN=60 Runoff=7.60 cfs 1.394 af

Subcatchment 5S: Cooke Parcel east Runoff Area=59.130 ac 1.17% Impervious Runoff Depth>0.53"
Flow Length=1,229' Tc=26.4 min CN=60 Runoff=19.97 cfs 2.593 af

Subcatchment 6S: Rossini Parcel south Runoff Area=26.060 ac 0.00% Impervious Runoff Depth>0.49"
Flow Length=1,112' Tc=27.7 min CN=59 Runoff=7.50 cfs 1.056 af

Subcatchment 8S: Btwn Cooke/Rossini Runoff Area=86.450 ac 0.80% Impervious Runoff Depth>0.48"
Flow Length=4,136' Tc=69.7 min CN=59 Runoff=13.20 cfs 3.427 af

Subcatchment 9S: Gildick Parcel north Runoff Area=42.790 ac 2.57% Impervious Runoff Depth>0.53"
Flow Length=603' Slope=0.1990 '/' Tc=12.0 min CN=60 Runoff=23.48 cfs 1.890 af

Subcatchment 10S: Gildick Parcel south Runoff Area=47.190 ac 3.31% Impervious Runoff Depth>0.44"
Flow Length=2,639' Slope=0.0770 '/' Tc=42.5 min CN=58 Runoff=8.82 cfs 1.748 af

Subcatchment 11S: Gildick south to stream Runoff Area=30.240 ac 5.85% Impervious Runoff Depth>0.61"
Flow Length=3,172' Slope=0.1400 '/' Tc=10.9 min CN=62 Runoff=21.82 cfs 1.548 af

Subcatchment 12S: rte 17 east of exit 107 Runoff Area=45.420 ac 18.74% Impervious Runoff Depth>0.85"
Flow Length=3,174' Slope=0.1400 '/' Tc=10.9 min CN=67 Runoff=50.46 cfs 3.212 af

Reach 1R: Inflow=93.11 cfs 32.165 af
Outflow=93.11 cfs 32.165 af

Reach 2R: wetland 1 to stream Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=2,800.0' S=0.1400 '/' Capacity=1,973.89 cfs Outflow=0.00 cfs 0.000 af

Reach 3R: culvert under 161 to stream Avg. Depth=0.38' Max Vel=2.78 fps Inflow=14.17 cfs 2.458 af
n=0.050 L=3,715.0' S=0.0350 '/' Capacity=311.05 cfs Outflow=10.53 cfs 2.352 af

Reach 4R: culvert under 161 to stream Avg. Depth=0.25' Max Vel=2.38 fps Inflow=7.60 cfs 1.394 af
n=0.050 L=2,940.0' S=0.0430 '/' Capacity=344.77 cfs Outflow=5.98 cfs 1.338 af

Reach 5R: Cooke Parcel East to Neversink Avg. Depth=0.48' Max Vel=2.98 fps Inflow=19.97 cfs 2.593 af
n=0.050 L=2,775.0' S=0.0300 '/' Capacity=287.97 cfs Outflow=14.28 cfs 2.511 af

Reach 6R: culvert under 161 to wetland 1 Avg. Depth=0.18' Max Vel=3.95 fps Inflow=7.50 cfs 1.056 af
n=0.050 L=571.0' S=0.1750 '/' Capacity=695.54 cfs Outflow=7.23 cfs 1.050 af

Reach 12R: stream to neversink river Avg. Depth=0.42' Max Vel=3.28 fps Inflow=71.53 cfs 19.160 af
n=0.025 L=1,000.0' S=0.0100 '/' Capacity=1,865.25 cfs Outflow=71.15 cfs 18.979 af

Reach 14R: from existing pond to basins Avg. Depth=0.75' Max Vel=5.63 fps Inflow=4.30 cfs 2.358 af
15.0" Round Pipe n=0.013 L=90.0' S=0.0100 '/' Capacity=6.46 cfs Outflow=4.30 cfs 2.357 af

Pond 1P: wetlands on Gildick Parcel Peak Elev=1,105.52' Storage=2.936 af Inflow=24.63 cfs 2.940 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 2P: wetland #2 on Gildick Parcel Peak Elev=1,079.80' Storage=1.370 af Inflow=13.20 cfs 3.427 af
Outflow=4.30 cfs 2.358 af

Total Runoff Area = 784.880 ac Runoff Volume = 36.606 af Average Runoff Depth = 0.56"
98.18% Pervious = 770.560 ac 1.82% Impervious = 14.320 ac

Summary for Subcatchment 1S: Gildick Parcel middle

Runoff = 10.17 cfs @ 12.42 hrs, Volume= 1.811 af, Depth> 0.48"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	29.950	60	forest
*	15.000	56	field
	44.950	59	Weighted Average
	44.950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.1	100	0.0100	0.06		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
12.0	1,400	0.1500	1.94		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
39.1	1,500	Total			

Summary for Subcatchment 2S: north of site

Runoff = 55.43 cfs @ 13.20 hrs, Volume= 15.470 af, Depth> 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	198.130	60	forest
*	78.560	56	field
*	37.470	85	gravel pit
	314.160	62	Weighted Average
	314.160		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0560	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
78.6	5,578	0.0560	1.18		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
92.2	5,678	Total			

Summary for Subcatchment 3S: Rossini Parcel middle

Runoff = 14.17 cfs @ 12.43 hrs, Volume= 2.458 af, Depth> 0.52"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	49.870	60	FOREST
*	6.570	56	FIELD
	56.440	60	Weighted Average
	56.440		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
27.8	2,200	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	5.17	25.39	**Pipe Channel, Segment ID:** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.021
40.4	2,340	Total			

Summary for Subcatchment 4S: Rossini Parcel north

Runoff = 7.60 cfs @ 12.48 hrs, Volume= 1.394 af, Depth> 0.52"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	29.310	60	FOREST
*	2.740	56	FIELD
	32.050	60	Weighted Average
	32.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0645	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
30.8	2,350	0.0645	1.27		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
43.8	2,490	Total			

Summary for Subcatchment 5S: Cooke Parcel east

Runoff = 19.97 cfs @ 12.22 hrs, Volume= 2.593 af, Depth> 0.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	44.950	60	FOREST
*	13.490	56	FIELD
*	0.690	98	paved
	59.130	60	Weighted Average
	58.440		98.83% Pervious Area
	0.690		1.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	1,089	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
26.4	1,229	Total			

Summary for Subcatchment 6S: Rossini Parcel south

Runoff = 7.50 cfs @ 12.24 hrs, Volume= 1.056 af, Depth> 0.49"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	20.500	60	FOREST
*	5.560	56	FIELD
	26.060	59	Weighted Average
	26.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	972	0.0550	1.17		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.2	40	0.0100	3.95	8.61	**Pipe Channel, Segment ID:** 20.0" Round Area= 2.2 sf Perim= 5.2' r= 0.42' n= 0.021
27.7	1,112	Total			

Summary for Subcatchment 8S: Btwn Cooke/Rossini &near wetland-Gildick

Runoff = 13.20 cfs @ 12.89 hrs, Volume= 3.427 af, Depth> 0.48"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	58.770	60	forest
*	26.990	56	field
*	0.690	98	road
	86.450	59	Weighted Average
	85.760		99.20% Pervious Area
	0.690		0.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0430	0.11		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
43.4	2,700	0.0430	1.04		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	9.44	66.70	**Pipe Channel, Segment ID:** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013
11.1	1,296	0.1512	1.94		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
69.7	4,136	Total			

Summary for Subcatchment 9S: Gildick Parcel north

Runoff = 23.48 cfs @ 12.02 hrs, Volume= 1.890 af, Depth> 0.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	36.150	60	forest
*	5.540	56	field
*	1.100	98	road
	42.790	60	Weighted Average
	41.690		97.43% Pervious Area
	1.100		2.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	100	0.1990	0.20		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
3.8	503	0.1990	2.23		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
12.0	603	Total			

Summary for Subcatchment 10S: Gildick Parcel south

Runoff = 8.82 cfs @ 12.48 hrs, Volume= 1.748 af, Depth> 0.44"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	11.490	60	forest
*	34.140	56	field
*	1.560	98	road
	47.190	58	Weighted Average
	45.630		96.69% Pervious Area
	1.560		3.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0770	0.14		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
30.5	2,539	0.0770	1.39		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
42.5	2,639	Total			

Summary for Subcatchment 11S: Gildick south to stream

[49] Hint: Tc<2dt may require smaller dt

Runoff = 21.82 cfs @ 12.01 hrs, Volume= 1.548 af, Depth> 0.61"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	28.470	60	grassed
*	1.770	98	road
	30.240	62	Weighted Average
	28.470		94.15% Pervious Area
	1.770		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	3,072	0.1400	34.17	922.71	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
10.9	3,172	Total			

Summary for Subcatchment 12S: rte 17 east of exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 50.46 cfs @ 12.00 hrs, Volume= 3.212 af, Depth> 0.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	36.910	60	grassed
*	8.510	98	paved road
	45.420	67	Weighted Average
	36.910		81.26% Pervious Area
	8.510		18.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	3,074	0.1400	34.17	922.71	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
10.9	3,174	Total			

Summary for Reach 1R:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 784.880 ac, 1.82% Impervious, Inflow Depth > 0.49" for 2 YR event
Inflow = 93.11 cfs @ 13.22 hrs, Volume= 32.165 af
Outflow = 93.11 cfs @ 13.22 hrs, Volume= 32.165 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs

Summary for Reach 2R: wetland 1 to stream

[65] Warning: Inlet elevation not specified

Inflow = 0.00 cfs @ 10.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 10.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 10.00 hrs, Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,973.89 cfs

30.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 33.00'
Length= 2,800.0' Slope= 0.1400 '/'
Inlet Invert= 0.00', Outlet Invert= -392.00'

Summary for Reach 3R: culvert under 161 to stream

[65] Warning: Inlet elevation not specified

Inflow Area = 56.440 ac, 0.00% Impervious, Inflow Depth > 0.52" for 2 YR event
Inflow = 14.17 cfs @ 12.43 hrs, Volume= 2.458 af
Outflow = 10.53 cfs @ 13.09 hrs, Volume= 2.352 af, Atten= 26%, Lag= 39.4 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.78 fps, Min. Travel Time= 22.3 min
Avg. Velocity = 1.44 fps, Avg. Travel Time= 43.0 min

Peak Storage= 14,194 cf @ 12.71 hrs, Average Depth at Peak Storage= 0.38'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 311.05 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 3,715.0' Slope= 0.0350 '/'
Inlet Invert= 0.00', Outlet Invert= -130.03'

Summary for Reach 4R: culvert under 161 to stream

[65] Warning: Inlet elevation not specified

Inflow Area = 32.050 ac, 0.00% Impervious, Inflow Depth > 0.52" for 2 YR event
Inflow = 7.60 cfs @ 12.48 hrs, Volume= 1.394 af
Outflow = 5.98 cfs @ 13.09 hrs, Volume= 1.338 af, Atten= 21%, Lag= 36.6 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.38 fps, Min. Travel Time= 20.6 min
Avg. Velocity = 1.23 fps, Avg. Travel Time= 39.8 min

Peak Storage= 7,454 cf @ 12.74 hrs, Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 344.77 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 2,940.0' Slope= 0.0430 '/'
Inlet Invert= 0.00', Outlet Invert= -126.42'

Summary for Reach 5R: Cooke Parcel East to Neversink River

[65] Warning: Inlet elevation not specified

Inflow Area = 59.130 ac, 1.17% Impervious, Inflow Depth > 0.53" for 2 YR event
Inflow = 19.97 cfs @ 12.22 hrs, Volume= 2.593 af
Outflow = 14.28 cfs @ 12.69 hrs, Volume= 2.511 af, Atten= 28%, Lag= 27.9 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.98 fps, Min. Travel Time= 15.5 min
Avg. Velocity = 1.40 fps, Avg. Travel Time= 33.1 min

Peak Storage= 13,573 cf @ 12.42 hrs, Average Depth at Peak Storage= 0.48'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 287.97 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 2,775.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -83.25'

Summary for Reach 6R: culvert under 161 to wetland 1

[65] Warning: Inlet elevation not specified

Inflow Area = 26.060 ac, 0.00% Impervious, Inflow Depth > 0.49" for 2 YR event
Inflow = 7.50 cfs @ 12.24 hrs, Volume= 1.056 af
Outflow = 7.23 cfs @ 12.32 hrs, Volume= 1.050 af, Atten= 4%, Lag= 4.8 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 3.95 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 1.72 fps, Avg. Travel Time= 5.5 min

Peak Storage= 1,065 cf @ 12.28 hrs, Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 695.54 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 571.0' Slope= 0.1750 '/'
Inlet Invert= 0.00', Outlet Invert= -99.93'

Summary for Reach 12R: stream to neversink river

[65] Warning: Inlet elevation not specified

Inflow Area =	402.650 ac,	0.00% Impervious,	Inflow Depth >	0.57"	for 2 YR event
Inflow =	71.53 cfs @	13.15 hrs,	Volume=	19.160 af	
Outflow =	71.15 cfs @	13.29 hrs,	Volume=	18.979 af,	Atten= 1%, Lag= 8.6 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 3.28 fps, Min. Travel Time= 5.1 min
Avg. Velocity = 1.79 fps, Avg. Travel Time= 9.3 min

Peak Storage= 21,715 cf @ 13.21 hrs, Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,865.25 cfs

52.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 55.00'
Length= 1,000.0' Slope= 0.0100 '/'
Inlet Invert= 0.00', Outlet Invert= -10.00'

‡

Summary for Reach 14R: from existing pond to basins

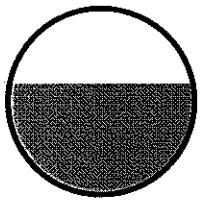
[52] Hint: Inlet/Outlet conditions not evaluated
[65] Warning: Inlet elevation not specified

Inflow Area =	155.300 ac,	1.15% Impervious,	Inflow Depth >	0.18"	for 2 YR event
Inflow =	4.30 cfs @	14.81 hrs,	Volume=	2.358 af	
Outflow =	4.30 cfs @	14.82 hrs,	Volume=	2.357 af,	Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 5.63 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 4.85 fps, Avg. Travel Time= 0.3 min

Peak Storage= 69 cf @ 14.82 hrs, Average Depth at Peak Storage= 0.75'
Bank-Full Depth= 1.25', Capacity at Bank-Full= 6.46 cfs

15.0" Round Pipe
n= 0.013
Length= 90.0' Slope= 0.0100 '/'
Inlet Invert= 0.00', Outlet Invert= -0.90'



Summary for Pond 1P: wetlands on Gildick Parcel

Inflow Area =	68.850 ac,	1.60% Impervious,	Inflow Depth >	0.51"	for 2 YR event
Inflow =	24.63 cfs @	12.03 hrs,	Volume=	2.940 af	
Outflow =	0.00 cfs @	10.00 hrs,	Volume=	0.000 af,	Atten= 100%, Lag= 0.0 min
Primary =	0.00 cfs @	10.00 hrs,	Volume=	0.000 af	
Secondary =	0.00 cfs @	10.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Peak Elev= 1,105.52' @ 24.00 hrs Surf.Area= 2.532 ac Storage= 2.936 af

Plug-Flow detention time= (not calculated: initial storage excedes outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	1,103.40'	15.137 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,103.40	0.000	0.000	0.000
1,104.00	0.490	0.147	0.147
1,106.00	3.170	3.660	3.807
1,108.00	8.160	11.330	15.137

Device	Routing	Invert	Outlet Devices
#1	Secondary	1,107.30'	**50.0' long Broad-Crested Rectangular Weir**
			Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00
			Coef. (English) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
#2	Primary	1,106.20'	**80.0' long Broad-Crested Rectangular Weir**
			Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00
			Coef. (English) 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30

Primary OutFlow Max=0.00 cfs @ 10.00 hrs HW=1,103.40' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 10.00 hrs HW=1,103.40' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: wetland #2 on Gildick Parcel

Inflow Area =	155.300 ac,	1.15% Impervious,	Inflow Depth >	0.26"	for 2 YR event
Inflow =	13.20 cfs @	12.89 hrs,	Volume=	3.427 af	
Outflow =	4.30 cfs @	14.81 hrs,	Volume=	2.358 af,	Atten= 67%, Lag= 115.3 min
Primary =	4.30 cfs @	14.81 hrs,	Volume=	2.358 af	

Routing by Stor-Ind method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Peak Elev= 1,079.80' @ 14.81 hrs Surf.Area= 1.071 ac Storage= 1.370 af

Plug-Flow detention time= 232.4 min calculated for 2.358 af (69% of inflow)
Center-of-Mass det. time= 117.1 min (1,068.6 - 951.5)

Volume	Invert	Avail.Storage	Storage Description
#1	1,078.30'	14.236 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,078.30	0.710	0.000	0.000
1,080.00	1.120	1.556	1.556
1,082.00	2.000	3.120	4.676
1,084.00	2.380	4.380	9.056
1,086.00	2.800	5.180	14.236

Device	Routing	Invert	Outlet Devices
#1	Primary	1,079.00'	**36.0" Round Culvert** L= 1,000.0' Ke= 0.600 Outlet Invert= 1,029.00' S= 0.0500 '/' Cc= 0.900 n= 0.024
#2	Primary	1,084.00'	**2.0' long Broad-Crested Rectangular Weir** Head (feet) 0.50 1.00 1.50 2.00 Coef. (English) 2.79 2.93 3.06 3.30

Primary OutFlow Max=4.29 cfs @ 14.81 hrs HW=1,079.80' (Free Discharge)
├─**1=Culvert** (Inlet Controls 4.29 cfs @ 2.85 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=10.00-24.00 hrs, dt=0.10 hrs, 141 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Gildick Parcel middle Runoff Area=44.950 ac 0.00% Impervious Runoff Depth>1.22"
Flow Length=1,500' Tc=39.1 min CN=59 Runoff=33.82 cfs 4.564 af

Subcatchment 2S: north of site Runoff Area=314.160 ac 0.00% Impervious Runoff Depth>1.39"
Flow Length=5,678' Slope=0.0560 '/' Tc=92.2 min CN=62 Runoff=154.02 cfs 36.442 af

Subcatchment 3S: Rossini Parcel middle Runoff Area=56.440 ac 0.00% Impervious Runoff Depth>1.28"
Flow Length=2,340' Tc=40.4 min CN=60 Runoff=44.60 cfs 6.039 af

Subcatchment 4S: Rossini Parcel north Runoff Area=32.050 ac 0.00% Impervious Runoff Depth>1.28"
Flow Length=2,490' Tc=43.8 min CN=60 Runoff=24.00 cfs 3.425 af

Subcatchment 5S: Cooke Parcel east Runoff Area=59.130 ac 1.17% Impervious Runoff Depth>1.29"
Flow Length=1,229' Tc=26.4 min CN=60 Runoff=62.78 cfs 6.362 af

Subcatchment 6S: Rossini Parcel south Runoff Area=26.060 ac 0.00% Impervious Runoff Depth>1.22"
Flow Length=1,112' Tc=27.7 min CN=59 Runoff=25.09 cfs 2.658 af

Subcatchment 8S: Btwn Cooke/Rossini Runoff Area=86.450 ac 0.80% Impervious Runoff Depth>1.20"
Flow Length=4,136' Tc=69.7 min CN=59 Runoff=42.58 cfs 8.667 af

Subcatchment 9S: Gildick Parcel north Runoff Area=42.790 ac 2.57% Impervious Runoff Depth>1.30"
Flow Length=603' Slope=0.1990 '/' Tc=12.0 min CN=60 Runoff=71.33 cfs 4.629 af

Subcatchment 10S: Gildick Parcel south Runoff Area=47.190 ac 3.31% Impervious Runoff Depth>1.15"
Flow Length=2,639' Slope=0.0770 '/' Tc=42.5 min CN=58 Runoff=31.12 cfs 4.529 af

Subcatchment 11S: Gildick south to stream Runoff Area=30.240 ac 5.85% Impervious Runoff Depth>1.44"
Flow Length=3,172' Slope=0.1400 '/' Tc=10.9 min CN=62 Runoff=58.86 cfs 3.618 af

Subcatchment 12S: rte 17 east of exit 107 Runoff Area=45.420 ac 18.74% Impervious Runoff Depth>1.80"
Flow Length=3,174' Slope=0.1400 '/' Tc=10.9 min CN=67 Runoff=114.06 cfs 6.814 af

Reach 1R: Inflow=271.21 cfs 77.263 af
Outflow=271.21 cfs 77.263 af

Reach 2R: wetland 1 to stream Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=2,800.0' S=0.1400 '/' Capacity=1,973.89 cfs Outflow=0.00 cfs 0.000 af

Reach 3R: culvert under 161 to stream Avg. Depth=0.82' Max Vel=4.46 fps Inflow=44.60 cfs 6.039 af
n=0.050 L=3,715.0' S=0.0350 '/' Capacity=311.05 cfs Outflow=37.93 cfs 5.890 af

Reach 4R: culvert under 161 to stream Avg. Depth=0.54' Max Vel=3.85 fps Inflow=24.00 cfs 3.425 af
n=0.050 L=2,940.0' S=0.0430 '/' Capacity=344.77 cfs Outflow=21.27 cfs 3.346 af

Reach 5R: Cooke Parcel East to Neversink Avg. Depth=1.06' Max Vel=4.82 fps Inflow=62.78 cfs 6.362 af
n=0.050 L=2,775.0' S=0.0300 '/' Capacity=287.97 cfs Outflow=52.24 cfs 6.245 af

Reach 6R: culvert under 161 to wetland 1 Avg. Depth=0.39' Max Vel=6.33 fps Inflow=25.09 cfs 2.658 af
n=0.050 L=571.0' S=0.1750 '/' Capacity=695.54 cfs Outflow=24.42 cfs 2.650 af

Reach 12R: stream to neversink river Avg. Depth=0.78' Max Vel=4.96 fps Inflow=203.05 cfs 45.678 af
n=0.025 L=1,000.0' S=0.0100 '/' Capacity=1,865.25 cfs Outflow=202.00 cfs 45.422 af

Reach 14R: from existing pond to basins Avg. Depth=1.25' Max Vel=5.45 fps Inflow=19.14 cfs 9.322 af
15.0" Round Pipe n=0.013 L=90.0' S=0.0100 '/' Capacity=6.46 cfs Outflow=6.46 cfs 6.070 af

Pond 1P: wetlands on Gildick Parcel Peak Elev=1,106.26' Storage=5.269 af Inflow=80.66 cfs 7.279 af
Primary=3.78 cfs 2.116 af Secondary=0.00 cfs 0.000 af Outflow=3.78 cfs 2.116 af

Pond 2P: wetland #2 on Gildick Parcel Peak Elev=1,080.81' Storage=2.819 af Inflow=42.58 cfs 10.783 af
Outflow=19.14 cfs 9.322 af

Total Runoff Area = 784.880 ac Runoff Volume = 87.748 af Average Runoff Depth = 1.34"
98.18% Pervious = 770.560 ac 1.82% Impervious = 14.320 ac

Summary for Subcatchment 1S: Gildick Parcel middle

Runoff = 33.82 cfs @ 12.36 hrs, Volume= 4.564 af, Depth> 1.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	29.950	60	forest
*	15.000	56	field
	44.950	59	Weighted Average
	44.950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.1	100	0.0100	0.06		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
12.0	1,400	0.1500	1.94		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
39.1	1,500	Total			

Summary for Subcatchment 2S: north of site

Runoff = 154.02 cfs @ 13.10 hrs, Volume= 36.442 af, Depth> 1.39"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	198.130	60	forest
*	78.560	56	field
*	37.470	85	gravel pit
	314.160	62	Weighted Average
	314.160		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0560	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
78.6	5,578	0.0560	1.18		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
92.2	5,678	Total			

Summary for Subcatchment 3S: Rossini Parcel middle

Runoff = 44.60 cfs @ 12.38 hrs, Volume= 6.039 af, Depth> 1.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	49.870	60	FOREST
*	6.570	56	FIELD
	56.440	60	Weighted Average
	56.440		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
27.8	2,200	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	5.17	25.39	**Pipe Channel, Segment ID:** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.021
40.4	2,340	Total			

Summary for Subcatchment 4S: Rossini Parcel north

Runoff = 24.00 cfs @ 12.42 hrs, Volume= 3.425 af, Depth> 1.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	29.310	60	FOREST
*	2.740	56	FIELD
	32.050	60	Weighted Average
	32.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0645	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
30.8	2,350	0.0645	1.27		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
43.8	2,490	Total			

Summary for Subcatchment 5S: Cooke Parcel east

Runoff = 62.78 cfs @ 12.19 hrs, Volume= 6.362 af, Depth> 1.29"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	44.950	60	FOREST
*	13.490	56	FIELD
*	0.690	98	paved
	59.130	60	Weighted Average
	58.440		98.83% Pervious Area
	0.690		1.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	1,089	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
26.4	1,229	Total			

Summary for Subcatchment 6S: Rossini Parcel south

Runoff = 25.09 cfs @ 12.21 hrs, Volume= 2.658 af, Depth> 1.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	20.500	60	FOREST
*	5.560	56	FIELD
	26.060	59	Weighted Average
	26.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	972	0.0550	1.17		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.2	40	0.0100	3.95	8.61	**Pipe Channel, Segment ID:** 20.0" Round Area= 2.2 sf Perim= 5.2' r= 0.42' n= 0.021
27.7	1,112	Total			

Summary for Subcatchment 8S: Btwn Cooke/Rossini &near wetland-Gildick

Runoff = 42.58 cfs @ 12.79 hrs, Volume= 8.667 af, Depth> 1.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	58.770	60	forest
*	26.990	56	field
*	0.690	98	road
	86.450	59	Weighted Average
	85.760		99.20% Pervious Area
	0.690		0.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0430	0.11		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
43.4	2,700	0.0430	1.04		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	9.44	66.70	**Pipe Channel, Segment ID:** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013
11.1	1,296	0.1512	1.94		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
69.7	4,136	Total			

Summary for Subcatchment 9S: Gildick Parcel north

Runoff = 71.33 cfs @ 12.01 hrs, Volume= 4.629 af, Depth> 1.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	36.150	60	forest
*	5.540	56	field
*	1.100	98	road
	42.790	60	Weighted Average
	41.690		97.43% Pervious Area
	1.100		2.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	100	0.1990	0.20		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
3.8	503	0.1990	2.23		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
12.0	603	Total			

Summary for Subcatchment 10S: Gildick Parcel south

Runoff = 31.12 cfs @ 12.41 hrs, Volume= 4.529 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	11.490	60	forest
*	34.140	56	field
*	1.560	98	road
	47.190	58	Weighted Average
	45.630		96.69% Pervious Area
	1.560		3.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0770	0.14		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
30.5	2,539	0.0770	1.39		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
42.5	2,639	Total			

Summary for Subcatchment 11S: Gildick south to stream

[49] Hint: Tc<2dt may require smaller dt

Runoff = 58.86 cfs @ 11.99 hrs, Volume= 3.618 af, Depth> 1.44"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	28.470	60	grassed
*	1.770	98	road
	30.240	62	Weighted Average
	28.470		94.15% Pervious Area
	1.770		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	3,072	0.1400	34.17	922.71	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
10.9	3,172	Total			

Summary for Subcatchment 12S: rte 17 east of exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 114.06 cfs @ 11.99 hrs, Volume= 6.814 af, Depth> 1.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	36.910	60	grassed
*	8.510	98	paved road
	45.420	67	Weighted Average
	36.910		81.26% Pervious Area
	8.510		18.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	3,074	0.1400	34.17	922.71	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
10.9	3,174	Total			

Summary for Reach 1R:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 784.880 ac, 1.82% Impervious, Inflow Depth > 1.18" for 10 YR event
Inflow = 271.21 cfs @ 12.92 hrs, Volume= 77.263 af
Outflow = 271.21 cfs @ 12.92 hrs, Volume= 77.263 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs

Summary for Reach 2R: wetland 1 to stream

[65] Warning: Inlet elevation not specified

Inflow = 0.00 cfs @ 10.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 10.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 10.00 hrs, Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,973.89 cfs

30.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 33.00'
Length= 2,800.0' Slope= 0.1400 '/'
Inlet Invert= 0.00', Outlet Invert= -392.00'

Summary for Reach 3R: culvert under 161 to stream

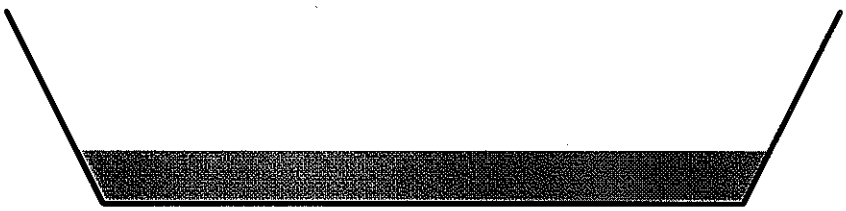
[65] Warning: Inlet elevation not specified

Inflow Area = 56.440 ac, 0.00% Impervious, Inflow Depth > 1.28" for 10 YR event
Inflow = 44.60 cfs @ 12.38 hrs, Volume= 6.039 af
Outflow = 37.93 cfs @ 12.79 hrs, Volume= 5.890 af, Atten= 15%, Lag= 24.8 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 4.46 fps, Min. Travel Time= 13.9 min
Avg. Velocity = 1.93 fps, Avg. Travel Time= 32.0 min

Peak Storage= 31,901 cf @ 12.55 hrs, Average Depth at Peak Storage= 0.82'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 311.05 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 3,715.0' Slope= 0.0350 '/'
Inlet Invert= 0.00', Outlet Invert= -130.03'



Summary for Reach 4R: culvert under 161 to stream

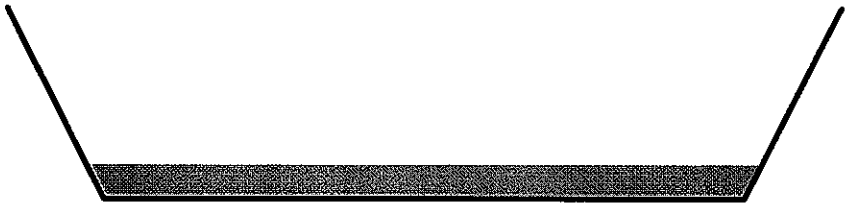
[65] Warning: Inlet elevation not specified

Inflow Area = 32.050 ac, 0.00% Impervious, Inflow Depth > 1.28" for 10 YR event
Inflow = 24.00 cfs @ 12.42 hrs, Volume= 3.425 af
Outflow = 21.27 cfs @ 12.80 hrs, Volume= 3.346 af, Atten= 11%, Lag= 22.7 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 3.85 fps, Min. Travel Time= 12.7 min
Avg. Velocity = 1.66 fps, Avg. Travel Time= 29.5 min

Peak Storage= 16,301 cf @ 12.59 hrs, Average Depth at Peak Storage= 0.54'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 344.77 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 2,940.0' Slope= 0.0430 '/'
Inlet Invert= 0.00', Outlet Invert= -126.42'



Summary for Reach 5R: Cooke Parcel East to Neversink River

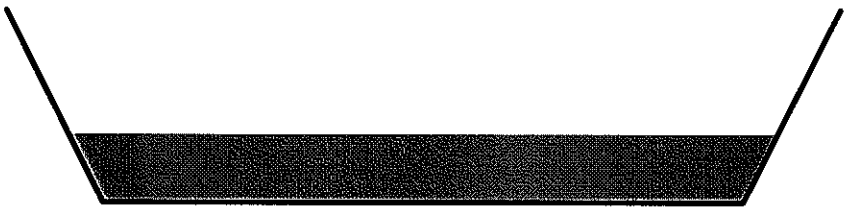
[65] Warning: Inlet elevation not specified

Inflow Area = 59.130 ac, 1.17% Impervious, Inflow Depth > 1.29" for 10 YR event
Inflow = 62.78 cfs @ 12.19 hrs, Volume= 6.362 af
Outflow = 52.24 cfs @ 12.48 hrs, Volume= 6.245 af, Atten= 17%, Lag= 17.3 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 4.82 fps, Min. Travel Time= 9.6 min
Avg. Velocity = 1.85 fps, Avg. Travel Time= 25.0 min

Peak Storage= 31,097 cf @ 12.31 hrs, Average Depth at Peak Storage= 1.06'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 287.97 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 2,775.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -83.25'



Summary for Reach 6R: culvert under 161 to wetland 1

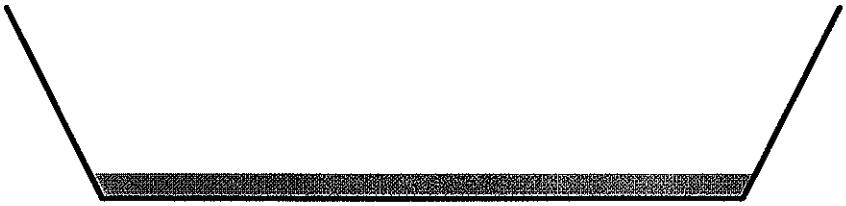
[65] Warning: Inlet elevation not specified

Inflow Area = 26.060 ac, 0.00% Impervious, Inflow Depth > 1.22" for 10 YR event
Inflow = 25.09 cfs @ 12.21 hrs, Volume= 2.658 af
Outflow = 24.42 cfs @ 12.25 hrs, Volume= 2.650 af, Atten= 3%, Lag= 2.4 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 6.33 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 2.31 fps, Avg. Travel Time= 4.1 min

Peak Storage= 2,263 cf @ 12.22 hrs, Average Depth at Peak Storage= 0.39'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 695.54 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 571.0' Slope= 0.1750 '/'
Inlet Invert= 0.00', Outlet Invert= -99.93'



Summary for Reach 12R: stream to neversink river

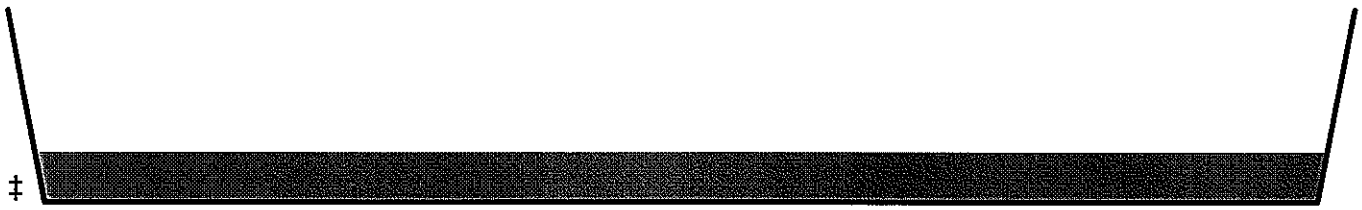
[65] Warning: Inlet elevation not specified

Inflow Area = 402.650 ac, 0.00% Impervious, Inflow Depth > 1.36" for 10 YR event
Inflow = 203.05 cfs @ 12.95 hrs, Volume= 45.678 af
Outflow = 202.00 cfs @ 13.05 hrs, Volume= 45.422 af, Atten= 1%, Lag= 5.8 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 4.96 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 2.39 fps, Avg. Travel Time= 7.0 min

Peak Storage= 40,923 cf @ 12.99 hrs, Average Depth at Peak Storage= 0.78'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,865.25 cfs

52.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 55.00'
Length= 1,000.0' Slope= 0.0100 '/'
Inlet Invert= 0.00', Outlet Invert= -10.00'



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Summary for Reach 14R: from existing pond to basins

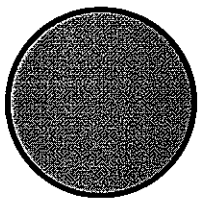
[52] Hint: Inlet/Outlet conditions not evaluated
[65] Warning: Inlet elevation not specified
[55] Hint: Peak inflow is 296% of Manning's capacity
[76] Warning: Detained 3.374 af (Pond w/culvert advised)

Inflow Area = 155.300 ac, 1.15% Impervious, Inflow Depth > 0.72" for 10 YR event
Inflow = 19.14 cfs @ 13.74 hrs, Volume= 9.322 af
Outflow = 6.46 cfs @ 12.90 hrs, Volume= 6.070 af, Atten= 66%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 5.45 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 5.22 fps, Avg. Travel Time= 0.3 min

Peak Storage= 110 cf @ 12.80 hrs, Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.25', Capacity at Bank-Full= 6.46 cfs

15.0" Round Pipe
n= 0.013
Length= 90.0' Slope= 0.0100 '/'
Inlet Invert= 0.00', Outlet Invert= -0.90'



Summary for Pond 1P: wetlands on Gildick Parcel

Inflow Area =	68.850 ac,	1.60% Impervious,	Inflow Depth >	1.27"	for 10 YR event
Inflow =	80.66 cfs @	12.02 hrs,	Volume=	7.279 af	
Outflow =	3.78 cfs @	17.31 hrs,	Volume=	2.116 af,	Atten= 95%, Lag= 317.1 min
Primary =	3.78 cfs @	17.31 hrs,	Volume=	2.116 af	
Secondary =	0.00 cfs @	10.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Peak Elev= 1,106.26' @ 17.31 hrs Surf.Area= 3.814 ac Storage= 5.269 af

Plug-Flow detention time= 442.8 min calculated for 2.101 af (29% of inflow)
Center-of-Mass det. time= 286.9 min (1,166.8 - 879.9)

Volume	Invert	Avail.Storage	Storage Description
#1	1,103.40'	15.137 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,103.40	0.000	0.000	0.000
1,104.00	0.490	0.147	0.147
1,106.00	3.170	3.660	3.807
1,108.00	8.160	11.330	15.137

Device	Routing	Invert	Outlet Devices
#1	Secondary	1,107.30'	**50.0' long Broad-Crested Rectangular Weir**
			Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00
			Coef. (English) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
#2	Primary	1,106.20'	**80.0' long Broad-Crested Rectangular Weir**
			Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00
			Coef. (English) 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30

Primary OutFlow Max=3.69 cfs @ 17.31 hrs HW=1,106.26' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 3.69 cfs @ 0.79 fps)

Secondary OutFlow Max=0.00 cfs @ 10.00 hrs HW=1,103.40' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: wetland #2 on Gildick Parcel

Inflow Area = 155.300 ac, 1.15% Impervious, Inflow Depth > 0.83" for 10 YR event
Inflow = 42.58 cfs @ 12.79 hrs, Volume= 10.783 af
Outflow = 19.14 cfs @ 13.74 hrs, Volume= 9.322 af, Atten= 55%, Lag= 57.1 min
Primary = 19.14 cfs @ 13.74 hrs, Volume= 9.322 af

Routing by Stor-Ind method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Peak Elev= 1,080.81' @ 13.74 hrs Surf.Area= 1.476 ac Storage= 2.819 af

Plug-Flow detention time= 126.4 min calculated for 9.256 af (86% of inflow)
Center-of-Mass det. time= 67.8 min (1,034.1 - 966.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,078.30'	14.236 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,078.30	0.710	0.000	0.000
1,080.00	1.120	1.556	1.556
1,082.00	2.000	3.120	4.676
1,084.00	2.380	4.380	9.056
1,086.00	2.800	5.180	14.236

Device	Routing	Invert	Outlet Devices
#1	Primary	1,079.00'	**36.0" Round Culvert** L= 1,000.0' Ke= 0.600 Outlet Invert= 1,029.00' S= 0.0500 '/' Cc= 0.900 n= 0.024
#2	Primary	1,084.00'	**2.0' long Broad-Crested Rectangular Weir** Head (feet) 0.50 1.00 1.50 2.00 Coef. (English) 2.79 2.93 3.06 3.30

Primary OutFlow Max=19.12 cfs @ 13.74 hrs HW=1,080.81' (Free Discharge)
├─**1=Culvert** (Inlet Controls 19.12 cfs @ 4.29 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=10.00-24.00 hrs, dt=0.10 hrs, 141 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Gildick Parcel middle Runoff Area=44.950 ac 0.00% Impervious Runoff Depth>3.19"
Flow Length=1,500' Tc=39.1 min CN=59 Runoff=101.09 cfs 11.947 af

Subcatchment 2S: north of site Runoff Area=314.160 ac 0.00% Impervious Runoff Depth>3.46"
Flow Length=5,678' Slope=0.0560 '/' Tc=92.2 min CN=62 Runoff=419.72 cfs 90.660 af

Subcatchment 3S: Rossini Parcel middle Runoff Area=56.440 ac 0.00% Impervious Runoff Depth>3.30"
Flow Length=2,340' Tc=40.4 min CN=60 Runoff=128.93 cfs 15.512 af

Subcatchment 4S: Rossini Parcel north Runoff Area=32.050 ac 0.00% Impervious Runoff Depth>3.29"
Flow Length=2,490' Tc=43.8 min CN=60 Runoff=69.02 cfs 8.799 af

Subcatchment 5S: Cooke Parcel east Runoff Area=59.130 ac 1.17% Impervious Runoff Depth>3.31"
Flow Length=1,229' Tc=26.4 min CN=60 Runoff=177.72 cfs 16.323 af

Subcatchment 6S: Rossini Parcel south Runoff Area=26.060 ac 0.00% Impervious Runoff Depth>3.20"
Flow Length=1,112' Tc=27.7 min CN=59 Runoff=73.49 cfs 6.951 af

Subcatchment 8S: Btwn Cooke/Rossini Runoff Area=86.450 ac 0.80% Impervious Runoff Depth>3.16"
Flow Length=4,136' Tc=69.7 min CN=59 Runoff=127.39 cfs 22.747 af

Subcatchment 9S: Gildick Parcel north Runoff Area=42.790 ac 2.57% Impervious Runoff Depth>3.33"
Flow Length=603' Slope=0.1990 '/' Tc=12.0 min CN=60 Runoff=195.29 cfs 11.863 af

Subcatchment 10S: Gildick Parcel south Runoff Area=47.190 ac 3.31% Impervious Runoff Depth>3.08"
Flow Length=2,639' Slope=0.0770 '/' Tc=42.5 min CN=58 Runoff=95.69 cfs 12.097 af

Subcatchment 11S: Gildick south to stream Runoff Area=30.240 ac 5.85% Impervious Runoff Depth>3.55"
Flow Length=3,172' Slope=0.1400 '/' Tc=10.9 min CN=62 Runoff=151.59 cfs 8.938 af

Subcatchment 12S: rte 17 east of exit 107 Runoff Area=45.420 ac 18.74% Impervious Runoff Depth>4.08"
Flow Length=3,174' Slope=0.1400 '/' Tc=10.9 min CN=67 Runoff=263.86 cfs 15.459 af

Reach 1R: Inflow=744.25 cfs 185.145 af
Outflow=744.25 cfs 185.145 af

Reach 2R: wetland 1 to stream Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=2,800.0' S=0.1400 '/' Capacity=1,973.89 cfs Outflow=0.00 cfs 0.000 af

Reach 3R: culvert under 161 to stream Avg. Depth=1.66' Max Vel=6.63 fps Inflow=128.93 cfs 15.512 af
n=0.050 L=3,715.0' S=0.0350 '/' Capacity=311.05 cfs Outflow=117.93 cfs 15.286 af

Reach 4R: culvert under 161 to stream Avg. Depth=1.07' Max Vel=5.80 fps Inflow=69.02 cfs 8.799 af
n=0.050 L=2,940.0' S=0.0430 '/' Capacity=344.77 cfs Outflow=64.87 cfs 8.681 af

Reach 5R: Cooke Parcel East to Avg. Depth=2.13' Max Vel=6.97 fps Inflow=177.72 cfs 16.323 af
n=0.050 L=2,775.0' S=0.0300 '/' Capacity=287.97 cfs Outflow=162.19 cfs 16.145 af

Reach 6R: culvert under 161 to wetland 1 Avg. Depth=0.75' Max Vel=9.48 fps Inflow=73.49 cfs 6.951 af
n=0.050 L=571.0' S=0.1750 '/' Capacity=695.54 cfs Outflow=72.41 cfs 6.939 af

Reach 12R: stream to neversink river Avg. Depth=1.42' Max Vel=7.29 fps Inflow=548.29 cfs 114.627 af
n=0.025 L=1,000.0' S=0.0100 '/' Capacity=1,865.25 cfs Outflow=545.97 cfs 114.245 af

Reach 14R: from existing pond to basins Avg. Depth=1.25' Max Vel=5.26 fps Inflow=74.93 cfs 34.147 af
15.0" Round Pipe n=0.013 L=90.0' S=0.0100 '/' Capacity=6.46 cfs Outflow=6.46 cfs 6.315 af

Pond 1P: wetlands on Gildick Parcel Peak Elev=1,106.63' Storage=7.387 af Inflow=233.75 cfs 18.802 af
Primary=74.98 cfs 13.485 af Secondary=0.00 cfs 0.000 af Outflow=74.98 cfs 13.485 af

Pond 2P: wetland #2 on Gildick Parcel Peak Elev=1,085.08' Storage=11.856 af Inflow=191.76 cfs 36.232 af
Outflow=74.93 cfs 34.147 af

Total Runoff Area = 784.880 ac Runoff Volume = 221.296 af Average Runoff Depth = 3.38"
98.18% Pervious = 770.560 ac 1.82% Impervious = 14.320 ac

Summary for Subcatchment 1S: Gildick Parcel middle

Runoff = 101.09 cfs @ 12.33 hrs, Volume= 11.947 af, Depth> 3.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	29.950	60	forest
*	15.000	56	field
	44.950	59	Weighted Average
	44.950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.1	100	0.0100	0.06		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
12.0	1,400	0.1500	1.94		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
39.1	1,500	Total			

Summary for Subcatchment 2S: north of site

Runoff = 419.72 cfs @ 13.03 hrs, Volume= 90.660 af, Depth> 3.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	198.130	60	forest
*	78.560	56	field
*	37.470	85	gravel pit
	314.160	62	Weighted Average
	314.160		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0560	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
78.6	5,578	0.0560	1.18		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
92.2	5,678	Total			

Summary for Subcatchment 3S: Rossini Parcel middle

Runoff = 128.93 cfs @ 12.34 hrs, Volume= 15.512 af, Depth> 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	49.870	60	FOREST
*	6.570	56	FIELD
	56.440	60	Weighted Average
	56.440		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
27.8	2,200	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	5.17	25.39	**Pipe Channel, Segment ID:** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.021
40.4	2,340	Total			

Summary for Subcatchment 4S: Rossini Parcel north

Runoff = 69.02 cfs @ 12.39 hrs, Volume= 8.799 af, Depth> 3.29"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	29.310	60	FOREST
*	2.740	56	FIELD
	32.050	60	Weighted Average
	32.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0645	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
30.8	2,350	0.0645	1.27		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
43.8	2,490	Total			

Summary for Subcatchment 5S: Cooke Parcel east

Runoff = 177.72 cfs @ 12.17 hrs, Volume= 16.323 af, Depth> 3.31"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	44.950	60	FOREST
*	13.490	56	FIELD
*	0.690	98	paved
	59.130	60	Weighted Average
	58.440		98.83% Pervious Area
	0.690		1.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	1,089	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
26.4	1,229	Total			

Summary for Subcatchment 6S: Rossini Parcel south

Runoff = 73.49 cfs @ 12.19 hrs, Volume= 6.951 af, Depth> 3.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	20.500	60	FOREST
*	5.560	56	FIELD
	26.060	59	Weighted Average
	26.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	972	0.0550	1.17		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.2	40	0.0100	3.95	8.61	**Pipe Channel, Segment ID:** 20.0" Round Area= 2.2 sf Perim= 5.2' r= 0.42' n= 0.021
27.7	1,112	Total			

Summary for Subcatchment 8S: Btwn Cooke/Rossini &near wetland-Gildick

Runoff = 127.39 cfs @ 12.73 hrs, Volume= 22.747 af, Depth> 3.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	58.770	60	forest
*	26.990	56	field
*	0.690	98	road
	86.450	59	Weighted Average
	85.760		99.20% Pervious Area
	0.690		0.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0430	0.11		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
43.4	2,700	0.0430	1.04		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	9.44	66.70	**Pipe Channel, Segment ID:** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013
11.1	1,296	0.1512	1.94		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
69.7	4,136	Total			

Summary for Subcatchment 9S: Gildick Parcel north

Runoff = 195.29 cfs @ 12.00 hrs, Volume= 11.863 af, Depth> 3.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	36.150	60	forest
*	5.540	56	field
*	1.100	98	road
	42.790	60	Weighted Average
	41.690		97.43% Pervious Area
	1.100		2.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	100	0.1990	0.20		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
3.8	503	0.1990	2.23		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
12.0	603	Total			

Summary for Subcatchment 10S: Gildick Parcel south

Runoff = 95.69 cfs @ 12.37 hrs, Volume= 12.097 af, Depth> 3.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	11.490	60	forest
*	34.140	56	field
*	1.560	98	road
	47.190	58	Weighted Average
	45.630		96.69% Pervious Area
	1.560		3.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0770	0.14		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
30.5	2,539	0.0770	1.39		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
42.5	2,639	Total			

Summary for Subcatchment 11S: Gildick south to stream

[49] Hint: Tc<2dt may require smaller dt

Runoff = 151.59 cfs @ 11.98 hrs, Volume= 8.938 af, Depth> 3.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	28.470	60	grassed
*	1.770	98	road
	30.240	62	Weighted Average
	28.470		94.15% Pervious Area
	1.770		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	3,072	0.1400	34.17	922.71	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
10.9	3,172	Total			

Summary for Subcatchment 12S: rte 17 east of exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 263.86 cfs @ 11.98 hrs, Volume= 15.459 af, Depth> 4.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	36.910	60	grassed
*	8.510	98	paved road
	45.420	67	Weighted Average
	36.910		81.26% Pervious Area
	8.510		18.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	3,074	0.1400	34.17	922.71	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
10.9	3,174	Total			

Summary for Reach 1R:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 784.880 ac, 1.82% Impervious, Inflow Depth > 2.83" for 100 YR event
Inflow = 744.25 cfs @ 12.69 hrs, Volume= 185.145 af
Outflow = 744.25 cfs @ 12.69 hrs, Volume= 185.145 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs

Summary for Reach 2R: wetland 1 to stream

[65] Warning: Inlet elevation not specified

Inflow = 0.00 cfs @ 10.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 10.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 10.00 hrs, Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,973.89 cfs

30.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 33.00'
Length= 2,800.0' Slope= 0.1400 '/'
Inlet Invert= 0.00', Outlet Invert= -392.00'

Summary for Reach 3R: culvert under 161 to stream

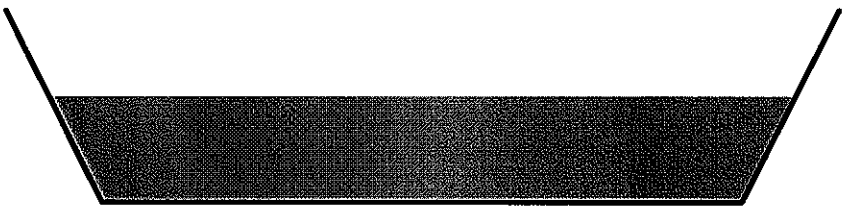
[65] Warning: Inlet elevation not specified

Inflow Area = 56.440 ac, 0.00% Impervious, Inflow Depth > 3.30" for 100 YR event
Inflow = 128.93 cfs @ 12.34 hrs, Volume= 15.512 af
Outflow = 117.93 cfs @ 12.62 hrs, Volume= 15.286 af, Atten= 9%, Lag= 16.8 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 6.63 fps, Min. Travel Time= 9.3 min
Avg. Velocity = 2.51 fps, Avg. Travel Time= 24.7 min

Peak Storage= 66,580 cf @ 12.46 hrs, Average Depth at Peak Storage= 1.66'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 311.05 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 3,715.0' Slope= 0.0350 '/'
Inlet Invert= 0.00', Outlet Invert= -130.03'



Summary for Reach 4R: culvert under 161 to stream

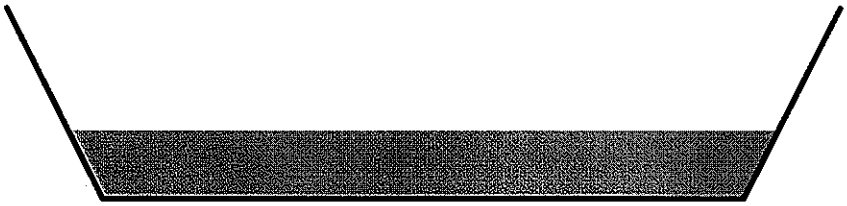
[65] Warning: Inlet elevation not specified

Inflow Area = 32.050 ac, 0.00% Impervious, Inflow Depth > 3.29" for 100 YR event
Inflow = 69.02 cfs @ 12.39 hrs, Volume= 8.799 af
Outflow = 64.87 cfs @ 12.64 hrs, Volume= 8.681 af, Atten= 6%, Lag= 14.9 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 5.80 fps, Min. Travel Time= 8.5 min
Avg. Velocity = 2.17 fps, Avg. Travel Time= 22.6 min

Peak Storage= 33,263 cf @ 12.49 hrs, Average Depth at Peak Storage= 1.07'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 344.77 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 2,940.0' Slope= 0.0430 '/'
Inlet Invert= 0.00', Outlet Invert= -126.42'



Summary for Reach 5R: Cooke Parcel East to Neversink River

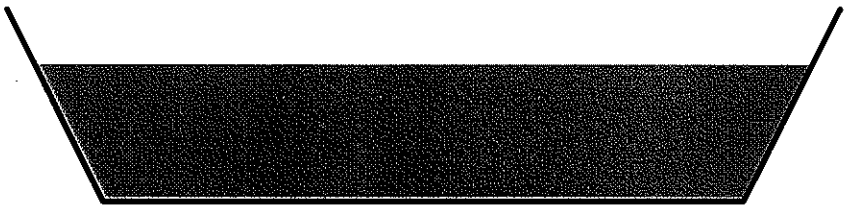
[65] Warning: Inlet elevation not specified

Inflow Area = 59.130 ac, 1.17% Impervious, Inflow Depth > 3.31" for 100 YR event
Inflow = 177.72 cfs @ 12.17 hrs, Volume= 16.323 af
Outflow = 162.19 cfs @ 12.36 hrs, Volume= 16.145 af, Atten= 9%, Lag= 11.6 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 6.97 fps, Min. Travel Time= 6.6 min
Avg. Velocity = 2.43 fps, Avg. Travel Time= 19.1 min

Peak Storage= 65,444 cf @ 12.25 hrs, Average Depth at Peak Storage= 2.13'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 287.97 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 2,775.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -83.25'



Summary for Reach 6R: culvert under 161 to wetland 1

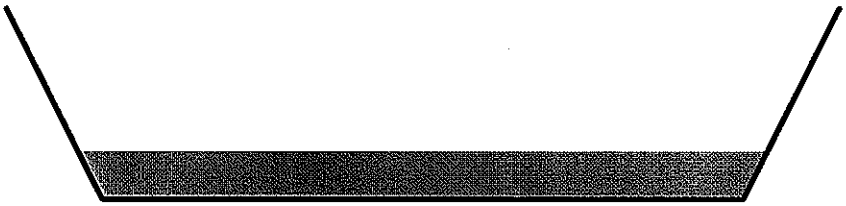
[65] Warning: Inlet elevation not specified

Inflow Area = 26.060 ac, 0.00% Impervious, Inflow Depth > 3.20" for 100 YR event
Inflow = 73.49 cfs @ 12.19 hrs, Volume= 6.951 af
Outflow = 72.41 cfs @ 12.21 hrs, Volume= 6.939 af, Atten= 1%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 9.48 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 3.07 fps, Avg. Travel Time= 3.1 min

Peak Storage= 4,438 cf @ 12.20 hrs, Average Depth at Peak Storage= 0.75'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 695.54 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 571.0' Slope= 0.1750 '/'
Inlet Invert= 0.00', Outlet Invert= -99.93'



Summary for Reach 12R: stream to neversink river

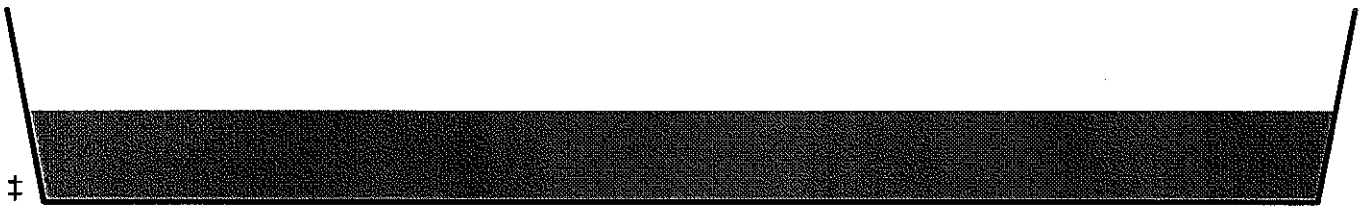
[65] Warning: Inlet elevation not specified

Inflow Area = 402.650 ac, 0.00% Impervious, Inflow Depth > 3.42" for 100 YR event
Inflow = 548.29 cfs @ 12.84 hrs, Volume= 114.627 af
Outflow = 545.97 cfs @ 12.91 hrs, Volume= 114.245 af, Atten= 0%, Lag= 4.3 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 7.29 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 3.18 fps, Avg. Travel Time= 5.2 min

Peak Storage= 75,021 cf @ 12.87 hrs, Average Depth at Peak Storage= 1.42'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,865.25 cfs

52.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 55.00'
Length= 1,000.0' Slope= 0.0100 '/'
Inlet Invert= 0.00', Outlet Invert= -10.00'



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Summary for Reach 14R: from existing pond to basins

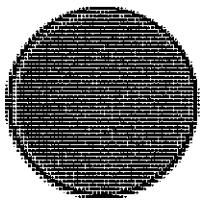
[52] Hint: Inlet/Outlet conditions not evaluated
[65] Warning: Inlet elevation not specified
[55] Hint: Peak inflow is 1160% of Manning's capacity
[76] Warning: Detained 27.827 af (Pond w/culvert advised)

Inflow Area = 155.300 ac, 1.15% Impervious, Inflow Depth > 2.64" for 100 YR event
Inflow = 74.93 cfs @ 13.70 hrs, Volume= 34.147 af
Outflow = 6.46 cfs @ 12.40 hrs, Volume= 6.315 af, Atten= 91%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Max. Velocity= 5.26 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 5.22 fps, Avg. Travel Time= 0.3 min

Peak Storage= 110 cf @ 12.30 hrs, Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.25', Capacity at Bank-Full= 6.46 cfs

15.0" Round Pipe
n= 0.013
Length= 90.0' Slope= 0.0100 '/'
Inlet Invert= 0.00', Outlet Invert= -0.90'



Summary for Pond 1P: wetlands on Gildick Parcel

[82] Warning: Early inflow requires earlier time span

Inflow Area =	68.850 ac,	1.60% Impervious,	Inflow Depth >	3.28"	for 100 YR event
Inflow =	233.75 cfs @	12.01 hrs,	Volume=	18.802 af	
Outflow =	74.98 cfs @	12.45 hrs,	Volume=	13.485 af,	Atten= 68%, Lag= 26.3 min
Primary =	74.98 cfs @	12.45 hrs,	Volume=	13.485 af	
Secondary =	0.00 cfs @	10.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Peak Elev= 1,106.63' @ 12.45 hrs Surf.Area= 4.747 ac Storage= 7.387 af

Plug-Flow detention time= 176.5 min calculated for 13.484 af (72% of inflow)
Center-of-Mass det. time= 72.7 min (922.9 - 850.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,103.40'	15.137 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,103.40	0.000	0.000	0.000
1,104.00	0.490	0.147	0.147
1,106.00	3.170	3.660	3.807
1,108.00	8.160	11.330	15.137

Device	Routing	Invert	Outlet Devices
#1	Secondary	1,107.30'	**50.0' long Broad-Crested Rectangular Weir**
			Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00
			Coef. (English) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
#2	Primary	1,106.20'	**80.0' long Broad-Crested Rectangular Weir**
			Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00

Coef. (English) 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30

Primary OutFlow Max=74.28 cfs @ 12.45 hrs HW=1,106.63' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 74.28 cfs @ 2.16 fps)

Secondary OutFlow Max=0.00 cfs @ 10.00 hrs HW=1,103.40' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: wetland #2 on Gildick Parcel

Inflow Area =	155.300 ac,	1.15% Impervious,	Inflow Depth >	2.80"	for 100 YR event
Inflow =	191.76 cfs @	12.63 hrs,	Volume=	36.232 af	
Outflow =	74.93 cfs @	13.70 hrs,	Volume=	34.147 af,	Atten= 61%, Lag= 64.2 min
Primary =	74.93 cfs @	13.70 hrs,	Volume=	34.147 af	

Routing by Stor-Ind method, Time Span= 10.00-24.00 hrs, dt= 0.10 hrs
Peak Elev= 1,085.08' @ 13.70 hrs Surf.Area= 2.607 ac Storage= 11.856 af

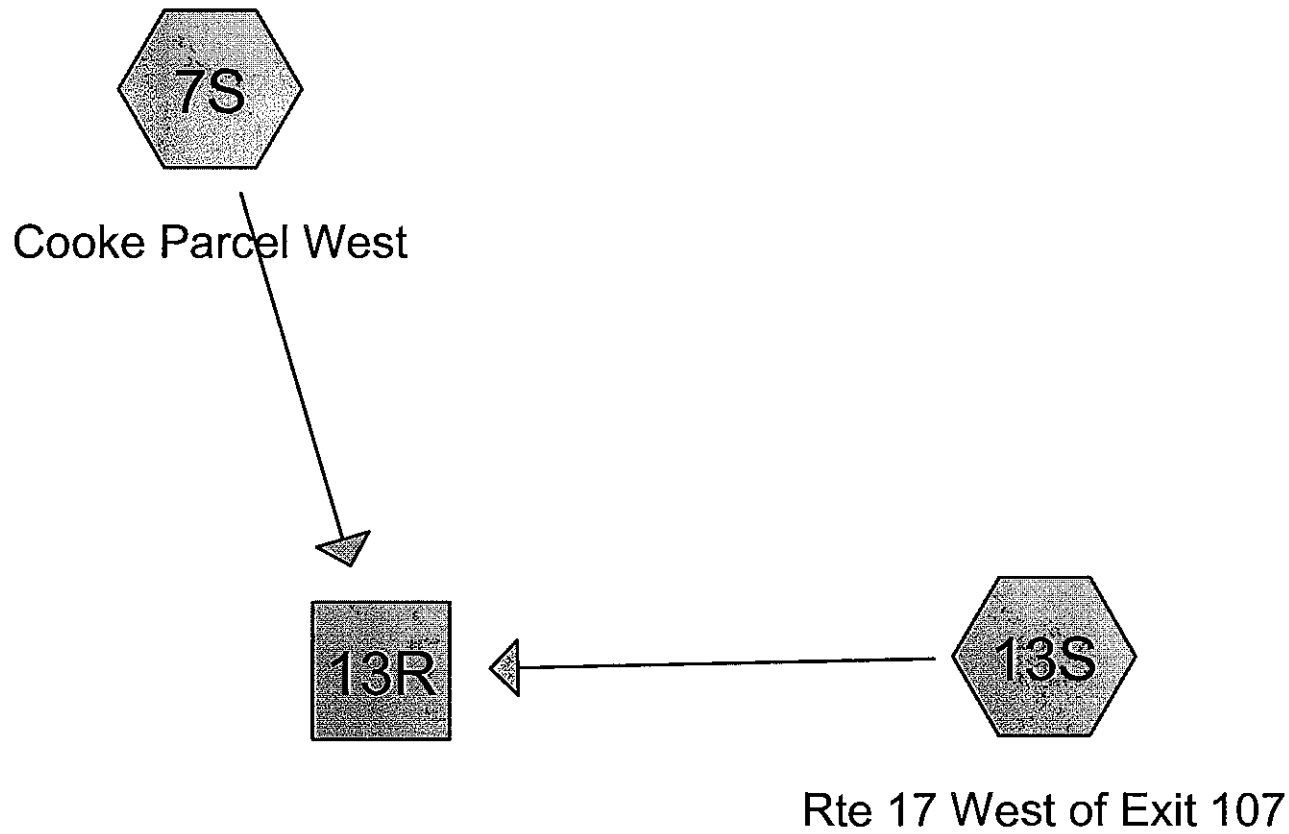
Plug-Flow detention time= 104.1 min calculated for 34.147 af (94% of inflow)
Center-of-Mass det. time= 75.1 min (976.8 - 901.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,078.30'	14.236 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,078.30	0.710	0.000	0.000
1,080.00	1.120	1.556	1.556
1,082.00	2.000	3.120	4.676
1,084.00	2.380	4.380	9.056
1,086.00	2.800	5.180	14.236

Device	Routing	Invert	Outlet Devices
#1	Primary	1,079.00'	**36.0" Round Culvert** L= 1,000.0' Ke= 0.600 Outlet Invert= 1,029.00' S= 0.0500 '/' Cc= 0.900 n= 0.024
#2	Primary	1,084.00'	**2.0' long Broad-Crested Rectangular Weir** Head (feet) 0.50 1.00 1.50 2.00 Coef. (English) 2.79 2.93 3.06 3.30

Primary OutFlow Max=74.92 cfs @ 13.70 hrs HW=1,085.08' (Free Discharge)
├─**1=Culvert** (Inlet Controls 68.29 cfs @ 9.66 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 6.63 cfs @ 3.07 fps)



Drainage Diagram for Trading Cove - Existing Conditions Reach 13
Prepared by Tetra Tech
HydroCAD® 9.00 s/n 00983 © 2009 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
322.330	60	Grassed (7S, 13S)
6.480	98	Paved Road (13S)
1.340	98	Road (7S)
330.150		**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Goup	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
330.150	Other	7S, 13S
330.150		**TOTAL AREA**

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 7S: Cooke Parcel West Runoff Area=300.850 ac 0.45% Impervious Runoff Depth=0.33"
Flow Length=3,723' Slope=0.0330 '/' Tc=83.3 min CN=60 Runoff=24.71 cfs 8.357 af

Subcatchment 13S: Rte 17 West of Exit Runoff Area=29.300 ac 22.12% Impervious Runoff Depth=0.63"
Tc=5.0 min CN=68 Runoff=30.34 cfs 1.530 af

Reach 13R: Inflow=30.37 cfs 9.887 af
Outflow=30.37 cfs 9.887 af

Total Runoff Area = 330.150 ac Runoff Volume = 9.887 af Average Runoff Depth = 0.36"
97.63% Pervious = 322.330 ac 2.37% Impervious = 7.820 ac

Summary for Subcatchment 7S: Cooke Parcel West

Runoff = 24.71 cfs @ 13.23 hrs, Volume= 8.357 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	299.510	60	Grassed
*	1.340	98	Road
	300.850	60	Weighted Average
	299.510		99.55% Pervious Area
	1.340		0.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0330	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.50"
66.5	3,623	0.0330	0.91		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
83.3	3,723	Total			

Summary for Subcatchment 13S: Rte 17 West of Exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 30.34 cfs @ 11.97 hrs, Volume= 1.530 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	22.820	60	Grassed
*	6.480	98	Paved Road
	29.300	68	Weighted Average
	22.820		77.88% Pervious Area
	6.480		22.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 13R:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 330.150 ac, 2.37% Impervious, Inflow Depth = 0.36" for 1 YR event
Inflow = 30.37 cfs @ 11.97 hrs, Volume= 9.887 af
Outflow = 30.37 cfs @ 11.97 hrs, Volume= 9.887 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 7S: Cooke Parcel West Runoff Area=300.850 ac 0.45% Impervious Runoff Depth=0.53"
Flow Length=3,723' Slope=0.0330 '/' Tc=83.3 min CN=60 Runoff=46.15 cfs 13.324 af

Subcatchment 13S: Rte 17 West of Exit Runoff Area=29.300 ac 22.12% Impervious Runoff Depth=0.90"
Tc=5.0 min CN=68 Runoff=45.60 cfs 2.201 af

Reach 13R: Inflow=49.08 cfs 15.524 af
Outflow=49.08 cfs 15.524 af

Total Runoff Area = 330.150 ac Runoff Volume = 15.524 af Average Runoff Depth = 0.56"
97.63% Pervious = 322.330 ac 2.37% Impervious = 7.820 ac

Summary for Subcatchment 7S: Cooke Parcel West

Runoff = 46.15 cfs @ 13.12 hrs, Volume= 13.324 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	299.510	60	Grassed
*	1.340	98	Road
	300.850	60	Weighted Average
	299.510		99.55% Pervious Area
	1.340		0.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0330	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.50"
66.5	3,623	0.0330	0.91		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
83.3	3,723	Total			

Summary for Subcatchment 13S: Rte 17 West of Exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 45.60 cfs @ 11.97 hrs, Volume= 2.201 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	22.820	60	Grassed
*	6.480	98	Paved Road
	29.300	68	Weighted Average
	22.820		77.88% Pervious Area
	6.480		22.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 13R:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 330.150 ac, 2.37% Impervious, Inflow Depth = 0.56" for 2 YR event
Inflow = 49.08 cfs @ 13.10 hrs, Volume= 15.524 af
Outflow = 49.08 cfs @ 13.10 hrs, Volume= 15.524 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 7S: Cooke Parcel West Runoff Area=300.850 ac 0.45% Impervious Runoff Depth=1.30"
Flow Length=3,723' Slope=0.0330 '/' Tc=83.3 min CN=60 Runoff=140.66 cfs 32.619 af

Subcatchment 13S: Rte 17 West of Exit Runoff Area=29.300 ac 22.12% Impervious Runoff Depth=1.88"
Tc=5.0 min CN=68 Runoff=98.93 cfs 4.589 af

Reach 13R: Inflow=146.41 cfs 37.208 af
Outflow=146.41 cfs 37.208 af

Total Runoff Area = 330.150 ac Runoff Volume = 37.208 af Average Runoff Depth = 1.35"
97.63% Pervious = 322.330 ac 2.37% Impervious = 7.820 ac

Summary for Subcatchment 7S: Cooke Parcel West

Runoff = 140.66 cfs @ 13.04 hrs, Volume= 32.619 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	299.510	60	Grassed
*	1.340	98	Road
	300.850	60	Weighted Average
	299.510		99.55% Pervious Area
	1.340		0.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0330	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.50"
66.5	3,623	0.0330	0.91		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
83.3	3,723	Total			

Summary for Subcatchment 13S: Rte 17 West of Exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 98.93 cfs @ 11.96 hrs, Volume= 4.589 af, Depth= 1.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	22.820	60	Grassed
*	6.480	98	Paved Road
	29.300	68	Weighted Average
	22.820		77.88% Pervious Area
	6.480		22.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 13R:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 330.150 ac, 2.37% Impervious, Inflow Depth = 1.35" for 10 YR event
Inflow = 146.41 cfs @ 13.04 hrs, Volume= 37.208 af
Outflow = 146.41 cfs @ 13.04 hrs, Volume= 37.208 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 7S: Cooke Parcel West Runoff Area=300.850 ac 0.45% Impervious Runoff Depth=3.33"
Flow Length=3,723' Slope=0.0330 '/' Tc=83.3 min CN=60 Runoff=403.62 cfs 83.569 af

Subcatchment 13S: Rte 17 West of Exit Runoff Area=29.300 ac 22.12% Impervious Runoff Depth=4.24"
Tc=5.0 min CN=68 Runoff=222.50 cfs 10.341 af

Reach 13R: Inflow=415.83 cfs 93.911 af
Outflow=415.83 cfs 93.911 af

Total Runoff Area = 330.150 ac Runoff Volume = 93.911 af Average Runoff Depth = 3.41"
97.63% Pervious = 322.330 ac 2.37% Impervious = 7.820 ac

Summary for Subcatchment 7S: Cooke Parcel West

Runoff = 403.62 cfs @ 12.97 hrs, Volume= 83.569 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	299.510	60	Grassed
*	1.340	98	Road
	300.850	60	Weighted Average
	299.510		99.55% Pervious Area
	1.340		0.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0330	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.50"
66.5	3,623	0.0330	0.91		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
83.3	3,723	Total			

Summary for Subcatchment 13S: Rte 17 West of Exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 222.50 cfs @ 11.96 hrs, Volume= 10.341 af, Depth= 4.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	22.820	60	Grassed
*	6.480	98	Paved Road
	29.300	68	Weighted Average
	22.820		77.88% Pervious Area
	6.480		22.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

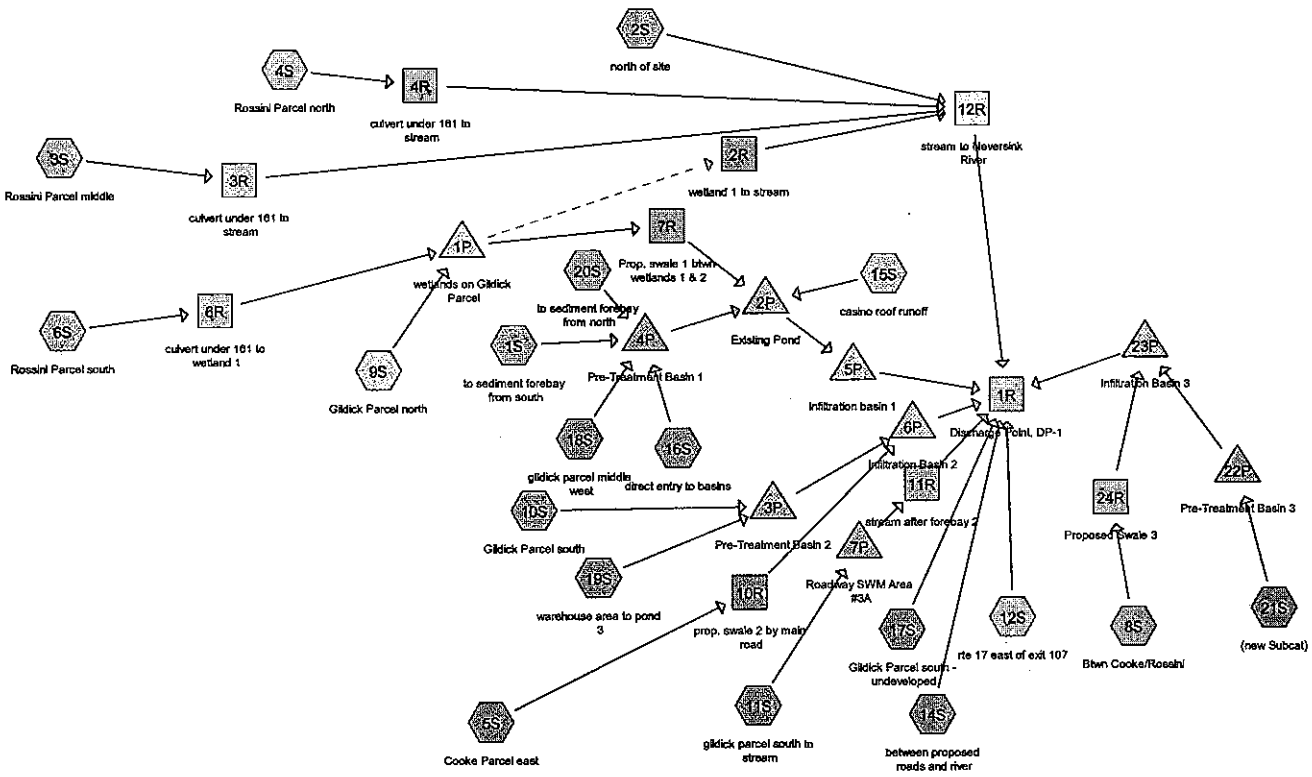
Summary for Reach 13R:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 330.150 ac, 2.37% Impervious, Inflow Depth = 3.41" for 100 YR event
Inflow = 415.83 cfs @ 12.96 hrs, Volume= 93.911 af
Outflow = 415.83 cfs @ 12.96 hrs, Volume= 93.911 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Proposed Conditions



Subcat Reach Pond Link

Drainage Diagram for Trading Cove - Proposed Conditions Reach 1
Prepared by Tetra Tech
HydroCAD® 9.00 s/n 00983 © 2009 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
28.360	56	FIELD (3S, 4S, 5S, 6S)
17.500	56	FOREST (17S)
102.390	56	field (2S, 8S, 9S)
144.630	60	FOREST (3S, 4S, 5S, 6S)
16.350	60	existing forest/field (1S)
18.380	60	existing undeveloped land (14S)
28.680	60	field (17S, 18S)
254.380	60	forest (2S, 8S, 9S)
64.620	60	grassed (11S, 12S)
5.150	60	landscaped (20S)
5.450	60	landscaped around basins (16S)
0.290	60	landscaping (10S)
37.470	85	gravel pit (2S)
5.000	98	(21S)
5.330	98	WQ basins (16S)
7.070	98	casino roof runoff (15S)
2.530	98	employee parking garage (1S)
0.400	98	hotel (20S)
0.840	98	infiltration basin 2 (17S)
2.290	98	parking garage by basins (20S)
6.940	98	parking garage by casino (20S)
2.630	98	parking lot (16S)
0.360	98	parking/road (19S)
9.270	98	paved road (12S)
16.460	98	road (1S, 5S, 8S, 9S, 10S, 11S, 20S)
0.520	98	sediment forebay 2 (19S)
0.890	98	storage area (20S)
0.700	98	warehouse (19S)
784.880		**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Goup	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
784.880	Other	1S, 2S, 3S, 4S, 5S, 6S, 8S, 9S, 10S, 11S, 12S, 14S, 15S, 16S, 17S, 18S, 19S, 20S, 21S
784.880		**TOTAL AREA**

Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: to sediment forebay Runoff Area=22.530 ac 27.43% Impervious Runoff Depth=0.71"
Flow Length=2,260' Tc=47.7 min CN=70 Runoff=8.41 cfs 1.341 af

Subcatchment 2S: north of site Runoff Area=313.270 ac 0.00% Impervious Runoff Depth=0.40"
Flow Length=5,678' Slope=0.0560 '/' Tc=92.2 min CN=62 Runoff=31.57 cfs 10.398 af

Subcatchment 3S: Rossini Parcel middle Runoff Area=56.440 ac 0.00% Impervious Runoff Depth=0.33"
Flow Length=2,340' Tc=40.4 min CN=60 Runoff=7.19 cfs 1.568 af

Subcatchment 4S: Rossini Parcel north Runoff Area=32.050 ac 0.00% Impervious Runoff Depth=0.33"
Flow Length=2,490' Tc=43.8 min CN=60 Runoff=3.89 cfs 0.890 af

Subcatchment 5S: Cooke Parcel east Runoff Area=59.130 ac 1.17% Impervious Runoff Depth=0.33"
Flow Length=1,229' Tc=26.4 min CN=60 Runoff=9.95 cfs 1.642 af

Subcatchment 6S: Rossini Parcel south Runoff Area=26.060 ac 0.00% Impervious Runoff Depth=0.30"
Flow Length=1,112' Tc=27.6 min CN=59 Runoff=3.52 cfs 0.658 af

Subcatchment 8S: Btwn Cooke/Rossini Runoff Area=41.800 ac 0.81% Impervious Runoff Depth=0.30"
Flow Length=2,572' Tc=54.3 min CN=59 Runoff=3.76 cfs 1.055 af

Subcatchment 9S: Gildick Parcel north Runoff Area=40.610 ac 2.71% Impervious Runoff Depth=0.33"
Flow Length=523' Slope=0.1990 '/' Tc=11.4 min CN=60 Runoff=11.36 cfs 1.128 af

Subcatchment 10S: Gildick Parcel south Runoff Area=2.900 ac 90.00% Impervious Runoff Depth=2.35"
Flow Length=2,774' Slope=0.0300 '/' Tc=5.0 min CN=94 Runoff=10.89 cfs 0.568 af

Subcatchment 11S: gildick parcel south to Runoff Area=30.240 ac 5.85% Impervious Runoff Depth=0.40"
Flow Length=2,467' Tc=11.2 min CN=62 Runoff=11.87 cfs 1.004 af

Subcatchment 12S: rte 17 east of exit 107 Runoff Area=45.420 ac 20.41% Impervious Runoff Depth=0.63"
Flow Length=3,174' Slope=0.1400 '/' Tc=10.9 min CN=68 Runoff=35.64 cfs 2.372 af

Subcatchment 14S: between proposed Runoff Area=18.380 ac 0.00% Impervious Runoff Depth=0.33"
Tc=5.0 min CN=60 Runoff=6.13 cfs 0.511 af

Subcatchment 15S: casino roof runoff Runoff Area=7.070 ac 100.00% Impervious Runoff Depth=2.77"
Tc=5.0 min CN=98 Runoff=28.94 cfs 1.631 af

Subcatchment 16S: direct entry to basins Runoff Area=13.410 ac 59.36% Impervious Runoff Depth=1.45"
Tc=5.0 min CN=83 Runoff=33.03 cfs 1.617 af

Subcatchment 17S: Gildick Parcel south - Runoff Area=33.980 ac 2.47% Impervious Runoff Depth=0.30"
Flow Length=2,689' Slope=0.0770 '/' Tc=43.1 min CN=59 Runoff=3.52 cfs 0.858 af

Subcatchment 18S: gildick parcel middle Runoff Area=13.040 ac 0.00% Impervious Runoff Depth=0.33"
Flow Length=975' Slope=0.1610 '/' Tc=11.4 min CN=60 Runoff=3.65 cfs 0.362 af

Subcatchment 19S: warehouse area to Runoff Area=1.580 ac 100.00% Impervious Runoff Depth=2.77"
Flow Length=489' Slope=0.0100 '/' Tc=5.0 min CN=98 Runoff=6.47 cfs 0.364 af

Subcatchment 20S: to sediment forebay Runoff Area=21.970 ac 76.56% Impervious Runoff Depth=1.90"
Flow Length=2,236' Slope=0.0190 '/' Tc=5.0 min CN=89 Runoff=69.85 cfs 3.478 af

Subcatchment 21S: (new Subcat) Runoff Area=5.000 ac 100.00% Impervious Runoff Depth=2.77"
Tc=5.0 min CN=98 Runoff=20.47 cfs 1.153 af

Reach 1R: Discharge Point, DP-1 Inflow=46.11 cfs 17.510 af
Outflow=46.11 cfs 17.510 af

Reach 2R: wetland 1 to stream Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=2,800.0' S=0.1400 '/' Capacity=1,973.89 cfs Outflow=0.00 cfs 0.000 af

Reach 3R: culvert under 161 to stream Avg. Depth=0.22' Max Vel=2.36 fps Inflow=7.19 cfs 1.568 af
n=0.050 L=3,715.0' S=0.0500 '/' Capacity=371.77 cfs Outflow=5.18 cfs 1.568 af

Reach 4R: culvert under 161 to stream Avg. Depth=0.16' Max Vel=1.78 fps Inflow=3.89 cfs 0.890 af
n=0.050 L=2,940.0' S=0.0430 '/' Capacity=344.77 cfs Outflow=2.84 cfs 0.890 af

Reach 6R: culvert under 161 to wetland 1 Avg. Depth=0.12' Max Vel=2.95 fps Inflow=3.52 cfs 0.658 af
n=0.050 L=571.0' S=0.1750 '/' Capacity=695.54 cfs Outflow=3.40 cfs 0.658 af

Reach 7R: Prop. swale 1 btwn wetlands 1 & 2 Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.025 L=325.0' S=0.0277 '/' Capacity=381.51 cfs Outflow=0.00 cfs 0.000 af

Reach 10R: prop. swale 2 by main road Avg. Depth=0.52' Max Vel=1.75 fps Inflow=9.95 cfs 1.642 af
n=0.025 L=1,175.0' S=0.0025 '/' Capacity=195.65 cfs Outflow=8.09 cfs 1.643 af

Reach 11R: stream after forebay 2 Avg. Depth=0.22' Max Vel=10.46 fps Inflow=6.39 cfs 0.914 af
n=0.015 L=560.0' S=0.1000 '/' Capacity=526.90 cfs Outflow=6.60 cfs 0.914 af

Reach 12R: stream to Neversink River Avg. Depth=0.29' Max Vel=2.59 fps Inflow=39.51 cfs 12.856 af
n=0.025 L=1,000.0' S=0.0100 '/' Capacity=1,865.25 cfs Outflow=39.30 cfs 12.856 af

Reach 24R: Proposed Swale 3 Avg. Depth=0.24' Max Vel=1.56 fps Inflow=3.76 cfs 1.055 af
n=0.025 L=1,975.0' S=0.0050 '/' Capacity=127.26 cfs Outflow=3.20 cfs 1.055 af

Pond 1P: wetlands on Gildick Parcel Peak Elev=1,104.90' Storage=1.786 af Inflow=11.63 cfs 1.786 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 2P: Existing Pond Peak Elev=1,080.85' Storage=8.330 af Inflow=95.76 cfs 8.258 af
24.0" Round Culvert n=0.013 L=34.0' S=0.0200 '/' Outflow=16.48 cfs 7.201 af

Pond 3P: Pre-Treatment Basin 2 Peak Elev=1,192.84' Storage=0.739 af Inflow=17.36 cfs 0.932 af
Outflow=0.61 cfs 0.926 af

Pond 4P: Pre-Treatment Basin 1 Peak Elev=1,081.32' Storage=1.076 af Inflow=104.24 cfs 6.798 af
Outflow=73.06 cfs 6.627 af

Pond 5P: infiltration basin 1 Peak Elev=1,080.19' Storage=5.508 af Inflow=16.48 cfs 7.201 af
Discarded=1.20 cfs 5.957 af Primary=0.00 cfs 0.000 af Outflow=1.20 cfs 5.957 af

Pond 6P: Infiltration Basin 2 Peak Elev=1,134.30' Storage=109,133 cf Inflow=8.69 cfs 2.569 af
Discarded=0.63 cfs 2.536 af Primary=0.00 cfs 0.000 af Outflow=0.63 cfs 2.536 af

Pond 7P: Roadway SWM Area #3A Peak Elev=1.79' Storage=6,949 cf Inflow=11.87 cfs 1.004 af
36.0" Round Culvert x 2.00 n=0.013 L=10.0' S=0.0100 '/' Outflow=6.39 cfs 0.914 af

Pond 22P: Pre-Treatment Basin 3 Peak Elev=1,208.40' Storage=33,852 cf Inflow=20.47 cfs 1.153 af
Outflow=0.68 cfs 1.041 af

Pond 23P: Infiltration Basin 3 Peak Elev=1,195.55' Storage=9,815 cf Inflow=3.88 cfs 2.096 af
Discarded=1.94 cfs 2.096 af Primary=0.00 cfs 0.000 af Outflow=1.94 cfs 2.096 af

Total Runoff Area = 784.880 ac Runoff Volume = 32.598 af Average Runoff Depth = 0.50"
92.20% Pervious = 723.650 ac 7.80% Impervious = 61.230 ac

Summary for Subcatchment 1S: to sediment forebay from south

Runoff = 8.41 cfs @ 12.49 hrs, Volume= 1.341 af, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	3.650	98	road
*	2.530	98	employee parking garage
*	16.350	60	existing forest/field
	22.530	70	Weighted Average
	16.350		72.57% Pervious Area
	6.180		27.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.1	100	0.0100	0.06		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
18.3	550	0.0100	0.50		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
2.3	1,610	0.0255	11.50	36.13	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
47.7	2,260	Total			

Summary for Subcatchment 2S: north of site

Runoff = 31.57 cfs @ 13.25 hrs, Volume= 10.398 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	197.240	60	forest
*	78.560	56	field
*	37.470	85	gravel pit
	313.270	62	Weighted Average
	313.270		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0560	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
78.6	5,578	0.0560	1.18		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
92.2	5,678	Total			

Summary for Subcatchment 3S: Rossini Parcel middle

Runoff = 7.19 cfs @ 12.47 hrs, Volume= 1.568 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	49.870	60	FOREST
*	6.570	56	FIELD
	56.440	60	Weighted Average
	56.440		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
27.8	2,200	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	9.44	66.70	**Pipe Channel, Segment ID:** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013
40.4	2,340	Total			

Summary for Subcatchment 4S: Rossini Parcel north

Runoff = 3.89 cfs @ 12.53 hrs, Volume= 0.890 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	29.310	60	FOREST
*	2.740	56	FIELD
	32.050	60	Weighted Average
	32.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0645	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
30.8	2,350	0.0645	1.27		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
43.8	2,490	Total			

Summary for Subcatchment 5S: Cooke Parcel east

Runoff = 9.95 cfs @ 12.25 hrs, Volume= 1.642 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	44.950	60	FOREST
*	13.490	56	FIELD
*	0.690	98	road
	59.130	60	Weighted Average
	58.440		98.83% Pervious Area
	0.690		1.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	1,089	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
26.4	1,229	Total			

Summary for Subcatchment 6S: Rossini Parcel south

Runoff = 3.52 cfs @ 12.28 hrs, Volume= 0.658 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	20.500	60	FOREST
*	5.560	56	FIELD
	26.060	59	Weighted Average
	26.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	972	0.0550	1.17		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
27.6	1,112	Total			

Summary for Subcatchment 8S: Btwn Cooke/Rossini

Runoff = 3.76 cfs @ 12.71 hrs, Volume= 1.055 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	23.170	60	forest
*	18.290	56	field
*	0.340	98	road
	41.800	59	Weighted Average
	41.460		99.19% Pervious Area
	0.340		0.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0430	0.11		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
39.1	2,432	0.0430	1.04		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	9.44	66.70	**Pipe Channel, Segment ID:** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013
54.3	2,572	Total			

Summary for Subcatchment 9S: Gildick Parcel north

[49] Hint: Tc<2dt may require smaller dt

Runoff = 11.36 cfs @ 12.03 hrs, Volume= 1.128 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	33.970	60	forest
*	5.540	56	field
*	1.100	98	road
	40.610	60	Weighted Average
	39.510		97.29% Pervious Area
	1.100		2.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	100	0.1990	0.20		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
3.2	423	0.1990	2.23		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
11.4	523	Total			

Summary for Subcatchment 10S: Gildick Parcel south

[49] Hint: Tc<2dt may require smaller dt

Runoff = 10.89 cfs @ 11.89 hrs, Volume= 0.568 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	2.610	98	road
*	0.290	60	landscaping
	2.900	94	Weighted Average
	0.290		10.00% Pervious Area
	2.610		90.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	2,774	0.0300	12.47	39.18	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
3.7	2,774	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment 11S: gildick parcel south to stream

[49] Hint: Tc<2dt may require smaller dt

Runoff = 11.87 cfs @ 12.02 hrs, Volume= 1.004 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	28.470	60	grassed
*	1.770	98	road
	30.240	62	Weighted Average
	28.470		94.15% Pervious Area
	1.770		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.8	2,367	0.0600	22.37	604.05	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
11.2	2,467	Total			

Summary for Subcatchment 12S: rte 17 east of exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 35.64 cfs @ 12.00 hrs, Volume= 2.372 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	36.150	60	grassed
*	9.270	98	paved road
	45.420	68	Weighted Average
	36.150		79.59% Pervious Area
	9.270		20.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	3,074	0.1400	34.17	922.71	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
10.9	3,174	Total			

Summary for Subcatchment 14S: between proposed roads and river

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.13 cfs @ 11.94 hrs, Volume= 0.511 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	18.380	60	existing undeveloped land
	18.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Segment ID:**

Summary for Subcatchment 15S: casino roof runoff

[49] Hint: Tc<2dt may require smaller dt

Runoff = 28.94 cfs @ 11.89 hrs, Volume= 1.631 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	7.070	98	casino roof runoff
	7.070		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Segment ID:**

Summary for Subcatchment 16S: direct entry to basins

[49] Hint: Tc<2dt may require smaller dt

Runoff = 33.03 cfs @ 11.90 hrs, Volume= 1.617 af, Depth= 1.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	2.630	98	parking lot
*	5.330	98	WQ basins
*	5.450	60	landscaped around basins
	13.410	83	Weighted Average
	5.450		40.64% Pervious Area
	7.960		59.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Segment ID:**

Summary for Subcatchment 17S: Gildick Parcel south - undeveloped

Runoff = 3.52 cfs @ 12.53 hrs, Volume= 0.858 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	15.640	60	field
*	17.500	56	FOREST
*	0.840	98	infiltration basin 2
	33.980	59	Weighted Average
	33.140		97.53% Pervious Area
	0.840		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0770	0.14		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
31.1	2,589	0.0770	1.39		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
43.1	2,689	Total			

Summary for Subcatchment 18S: gildick parcel middle west

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.65 cfs @ 12.03 hrs, Volume= 0.362 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	13.040	60	field
	13.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1610	0.41		**Sheet Flow, Segment ID:** Grass: Short n= 0.150 P2= 3.50"
7.3	875	0.1610	2.01		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
11.4	975	Total			

Summary for Subcatchment 19S: warehouse area to pond 3

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.47 cfs @ 11.89 hrs, Volume= 0.364 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	0.360	98	parking/road
*	0.700	98	warehouse
*	0.520	98	sediment forebay 2
	1.580	98	Weighted Average
	1.580		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0100	1.09		**Sheet Flow, Segment ID:** Smooth surfaces n= 0.011 P2= 3.50"
1.4	389	0.0100	4.54	3.56	**Pipe Channel, Segment ID:** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
2.9	489	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment 20S: to sediment forebay from north

[49] Hint: Tc<2dt may require smaller dt

Runoff = 69.85 cfs @ 11.90 hrs, Volume= 3.478 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	0.400	98	hotel
*	6.940	98	parking garage by casino
*	2.290	98	parking garage by basins
*	5.150	60	landscaped
*	6.300	98	road
*	0.890	98	storage area
	21.970	89	Weighted Average
	5.150		23.44% Pervious Area
	16.820		76.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0190	1.41		**Sheet Flow, Segment ID:** Smooth surfaces n= 0.011 P2= 3.50"
3.6	2,136	0.0190	9.93	31.18	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
4.8	2,236	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment 21S: (new Subcat)

[49] Hint: Tc<2dt may require smaller dt

Runoff = 20.47 cfs @ 11.89 hrs, Volume= 1.153 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	5.000	98	
	5.000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 1R: Discharge Point, DP-1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 784.880 ac, 7.80% Impervious, Inflow Depth = 0.27" for 1 YR event
Inflow = 46.11 cfs @ 13.42 hrs, Volume= 17.510 af
Outflow = 46.11 cfs @ 13.42 hrs, Volume= 17.510 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Summary for Reach 2R: wetland 1 to stream

[65] Warning: Inlet elevation not specified

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs, Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,973.89 cfs

30.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 33.00'
Length= 2,800.0' Slope= 0.1400 '/'
Inlet Invert= 0.00', Outlet Invert= -392.00'

Summary for Reach 3R: culvert under 161 to stream

[65] Warning: Inlet elevation not specified

Inflow Area = 56.440 ac, 0.00% Impervious, Inflow Depth = 0.33" for 1 YR event
Inflow = 7.19 cfs @ 12.47 hrs, Volume= 1.568 af
Outflow = 5.18 cfs @ 13.26 hrs, Volume= 1.568 af, Atten= 28%, Lag= 47.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.36 fps, Min. Travel Time= 26.2 min
Avg. Velocity = 0.99 fps, Avg. Travel Time= 62.7 min

Peak Storage= 8,220 cf @ 12.82 hrs, Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 371.77 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 3,715.0' Slope= 0.0500 '/'
Inlet Invert= 0.00', Outlet Invert= -185.75'

Summary for Reach 4R: culvert under 161 to stream

[65] Warning: Inlet elevation not specified

Inflow Area =	32.050 ac,	0.00% Impervious,	Inflow Depth =	0.33"	for 1 YR event
Inflow =	3.89 cfs @	12.53 hrs, Volume=	0.890 af		
Outflow =	2.84 cfs @	13.35 hrs, Volume=	0.890 af,	Atten= 27%,	Lag= 49.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 1.78 fps, Min. Travel Time= 27.5 min
Avg. Velocity = 0.83 fps, Avg. Travel Time= 58.9 min

Peak Storage= 4,705 cf @ 12.89 hrs, Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 344.77 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 2,940.0' Slope= 0.0430 '/'
Inlet Invert= 0.00', Outlet Invert= -126.42'

Summary for Reach 6R: culvert under 161 to wetland 1

[65] Warning: Inlet elevation not specified

Inflow Area = 26.060 ac, 0.00% Impervious, Inflow Depth = 0.30" for 1 YR event
Inflow = 3.52 cfs @ 12.28 hrs, Volume= 0.658 af
Outflow = 3.40 cfs @ 12.39 hrs, Volume= 0.658 af, Atten= 3%, Lag= 6.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.95 fps, Min. Travel Time= 3.2 min
Avg. Velocity = 1.43 fps, Avg. Travel Time= 6.6 min

Peak Storage= 679 cf @ 12.32 hrs, Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 695.54 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 571.0' Slope= 0.1750 '/'
Inlet Invert= 0.00', Outlet Invert= -99.93'

Summary for Reach 7R: Prop. swale 1 btwn wetlands 1 & 2

Inflow Area = 66.670 ac, 1.65% Impervious, Inflow Depth = 0.00" for 1 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs, Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 381.51 cfs

7.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 10.00'
Length= 325.0' Slope= 0.0277 '/'
Inlet Invert= 1,107.00', Outlet Invert= 1,098.00'

Summary for Reach 10R: prop. swale 2 by main road

Inflow Area = 59.130 ac, 1.17% Impervious, Inflow Depth = 0.33" for 1 YR event
Inflow = 9.95 cfs @ 12.25 hrs, Volume= 1.642 af
Outflow = 8.09 cfs @ 12.61 hrs, Volume= 1.643 af, Atten= 19%, Lag= 21.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 1.75 fps, Min. Travel Time= 11.2 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 30.9 min

Peak Storage= 5,478 cf @ 12.41 hrs, Average Depth at Peak Storage= 0.52'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 195.65 cfs

8.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 20.00'
Length= 1,175.0' Slope= 0.0025 '/'
Inlet Invert= 1,142.94', Outlet Invert= 1,140.00'

Summary for Reach 11R: stream after forebay 2

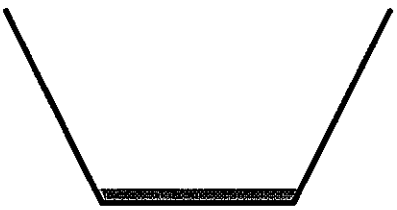
[65] Warning: Inlet elevation not specified
[88] Warning: Qout>Qin may require Finer Routing>1

Inflow Area = 30.240 ac, 5.85% Impervious, Inflow Depth = 0.36" for 1 YR event
Inflow = 6.39 cfs @ 12.20 hrs, Volume= 0.914 af
Outflow = 6.60 cfs @ 12.22 hrs, Volume= 0.914 af, Atten= 0%, Lag= 1.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 10.46 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 3.68 fps, Avg. Travel Time= 2.5 min

Peak Storage= 377 cf @ 12.21 hrs, Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 526.90 cfs

3.00' x 3.00' deep channel, n= 0.015
Side Slope Z-value= 0.5 '/' Top Width= 6.00'
Length= 560.0' Slope= 0.1000 '/'
Inlet Invert= 0.00', Outlet Invert= -56.00'



Summary for Reach 12R: stream to Neversink River

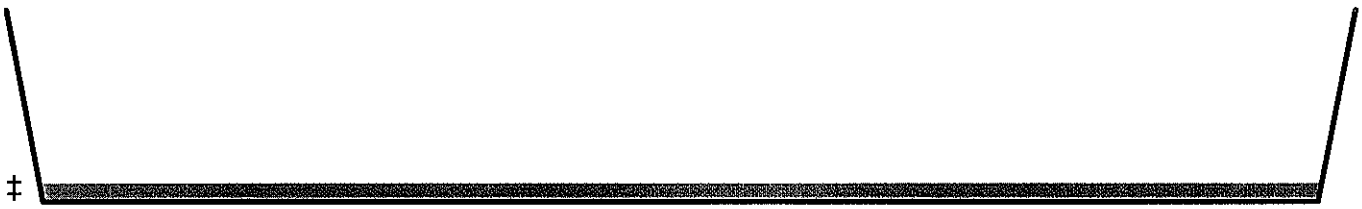
[65] Warning: Inlet elevation not specified

Inflow Area = 401.760 ac, 0.00% Impervious, Inflow Depth = 0.38" for 1 YR event
Inflow = 39.51 cfs @ 13.27 hrs, Volume= 12.856 af
Outflow = 39.30 cfs @ 13.45 hrs, Volume= 12.856 af, Atten= 1%, Lag= 10.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.59 fps, Min. Travel Time= 6.4 min
Avg. Velocity = 1.02 fps, Avg. Travel Time= 16.4 min

Peak Storage= 15,158 cf @ 13.34 hrs, Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,865.25 cfs

52.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 55.00'
Length= 1,000.0' Slope= 0.0100 '/'
Inlet Invert= 0.00', Outlet Invert= -10.00'



Summary for Reach 24R: Proposed Swale 3

Inflow Area = 41.800 ac, 0.81% Impervious, Inflow Depth = 0.30" for 1 YR event
Inflow = 3.76 cfs @ 12.71 hrs, Volume= 1.055 af
Outflow = 3.20 cfs @ 13.35 hrs, Volume= 1.055 af, Atten= 15%, Lag= 38.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 1.56 fps, Min. Travel Time= 21.1 min
Avg. Velocity = 0.61 fps, Avg. Travel Time= 53.8 min

Peak Storage= 4,067 cf @ 13.00 hrs, Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 127.26 cfs

8.00' x 2.00' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 1,975.0' Slope= 0.0050 '/'
Inlet Invert= 1,214.88', Outlet Invert= 1,205.00'

Summary for Pond 1P: wetlands on Gildick Parcel

Inflow Area =	66.670 ac,	1.65% Impervious,	Inflow Depth =	0.32"	for 1 YR event
Inflow =	11.63 cfs @	12.04 hrs,	Volume=	1.786 af	
Outflow =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af,	Atten= 100%, Lag= 0.0 min
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Peak Elev= 1,104.90' @ 27.70 hrs Surf.Area= 1.690 ac Storage= 1.786 af

Plug-Flow detention time= (not calculated: initial storage excedes outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	1,103.40'	15.137 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,103.40	0.000	0.000	0.000
1,104.00	0.490	0.147	0.147
1,106.00	3.170	3.660	3.807
1,108.00	8.160	11.330	15.137

Device	Routing	Invert	Outlet Devices
#1	Secondary	1,106.20'	**80.0' long Broad-Crested Rectangular Weir** Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00 Coef. (English) 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30
#2	Primary	1,107.30'	**50.0' long Broad-Crested Rectangular Weir** Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00 Coef. (English) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,103.40' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,103.40' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Existing Pond

[81] Warning: Exceeded Pond 4P by 1.43' @ 13.40 hrs

Inflow Area =	144.690 ac,	27.04% Impervious,	Inflow Depth =	0.68"	for 1 YR event
Inflow =	95.76 cfs @	11.94 hrs,	Volume=	8.258 af	
Outflow =	16.48 cfs @	12.82 hrs,	Volume=	7.201 af,	Atten= 83%, Lag= 52.9 min
Primary =	16.48 cfs @	12.82 hrs,	Volume=	7.201 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Starting Elev= 1,077.00' Surf.Area= 0.892 ac Storage= 4.900 af
Peak Elev= 1,080.85' @ 12.82 hrs Surf.Area= 1.504 ac Storage= 8.330 af (3.430 af above start)
Flood Elev= 1,090.00' Surf.Area= 3.970 ac Storage= 28.530 af (23.630 af above start)

Plug-Flow detention time= 643.0 min calculated for 2.298 af (28% of inflow)
Center-of-Mass det. time= 147.5 min (994.5 - 847.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,070.00'	28.530 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,070.00	0.220	0.000	0.000
1,080.00	1.180	7.000	7.000
1,082.00	1.940	3.120	10.120
1,084.00	2.810	4.750	14.870
1,086.00	3.440	6.250	21.120
1,088.00	3.970	7.410	28.530

Device	Routing	Invert	Outlet Devices
#1	Primary	1,078.50'	**24.0" Round Culvert** L= 34.0' Ke= 0.600 Outlet Invert= 1,077.82' S= 0.0200 '/' Cc= 0.900 n= 0.013

Primary OutFlow Max=16.49 cfs @ 12.82 hrs HW=1,080.85' (Free Discharge)
└**1=Culvert** (Inlet Controls 16.49 cfs @ 5.25 fps)

Summary for Pond 3P: Pre-Treatment Basin 2

Inflow Area = 4.480 ac, 93.53% Impervious, Inflow Depth = 2.50" for 1 YR event
Inflow = 17.36 cfs @ 11.89 hrs, Volume= 0.932 af
Outflow = 0.61 cfs @ 13.57 hrs, Volume= 0.926 af, Atten= 97%, Lag= 100.9 min
Primary = 0.61 cfs @ 13.57 hrs, Volume= 0.926 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 2
Starting Elev= 1,190.60' Surf.Area= 0.199 ac Storage= 0.156 af
Peak Elev= 1,192.84' @ 13.57 hrs Surf.Area= 0.271 ac Storage= 0.739 af (0.583 af above start)

Plug-Flow detention time= 752.0 min calculated for 0.770 af (83% of inflow)
Center-of-Mass det. time= 555.5 min (1,325.1 - 769.5)

Volume	Invert	Avail.Storage	Storage Description
#1	1,190.00'	3.622 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,190.00	0.180	0.000	0.000
1,195.00	0.340	1.300	1.300
1,200.40	0.520	2.322	3.622

Device	Routing	Invert	Outlet Devices
#1	Primary	1,190.50'	**12.0" Round Culvert** L= 352.0' Ke= 0.600 Outlet Invert= 1,136.29' S= 0.1540 '/' Cc= 0.900 n= 0.013
#2	Device 1	1,190.60'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	1,199.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600

Limited to weir flow at low heads

Primary OutFlow Max=0.61 cfs @ 13.57 hrs HW=1,192.84' (Free Discharge)
└─**1=Culvert** (Passes 0.61 cfs of 4.81 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.61 cfs @ 6.94 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 4P: Pre-Treatment Basin 1

Inflow Area =	70.950 ac, 43.64% Impervious, Inflow Depth = 1.15" for 1 YR event				
Inflow =	104.24 cfs @	11.90 hrs, Volume=	6.798 af		
Outflow =	73.06 cfs @	11.98 hrs, Volume=	6.627 af, Atten= 30%, Lag= 4.9 min		
Primary =	73.06 cfs @	11.98 hrs, Volume=	6.627 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,081.32' @ 11.98 hrs Surf.Area= 0.329 ac Storage= 1.076 af

Plug-Flow detention time= 44.8 min calculated for 6.617 af (97% of inflow)
Center-of-Mass det. time= 31.3 min (871.0 - 839.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,077.90'	3.885 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,077.90	0.000	0.000	0.000
1,078.00	0.240	0.012	0.012
1,084.00	0.400	1.920	1.932
1,088.20	0.530	1.953	3.885

Device	Routing	Invert	Outlet Devices
#1	Primary	1,078.50'	**36.0" Round Culvert X 2.00** L= 29.0' Ke= 0.600 Outlet Invert= 1,077.92' S= 0.0200 '/' Cc= 0.900 n= 0.013
#2	Primary	1,086.10'	**25.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=70.76 cfs @ 11.98 hrs HW=1,081.26' (Free Discharge)
└─**1=Culvert** (Barrel Controls 70.76 cfs @ 6.80 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: infiltration basin 1

[81] Warning: Exceeded Pond 2P by 1.32' @ 27.20 hrs

Inflow Area =	144.690 ac, 27.04% Impervious, Inflow Depth > 0.60" for 1 YR event				
Inflow =	16.48 cfs @	12.82 hrs, Volume=	7.201 af		
Outflow =	1.20 cfs @	12.10 hrs, Volume=	5.957 af, Atten= 93%, Lag= 0.0 min		
Discarded =	1.20 cfs @	12.10 hrs, Volume=	5.957 af		
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,080.19' @ 25.44 hrs Surf.Area= 0.935 ac Storage= 5.508 af

Plug-Flow detention time= 1,634.1 min calculated for 5.949 af (83% of inflow)
Center-of-Mass det. time= 1,526.5 min (2,521.0 - 994.5)

Volume	Invert	Avail.Storage	Storage Description
#1	1,074.00'	13.580 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,074.00	0.700	0.000	0.000
1,084.00	1.080	8.900	8.900
1,088.00	1.260	4.680	13.580

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,074.00'	**1.20 cfs Exfiltration when above 1,074.00'**
#2	Primary	1,080.25'	**24.0" Round Culvert** L= 153.0' Ke= 0.600
			Outlet Invert= 1,074.02' S= 0.0407 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=1.20 cfs @ 12.10 hrs HW=1,074.18' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 1.20 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,074.00' (Free Discharge)
└**2=Culvert** (Controls 0.00 cfs)

Summary for Pond 6P: Infiltration Basin 2

Inflow Area =	63.610 ac,	7.67% Impervious,	Inflow Depth >	0.48"	for 1 YR event
Inflow =	8.69 cfs @	12.61 hrs,	Volume=	2.569 af	
Outflow =	0.63 cfs @	25.04 hrs,	Volume=	2.536 af,	Atten= 93%, Lag= 745.9 min
Discarded =	0.63 cfs @	25.04 hrs,	Volume=	2.536 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Starting Elev= 1,131.80' Surf.Area= 24,618 sf Storage= 44,810 cf
Peak Elev= 1,134.30' @ 25.04 hrs Surf.Area= 28,111 sf Storage= 109,133 cf (64,323 cf above start)

Plug-Flow detention time= 2,026.9 min calculated for 1.507 af (59% of inflow)
Center-of-Mass det. time= 1,049.7 min (2,151.6 - 1,101.9)

Volume	Invert	Avail.Storage	Storage Description
#1	1,130.00'	292,856 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,130.00	22,128	0	0
1,134.00	27,661	99,578	99,578
1,140.00	36,765	193,278	292,856

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,130.00'	**4.560 in/hr Exfiltration over Surface area above 1,130.00'** Excluded Surface area = 22,128 sf
#2	Primary	1,130.00'	**36.0" Round Culvert X 2.00** L= 46.0' Ke= 0.600 Outlet Invert= 1,124.50' S= 0.1196 '/' Cc= 0.900 n= 0.013
#3	Primary	1,137.00'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#4	Device 2	1,135.50'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.63 cfs @ 25.04 hrs HW=1,134.30' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.63 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,131.80' (Free Discharge)
├─**2=Culvert** (Passes 0.00 cfs of 37.93 cfs potential flow)
│ └─**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 7P: Roadway SWM Area #3A

Inflow Area =	30.240 ac,	5.85% Impervious,	Inflow Depth =	0.40"	for 1 YR event
Inflow =	11.87 cfs @	12.02 hrs,	Volume=	1.004 af	
Outflow =	6.39 cfs @	12.20 hrs,	Volume=	0.914 af,	Atten= 46%, Lag= 10.7 min
Primary =	6.39 cfs @	12.20 hrs,	Volume=	0.914 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Peak Elev= 1.79' @ 12.20 hrs Surf.Area= 4,289 sf Storage= 6,949 cf

Plug-Flow detention time= 82.4 min calculated for 0.913 af (91% of inflow)
Center-of-Mass det. time= 39.3 min (957.6 - 918.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	29,932 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	3,387	0	0
2.00	4,398	7,785	7,785
4.00	5,511	9,909	17,694
6.00	6,727	12,238	29,932

Device	Routing	Invert	Outlet Devices
#1	Primary	1.00'	**36.0" Round Culvert X 2.00** L= 10.0' Ke= 0.600 Outlet Invert= 0.90' S= 0.0100 '/' Cc= 0.900 n= 0.013

Primary OutFlow Max=6.36 cfs @ 12.20 hrs HW=1.78' (Free Discharge)
└─**1=Culvert** (Barrel Controls 6.36 cfs @ 3.26 fps)

Summary for Pond 22P: Pre-Treatment Basin 3

Inflow Area = 5.000 ac,100.00% Impervious, Inflow Depth = 2.77" for 1 YR event
Inflow = 20.47 cfs @ 11.89 hrs, Volume= 1.153 af
Outflow = 0.68 cfs @ 13.61 hrs, Volume= 1.041 af, Atten= 97%, Lag= 103.2 min
Primary = 0.68 cfs @ 13.61 hrs, Volume= 1.041 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,208.40' @ 13.61 hrs Surf.Area= 12,338 sf Storage= 33,852 cf

Plug-Flow detention time= 629.8 min calculated for 1.040 af (90% of inflow)
Center-of-Mass det. time= 582.2 min (1,332.1 - 750.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,205.00'	148,931 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,205.00	7,689	0	0
1,207.00	10,290	17,979	17,979
1,209.00	13,210	23,500	41,479
1,211.00	16,177	29,387	70,866
1,213.00	19,460	35,637	106,503
1,215.00	22,968	42,428	148,931

Device	Routing	Invert	Outlet Devices
#1	Primary	1,205.50'	**24.0" Round Culvert** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 1,200.50' S= 0.0500 '/' Cc= 0.900 n= 0.013
#2	Device 1	1,205.60'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	1,214.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.68 cfs @ 13.61 hrs HW=1,208.40' (Free Discharge)
└─**1=Culvert** (Passes 0.68 cfs of 20.87 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.68 cfs @ 7.82 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 23P: Infiltration Basin 3

Inflow Area = 46.800 ac, 11.41% Impervious, Inflow Depth > 0.54" for 1 YR event
Inflow = 3.88 cfs @ 13.35 hrs, Volume= 2.096 af
Outflow = 1.94 cfs @ 15.41 hrs, Volume= 2.096 af, Atten= 50%, Lag= 123.7 min
Discarded = 1.94 cfs @ 15.41 hrs, Volume= 2.096 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,195.55' @ 15.41 hrs Surf.Area= 18,364 sf Storage= 9,815 cf

Plug-Flow detention time= 41.4 min calculated for 2.096 af (100% of inflow)
Center-of-Mass det. time= 41.4 min (1,222.6 - 1,181.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,195.00'	290,262 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,195.00	17,221	0	0
1,197.00	21,366	38,587	38,587
1,199.00	25,880	47,246	85,833
1,201.00	30,922	56,802	142,635
1,203.00	36,720	67,642	210,277
1,205.00	43,265	79,985	290,262

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,195.00'	**4.560 in/hr Exfiltration over Surface area**
#2	Primary	1,195.00'	**36.0" Round Culvert**
			L= 100.0' CPP, end-section conforming to fill, Ke= 0.500
			Outlet Invert= 1,185.00' S= 0.1000 '/' Cc= 0.900 n= 0.013
#3	Primary	1,203.25'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#4	Device 2	1,202.00'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=1.94 cfs @ 15.41 hrs HW=1,195.55' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 1.94 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,195.00' (Free Discharge)
├─**2=Culvert** (Controls 0.00 cfs)
│ └─**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: to sediment forebay Runoff Area=22.530 ac 27.43% Impervious Runoff Depth=1.01"
Flow Length=2,260' Tc=47.7 min CN=70 Runoff=12.68 cfs 1.893 af

Subcatchment 2S: north of site Runoff Area=313.270 ac 0.00% Impervious Runoff Depth=0.62"
Flow Length=5,678' Slope=0.0560 '/' Tc=92.2 min CN=62 Runoff=55.27 cfs 16.067 af

Subcatchment 3S: Rossini Parcel middle Runoff Area=56.440 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=2,340' Tc=40.4 min CN=60 Runoff=14.17 cfs 2.500 af

Subcatchment 4S: Rossini Parcel north Runoff Area=32.050 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=2,490' Tc=43.8 min CN=60 Runoff=7.60 cfs 1.419 af

Subcatchment 5S: Cooke Parcel east Runoff Area=59.130 ac 1.17% Impervious Runoff Depth=0.53"
Flow Length=1,229' Tc=26.4 min CN=60 Runoff=19.97 cfs 2.619 af

Subcatchment 6S: Rossini Parcel south Runoff Area=26.060 ac 0.00% Impervious Runoff Depth=0.49"
Flow Length=1,112' Tc=27.6 min CN=59 Runoff=7.51 cfs 1.067 af

Subcatchment 8S: Btwn Cooke/Rossini Runoff Area=41.800 ac 0.81% Impervious Runoff Depth=0.49"
Flow Length=2,572' Tc=54.3 min CN=59 Runoff=7.57 cfs 1.712 af

Subcatchment 9S: Gildick Parcel north Runoff Area=40.610 ac 2.71% Impervious Runoff Depth=0.53"
Flow Length=523' Slope=0.1990 '/' Tc=11.4 min CN=60 Runoff=22.97 cfs 1.799 af

Subcatchment 10S: Gildick Parcel south Runoff Area=2.900 ac 90.00% Impervious Runoff Depth=2.84"
Flow Length=2,774' Slope=0.0300 '/' Tc=5.0 min CN=94 Runoff=12.99 cfs 0.685 af

Subcatchment 11S: gildick parcel south to Runoff Area=30.240 ac 5.85% Impervious Runoff Depth=0.62"
Flow Length=2,467' Tc=11.2 min CN=62 Runoff=21.56 cfs 1.551 af

Subcatchment 12S: rte 17 east of exit 107 Runoff Area=45.420 ac 20.41% Impervious Runoff Depth=0.90"
Flow Length=3,174' Slope=0.1400 '/' Tc=10.9 min CN=68 Runoff=54.23 cfs 3.411 af

Subcatchment 14S: between proposed Runoff Area=18.380 ac 0.00% Impervious Runoff Depth=0.53"
Tc=5.0 min CN=60 Runoff=12.77 cfs 0.814 af

Subcatchment 15S: casino roof runoff Runoff Area=7.070 ac 100.00% Impervious Runoff Depth=3.27"
Tc=5.0 min CN=98 Runoff=33.88 cfs 1.924 af

Subcatchment 16S: direct entry to basins Runoff Area=13.410 ac 59.36% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=83 Runoff=42.33 cfs 2.077 af

Subcatchment 17S: Gildick Parcel south - Runoff Area=33.980 ac 2.47% Impervious Runoff Depth=0.49"
Flow Length=2,689' Slope=0.0770 '/' Tc=43.1 min CN=59 Runoff=7.19 cfs 1.392 af

Subcatchment 18S: gildick parcel middle Runoff Area=13.040 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=975' Slope=0.1610 '/' Tc=11.4 min CN=60 Runoff=7.37 cfs 0.578 af

Subcatchment 19S: warehouse area to Runoff Area=1.580 ac 100.00% Impervious Runoff Depth=3.27"
Flow Length=489' Slope=0.0100 '/' Tc=5.0 min CN=98 Runoff=7.57 cfs 0.430 af

Subcatchment 20S: to sediment forebay Runoff Area=21.970 ac 76.56% Impervious Runoff Depth=2.36"
Flow Length=2,236' Slope=0.0190 '/' Tc=5.0 min CN=89 Runoff=85.87 cfs 4.316 af

Subcatchment 21S: (new Subcat) Runoff Area=5.000 ac 100.00% Impervious Runoff Depth=3.27"
Tc=5.0 min CN=98 Runoff=23.96 cfs 1.361 af

Reach 1R: Discharge Point, DP-1 Inflow=82.01 cfs 29.094 af
Outflow=82.01 cfs 29.094 af

Reach 2R: wetland 1 to stream Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=2,800.0' S=0.1400 '/' Capacity=1,973.89 cfs Outflow=0.00 cfs 0.000 af

Reach 3R: culvert under 161 to stream Avg. Depth=0.35' Max Vel=3.15 fps Inflow=14.17 cfs 2.500 af
n=0.050 L=3,715.0' S=0.0500 '/' Capacity=371.77 cfs Outflow=11.00 cfs 2.500 af

Reach 4R: culvert under 161 to stream Avg. Depth=0.25' Max Vel=2.38 fps Inflow=7.60 cfs 1.419 af
n=0.050 L=2,940.0' S=0.0430 '/' Capacity=344.77 cfs Outflow=5.98 cfs 1.419 af

Reach 6R: culvert under 161 to wetland 1 Avg. Depth=0.18' Max Vel=3.95 fps Inflow=7.51 cfs 1.067 af
n=0.050 L=571.0' S=0.1750 '/' Capacity=695.54 cfs Outflow=7.24 cfs 1.067 af

Reach 7R: Prop. swale 1 btwn wetlands 1 & 2 Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.025 L=325.0' S=0.0277 '/' Capacity=381.51 cfs Outflow=0.00 cfs 0.000 af

Reach 10R: prop. swale 2 by main road Avg. Depth=0.80' Max Vel=2.25 fps Inflow=19.97 cfs 2.619 af
n=0.025 L=1,175.0' S=0.0025 '/' Capacity=195.65 cfs Outflow=16.78 cfs 2.619 af

Reach 11R: stream after forebay 2 Avg. Depth=0.37' Max Vel=14.16 fps Inflow=16.64 cfs 1.462 af
n=0.015 L=560.0' S=0.1000 '/' Capacity=526.90 cfs Outflow=15.87 cfs 1.462 af

Reach 12R: stream to Neversink River Avg. Depth=0.42' Max Vel=3.28 fps Inflow=71.42 cfs 19.986 af
n=0.025 L=1,000.0' S=0.0100 '/' Capacity=1,865.25 cfs Outflow=71.02 cfs 19.986 af

Reach 24R: Proposed Swale 3 Avg. Depth=0.38' Max Vel=2.05 fps Inflow=7.57 cfs 1.712 af
n=0.025 L=1,975.0' S=0.0050 '/' Capacity=127.26 cfs Outflow=6.73 cfs 1.712 af

Pond 1P: wetlands on Gildick Parcel Peak Elev=1,105.49' Storage=2.866 af Inflow=24.01 cfs 2.866 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 2P: Existing Pond Peak Elev=1,081.57' Storage=9.442 af Inflow=118.27 cfs 10.620 af
24.0" Round Culvert n=0.013 L=34.0' S=0.0200 '/' Outflow=20.38 cfs 9.563 af

Pond 3P: Pre-Treatment Basin 2 Peak Elev=1,193.31' Storage=0.861 af Inflow=20.56 cfs 1.115 af
Outflow=0.67 cfs 1.109 af

Pond 4P: Pre-Treatment Basin 1 Peak Elev=1,082.02' Storage=1.297 af Inflow=132.28 cfs 8.863 af
Outflow=90.75 cfs 8.695 af

Pond 5P: infiltration basin 1 Peak Elev=1,081.12' Storage=6.338 af Inflow=20.38 cfs 9.563 af
Discarded=1.20 cfs 5.965 af Primary=3.92 cfs 2.028 af Outflow=5.12 cfs 7.993 af

Pond 6P: Infiltration Basin 2 Peak Elev=1,135.50' Storage=147,764 cf Inflow=17.44 cfs 3.728 af
Discarded=0.82 cfs 3.303 af Primary=0.00 cfs 0.000 af Outflow=0.82 cfs 3.303 af

Pond 7P: Roadway SWM Area #3A Peak Elev=2.34' Storage=9,446 cf Inflow=21.56 cfs 1.551 af
36.0" Round Culvert x 2.00 n=0.013 L=10.0' S=0.0100 '/' Outflow=16.64 cfs 1.462 af

Pond 22P: Pre-Treatment Basin 3 Peak Elev=1,208.89' Storage=40,012 cf Inflow=23.96 cfs 1.361 af
Outflow=0.74 cfs 1.248 af

Pond 23P: Infiltration Basin 3 Peak Elev=1,196.45' Storage=27,195 cf Inflow=7.47 cfs 2.961 af
Discarded=2.14 cfs 2.960 af Primary=0.00 cfs 0.000 af Outflow=2.14 cfs 2.960 af

Total Runoff Area = 784.880 ac Runoff Volume = 47.615 af Average Runoff Depth = 0.73"
92.20% Pervious = 723.650 ac 7.80% Impervious = 61.230 ac

Summary for Subcatchment 1S: to sediment forebay from south

Runoff = 12.68 cfs @ 12.46 hrs, Volume= 1.893 af, Depth= 1.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	3.650	98	road
*	2.530	98	employee parking garage
*	16.350	60	existing forest/field
	22.530	70	Weighted Average
	16.350		72.57% Pervious Area
	6.180		27.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.1	100	0.0100	0.06		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
18.3	550	0.0100	0.50		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
2.3	1,610	0.0255	11.50	36.13	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
47.7	2,260	Total			

Summary for Subcatchment 2S: north of site

Runoff = 55.27 cfs @ 13.20 hrs, Volume= 16.067 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	197.240	60	forest
*	78.560	56	field
*	37.470	85	gravel pit
	313.270	62	Weighted Average
	313.270		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0560	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
78.6	5,578	0.0560	1.18		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
92.2	5,678	Total			

Summary for Subcatchment 3S: Rossini Parcel middle

Runoff = 14.17 cfs @ 12.43 hrs, Volume= 2.500 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	49.870	60	FOREST
*	6.570	56	FIELD
	56.440	60	Weighted Average
	56.440		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
27.8	2,200	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	9.44	66.70	**Pipe Channel, Segment ID:** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013
40.4	2,340	Total			

Summary for Subcatchment 4S: Rossini Parcel north

Runoff = 7.60 cfs @ 12.48 hrs, Volume= 1.419 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	29.310	60	FOREST
*	2.740	56	FIELD
	32.050	60	Weighted Average
	32.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0645	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
30.8	2,350	0.0645	1.27		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
43.8	2,490	Total			

Summary for Subcatchment 5S: Cooke Parcel east

Runoff = 19.97 cfs @ 12.22 hrs, Volume= 2.619 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	44.950	60	FOREST
*	13.490	56	FIELD
*	0.690	98	road
	59.130	60	Weighted Average
	58.440		98.83% Pervious Area
	0.690		1.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	1,089	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
26.4	1,229	Total			

Summary for Subcatchment 6S: Rossini Parcel south

Runoff = 7.51 cfs @ 12.24 hrs, Volume= 1.067 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	20.500	60	FOREST
*	5.560	56	FIELD
	26.060	59	Weighted Average
	26.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	972	0.0550	1.17		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
27.6	1,112	Total			

Summary for Subcatchment 8S: Btwn Cooke/Rossini

Runoff = 7.57 cfs @ 12.65 hrs, Volume= 1.712 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	23.170	60	forest
*	18.290	56	field
*	0.340	98	road
	41.800	59	Weighted Average
	41.460		99.19% Pervious Area
	0.340		0.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0430	0.11		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
39.1	2,432	0.0430	1.04		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	9.44	66.70	**Pipe Channel, Segment ID:** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013
54.3	2,572	Total			

Summary for Subcatchment 9S: Gildick Parcel north

[49] Hint: Tc<2dt may require smaller dt

Runoff = 22.97 cfs @ 12.02 hrs, Volume= 1.799 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	33.970	60	forest
*	5.540	56	field
*	1.100	98	road
	40.610	60	Weighted Average
	39.510		97.29% Pervious Area
	1.100		2.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	100	0.1990	0.20		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
3.2	423	0.1990	2.23		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
11.4	523	Total			

Summary for Subcatchment 10S: Gildick Parcel south

[49] Hint: Tc<2dt may require smaller dt

Runoff = 12.99 cfs @ 11.89 hrs, Volume= 0.685 af, Depth= 2.84"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	2.610	98	road
*	0.290	60	landscaping
	2.900	94	Weighted Average
	0.290		10.00% Pervious Area
	2.610		90.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	2,774	0.0300	12.47	39.18	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
3.7	2,774	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment 11S: gildick parcel south to stream

[49] Hint: Tc<2dt may require smaller dt

Runoff = 21.56 cfs @ 12.01 hrs, Volume= 1.551 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	28.470	60	grassed
*	1.770	98	road
	30.240	62	Weighted Average
	28.470		94.15% Pervious Area
	1.770		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.8	2,367	0.0600	22.37	604.05	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
11.2	2,467	Total			

Summary for Subcatchment 12S: rte 17 east of exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 54.23 cfs @ 12.00 hrs, Volume= 3.411 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	36.150	60	grassed
*	9.270	98	paved road
	45.420	68	Weighted Average
	36.150		79.59% Pervious Area
	9.270		20.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	3,074	0.1400	34.17	922.71	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
10.9	3,174	Total			

Summary for Subcatchment 14S: between proposed roads and river

[49] Hint: Tc<2dt may require smaller dt

Runoff = 12.77 cfs @ 11.92 hrs, Volume= 0.814 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	18.380	60	existing undeveloped land
	18.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Segment ID:**

Summary for Subcatchment 15S: casino roof runoff

[49] Hint: Tc<2dt may require smaller dt

Runoff = 33.88 cfs @ 11.89 hrs, Volume= 1.924 af, Depth= 3.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	7.070	98	casino roof runoff
	7.070		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Segment ID:**

Summary for Subcatchment 16S: direct entry to basins

[49] Hint: Tc<2dt may require smaller dt

Runoff = 42.33 cfs @ 11.90 hrs, Volume= 2.077 af, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	2.630	98	parking lot
*	5.330	98	WQ basins
*	5.450	60	landscaped around basins
	13.410	83	Weighted Average
	5.450		40.64% Pervious Area
	7.960		59.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Segment ID:**

Summary for Subcatchment 17S: Gildick Parcel south - undeveloped

Runoff = 7.19 cfs @ 12.48 hrs, Volume= 1.392 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	15.640	60	field
*	17.500	56	FOREST
*	0.840	98	infiltration basin 2
	33.980	59	Weighted Average
	33.140		97.53% Pervious Area
	0.840		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0770	0.14		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
31.1	2,589	0.0770	1.39		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
43.1	2,689	Total			

Summary for Subcatchment 18S: gildick parcel middle west

[49] Hint: Tc<2dt may require smaller dt

Runoff = 7.37 cfs @ 12.02 hrs, Volume= 0.578 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	13.040	60	field
	13.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1610	0.41		**Sheet Flow, Segment ID:** Grass: Short n= 0.150 P2= 3.50"
7.3	875	0.1610	2.01		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
11.4	975	Total			

Summary for Subcatchment 19S: warehouse area to pond 3

[49] Hint: Tc<2dt may require smaller dt

Runoff = 7.57 cfs @ 11.89 hrs, Volume= 0.430 af, Depth= 3.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	0.360	98	parking/road
*	0.700	98	warehouse
*	0.520	98	sediment forebay 2
	1.580	98	Weighted Average
	1.580		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0100	1.09		**Sheet Flow, Segment ID:** Smooth surfaces n= 0.011 P2= 3.50"
1.4	389	0.0100	4.54	3.56	**Pipe Channel, Segment ID:** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
2.9	489	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment 20S: to sediment forebay from north

[49] Hint: Tc<2dt may require smaller dt

Runoff = 85.87 cfs @ 11.89 hrs, Volume= 4.316 af, Depth= 2.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	0.400	98	hotel
*	6.940	98	parking garage by casino
*	2.290	98	parking garage by basins
*	5.150	60	landscaped
*	6.300	98	road
*	0.890	98	storage area
	21.970	89	Weighted Average
	5.150		23.44% Pervious Area
	16.820		76.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0190	1.41		**Sheet Flow, Segment ID:** Smooth surfaces n= 0.011 P2= 3.50"
3.6	2,136	0.0190	9.93	31.18	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
4.8	2,236	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment 21S: (new Subcat)

[49] Hint: Tc<2dt may require smaller dt

Runoff = 23.96 cfs @ 11.89 hrs, Volume= 1.361 af, Depth= 3.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	5.000	98	
	5.000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 1R: Discharge Point, DP-1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 784.880 ac, 7.80% Impervious, Inflow Depth = 0.44" for 2 YR event
Inflow = 82.01 cfs @ 13.24 hrs, Volume= 29.094 af
Outflow = 82.01 cfs @ 13.24 hrs, Volume= 29.094 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Summary for Reach 2R: wetland 1 to stream

[65] Warning: Inlet elevation not specified

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs, Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,973.89 cfs

30.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 33.00'
Length= 2,800.0' Slope= 0.1400 '/'
Inlet Invert= 0.00', Outlet Invert= -392.00'

Summary for Reach 3R: culvert under 161 to stream

[65] Warning: Inlet elevation not specified

Inflow Area = 56.440 ac, 0.00% Impervious, Inflow Depth = 0.53" for 2 YR event
Inflow = 14.17 cfs @ 12.43 hrs, Volume= 2.500 af
Outflow = 11.00 cfs @ 13.01 hrs, Volume= 2.500 af, Atten= 22%, Lag= 35.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 3.15 fps, Min. Travel Time= 19.7 min
Avg. Velocity = 1.10 fps, Avg. Travel Time= 56.1 min

Peak Storage= 13,050 cf @ 12.68 hrs, Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 371.77 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 3,715.0' Slope= 0.0500 '/'
Inlet Invert= 0.00', Outlet Invert= -185.75'

Summary for Reach 4R: culvert under 161 to stream

[65] Warning: Inlet elevation not specified

Inflow Area =	32.050 ac,	0.00% Impervious,	Inflow Depth =	0.53"	for 2 YR event
Inflow =	7.60 cfs @	12.48 hrs,	Volume=	1.419 af	
Outflow =	5.98 cfs @	13.09 hrs,	Volume=	1.419 af,	Atten= 21%, Lag= 36.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.38 fps, Min. Travel Time= 20.6 min
Avg. Velocity = 0.92 fps, Avg. Travel Time= 53.0 min

Peak Storage= 7,454 cf @ 12.74 hrs, Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 344.77 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 2,940.0' Slope= 0.0430 '/'
Inlet Invert= 0.00', Outlet Invert= -126.42'

Summary for Reach 6R: culvert under 161 to wetland 1

[65] Warning: Inlet elevation not specified

Inflow Area = 26.060 ac, 0.00% Impervious, Inflow Depth = 0.49" for 2 YR event
Inflow = 7.51 cfs @ 12.24 hrs, Volume= 1.067 af
Outflow = 7.24 cfs @ 12.32 hrs, Volume= 1.067 af, Atten= 4%, Lag= 4.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 3.95 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 1.66 fps, Avg. Travel Time= 5.8 min

Peak Storage= 1,066 cf @ 12.28 hrs, Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 695.54 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 571.0' Slope= 0.1750 '/'
Inlet Invert= 0.00', Outlet Invert= -99.93'

Summary for Reach 7R: Prop. swale 1 btwn wetlands 1 & 2

Inflow Area = 66.670 ac, 1.65% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs, Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 381.51 cfs

7.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 10.00'
Length= 325.0' Slope= 0.0277 '/'
Inlet Invert= 1,107.00', Outlet Invert= 1,098.00'

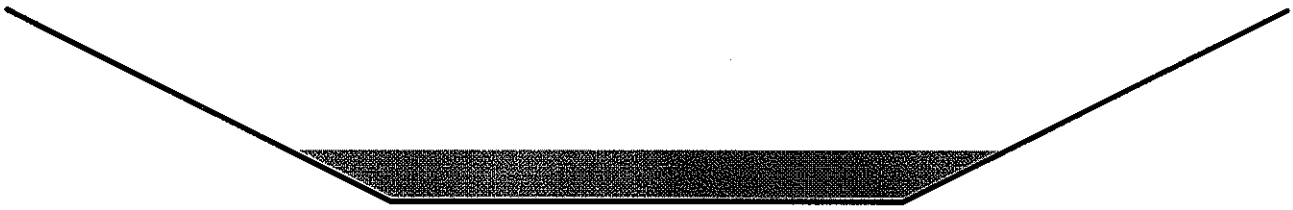
Summary for Reach 10R: prop. swale 2 by main road

Inflow Area = 59.130 ac, 1.17% Impervious, Inflow Depth = 0.53" for 2 YR event
Inflow = 19.97 cfs @ 12.22 hrs, Volume= 2.619 af
Outflow = 16.78 cfs @ 12.50 hrs, Volume= 2.619 af, Atten= 16%, Lag= 16.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.25 fps, Min. Travel Time= 8.7 min
Avg. Velocity = 0.72 fps, Avg. Travel Time= 27.3 min

Peak Storage= 9,032 cf @ 12.34 hrs, Average Depth at Peak Storage= 0.80'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 195.65 cfs

8.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 20.00'
Length= 1,175.0' Slope= 0.0025 '/'
Inlet Invert= 1,142.94', Outlet Invert= 1,140.00'



Summary for Reach 11R: stream after forebay 2

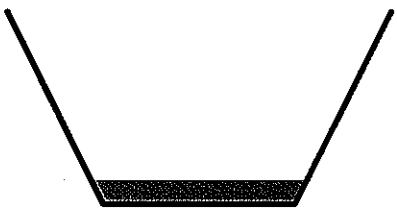
[65] Warning: Inlet elevation not specified

Inflow Area = 30.240 ac, 5.85% Impervious, Inflow Depth = 0.58" for 2 YR event
Inflow = 16.64 cfs @ 12.12 hrs, Volume= 1.462 af
Outflow = 15.87 cfs @ 12.13 hrs, Volume= 1.462 af, Atten= 5%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 14.16 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 3.98 fps, Avg. Travel Time= 2.3 min

Peak Storage= 664 cf @ 12.13 hrs, Average Depth at Peak Storage= 0.37'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 526.90 cfs

3.00' x 3.00' deep channel, n= 0.015
Side Slope Z-value= 0.5 '/' Top Width= 6.00'
Length= 560.0' Slope= 0.1000 '/'
Inlet Invert= 0.00', Outlet Invert= -56.00'



Summary for Reach 12R: stream to Neversink River

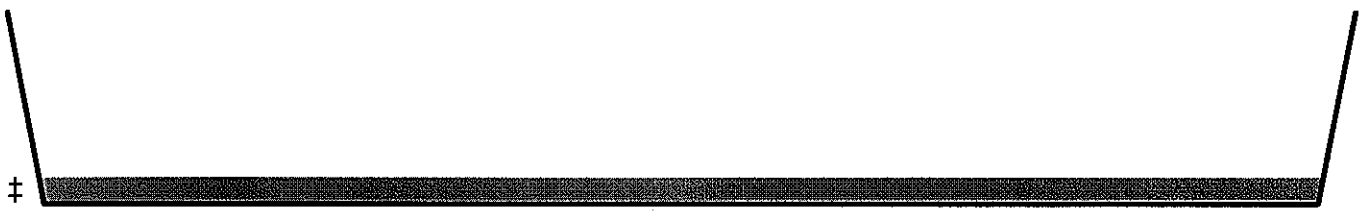
[65] Warning: Inlet elevation not specified

Inflow Area = 401.760 ac, 0.00% Impervious, Inflow Depth = 0.60" for 2 YR event
Inflow = 71.42 cfs @ 13.13 hrs, Volume= 19.986 af
Outflow = 71.02 cfs @ 13.28 hrs, Volume= 19.986 af, Atten= 1%, Lag= 8.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 3.28 fps, Min. Travel Time= 5.1 min
Avg. Velocity = 1.14 fps, Avg. Travel Time= 14.6 min

Peak Storage= 21,689 cf @ 13.19 hrs, Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,865.25 cfs

52.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 55.00'
Length= 1,000.0' Slope= 0.0100 '/'
Inlet Invert= 0.00', Outlet Invert= -10.00'



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Summary for Reach 24R: Proposed Swale 3

Inflow Area = 41.800 ac, 0.81% Impervious, Inflow Depth = 0.49" for 2 YR event
Inflow = 7.57 cfs @ 12.65 hrs, Volume= 1.712 af
Outflow = 6.73 cfs @ 13.13 hrs, Volume= 1.712 af, Atten= 11%, Lag= 29.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 2.05 fps, Min. Travel Time= 16.1 min
Avg. Velocity = 0.69 fps, Avg. Travel Time= 47.7 min

Peak Storage= 6,509 cf @ 12.86 hrs, Average Depth at Peak Storage= 0.38'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 127.26 cfs

8.00' x 2.00' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 1,975.0' Slope= 0.0050 '/'
Inlet Invert= 1,214.88', Outlet Invert= 1,205.00'

‡

Summary for Pond 1P: wetlands on Gildick Parcel

Inflow Area =	66.670 ac,	1.65% Impervious,	Inflow Depth =	0.52"	for 2 YR event
Inflow =	24.01 cfs @	12.03 hrs,	Volume=	2.866 af	
Outflow =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af,	Atten= 100%, Lag= 0.0 min
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Peak Elev= 1,105.49' @ 28.10 hrs Surf.Area= 2.481 ac Storage= 2.866 af

Plug-Flow detention time= (not calculated: initial storage excedes outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	1,103.40'	15.137 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,103.40	0.000	0.000	0.000
1,104.00	0.490	0.147	0.147
1,106.00	3.170	3.660	3.807
1,108.00	8.160	11.330	15.137

Device	Routing	Invert	Outlet Devices
#1	Secondary	1,106.20'	**80.0' long Broad-Crested Rectangular Weir** Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00 Coef. (English) 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30
#2	Primary	1,107.30'	**50.0' long Broad-Crested Rectangular Weir** Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00 Coef. (English) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,103.40' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,103.40' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Existing Pond

[81] Warning: Exceeded Pond 4P by 2.02' @ 13.40 hrs

Inflow Area =	144.690 ac,	27.04% Impervious,	Inflow Depth =	0.88"	for 2 YR event
Inflow =	118.27 cfs @	11.94 hrs,	Volume=	10.620 af	
Outflow =	20.38 cfs @	12.88 hrs,	Volume=	9.563 af,	Atten= 83%, Lag= 56.7 min
Primary =	20.38 cfs @	12.88 hrs,	Volume=	9.563 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Starting Elev= 1,077.00' Surf.Area= 0.892 ac Storage= 4.900 af
Peak Elev= 1,081.57' @ 12.88 hrs Surf.Area= 1.775 ac Storage= 9.442 af (4.542 af above start)
Flood Elev= 1,090.00' Surf.Area= 3.970 ac Storage= 28.530 af (23.630 af above start)

Plug-Flow detention time= 472.1 min calculated for 4.657 af (44% of inflow)
Center-of-Mass det. time= 143.8 min (984.8 - 841.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,070.00'	28.530 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,070.00	0.220	0.000	0.000
1,080.00	1.180	7.000	7.000
1,082.00	1.940	3.120	10.120
1,084.00	2.810	4.750	14.870
1,086.00	3.440	6.250	21.120
1,088.00	3.970	7.410	28.530

Device	Routing	Invert	Outlet Devices
#1	Primary	1,078.50'	**24.0" Round Culvert** L= 34.0' Ke= 0.600 Outlet Invert= 1,077.82' S= 0.0200 '/' Cc= 0.900 n= 0.013

Primary OutFlow Max=20.38 cfs @ 12.88 hrs HW=1,081.56' (Free Discharge)
└**1=Culvert** (Inlet Controls 20.38 cfs @ 6.49 fps)

Summary for Pond 3P: Pre-Treatment Basin 2

Inflow Area = 4.480 ac, 93.53% Impervious, Inflow Depth = 2.99" for 2 YR event
Inflow = 20.56 cfs @ 11.89 hrs, Volume= 1.115 af
Outflow = 0.67 cfs @ 13.70 hrs, Volume= 1.109 af, Atten= 97%, Lag= 108.7 min
Primary = 0.67 cfs @ 13.70 hrs, Volume= 1.109 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 2
Starting Elev= 1,190.60' Surf.Area= 0.199 ac Storage= 0.156 af
Peak Elev= 1,193.31' @ 13.70 hrs Surf.Area= 0.286 ac Storage= 0.861 af (0.705 af above start)

Plug-Flow detention time= 768.7 min calculated for 0.952 af (85% of inflow)
Center-of-Mass det. time= 595.8 min (1,361.1 - 765.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,190.00'	3.622 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,190.00	0.180	0.000	0.000
1,195.00	0.340	1.300	1.300
1,200.40	0.520	2.322	3.622

Device	Routing	Invert	Outlet Devices
#1	Primary	1,190.50'	**12.0" Round Culvert** L= 352.0' Ke= 0.600 Outlet Invert= 1,136.29' S= 0.1540 '/' Cc= 0.900 n= 0.013
#2	Device 1	1,190.60'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	1,199.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600

Limited to weir flow at low heads

Primary OutFlow Max=0.67 cfs @ 13.70 hrs HW=1,193.31' (Free Discharge)
└─**1=Culvert** (Passes 0.67 cfs of 5.39 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.67 cfs @ 7.68 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 4P: Pre-Treatment Basin 1

Inflow Area =	70.950 ac, 43.64% Impervious, Inflow Depth = 1.50" for 2 YR event				
Inflow =	132.28 cfs @	11.90 hrs, Volume=	8.863 af		
Outflow =	90.75 cfs @	11.98 hrs, Volume=	8.695 af, Atten= 31%, Lag= 5.0 min		
Primary =	90.75 cfs @	11.98 hrs, Volume=	8.695 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,082.02' @ 11.99 hrs Surf.Area= 0.347 ac Storage= 1.297 af

Plug-Flow detention time= 37.9 min calculated for 8.683 af (98% of inflow)
Center-of-Mass det. time= 27.7 min (861.9 - 834.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,077.90'	3.885 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,077.90	0.000	0.000	0.000
1,078.00	0.240	0.012	0.012
1,084.00	0.400	1.920	1.932
1,088.20	0.530	1.953	3.885

Device	Routing	Invert	Outlet Devices
#1	Primary	1,078.50'	**36.0" Round Culvert X 2.00** L= 29.0' Ke= 0.600 Outlet Invert= 1,077.92' S= 0.0200 '/' Cc= 0.900 n= 0.013
#2	Primary	1,086.10'	**25.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=88.83 cfs @ 11.98 hrs HW=1,081.94' (Free Discharge)
└─**1=Culvert** (Inlet Controls 88.83 cfs @ 6.28 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: infiltration basin 1

[81] Warning: Exceeded Pond 2P by 1.72' @ 26.30 hrs

Inflow Area =	144.690 ac, 27.04% Impervious, Inflow Depth > 0.79" for 2 YR event				
Inflow =	20.38 cfs @	12.88 hrs, Volume=	9.563 af		
Outflow =	5.12 cfs @	18.18 hrs, Volume=	7.993 af, Atten= 75%, Lag= 317.7 min		
Discarded =	1.20 cfs @	12.00 hrs, Volume=	5.965 af		
Primary =	3.92 cfs @	18.18 hrs, Volume=	2.028 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,081.12' @ 18.18 hrs Surf.Area= 0.971 ac Storage= 6.338 af

Plug-Flow detention time= 1,306.4 min calculated for 7.982 af (83% of inflow)
Center-of-Mass det. time= 1,211.0 min (2,195.8 - 984.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,074.00'	13.580 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,074.00	0.700	0.000	0.000
1,084.00	1.080	8.900	8.900
1,088.00	1.260	4.680	13.580

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,074.00'	**1.20 cfs Exfiltration when above 1,074.00'**
#2	Primary	1,080.25'	**24.0" Round Culvert** L= 153.0' Ke= 0.600 Outlet Invert= 1,074.02' S= 0.0407 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=1.20 cfs @ 12.00 hrs HW=1,074.17' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 1.20 cfs)

Primary OutFlow Max=3.91 cfs @ 18.18 hrs HW=1,081.12' (Free Discharge)
└**2=Culvert** (Inlet Controls 3.91 cfs @ 2.98 fps)

Summary for Pond 6P: Infiltration Basin 2

Inflow Area =	63.610 ac,	7.67% Impervious,	Inflow Depth =	0.70"	for 2 YR event
Inflow =	17.44 cfs @	12.50 hrs,	Volume=	3.728 af	
Outflow =	0.82 cfs @	24.91 hrs,	Volume=	3.303 af,	Atten= 95%, Lag= 744.3 min
Discarded =	0.82 cfs @	24.91 hrs,	Volume=	3.303 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Starting Elev= 1,131.80' Surf.Area= 24,618 sf Storage= 44,810 cf
Peak Elev= 1,135.50' @ 24.91 hrs Surf.Area= 29,931 sf Storage= 147,764 cf (102,954 cf above start)

Plug-Flow detention time= 1,927.0 min calculated for 2.274 af (61% of inflow)
Center-of-Mass det. time= 1,137.6 min (2,208.4 - 1,070.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,130.00'	292,856 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,130.00	22,128	0	0
1,134.00	27,661	99,578	99,578
1,140.00	36,765	193,278	292,856

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,130.00'	**4.560 in/hr Exfiltration over Surface area above 1,130.00'** Excluded Surface area = 22,128 sf
#2	Primary	1,130.00'	**36.0" Round Culvert X 2.00** L= 46.0' Ke= 0.600 Outlet Invert= 1,124.50' S= 0.1196 '/' Cc= 0.900 n= 0.013
#3	Primary	1,137.00'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#4	Device 2	1,135.50'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.82 cfs @ 24.91 hrs HW=1,135.50' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.82 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,131.80' (Free Discharge)
├─**2=Culvert** (Passes 0.00 cfs of 37.93 cfs potential flow)
│ └─**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 7P: Roadway SWM Area #3A

Inflow Area =	30.240 ac,	5.85% Impervious,	Inflow Depth =	0.62"	for 2 YR event
Inflow =	21.56 cfs @	12.01 hrs,	Volume=	1.551 af	
Outflow =	16.64 cfs @	12.12 hrs,	Volume=	1.462 af,	Atten= 23%, Lag= 6.4 min
Primary =	16.64 cfs @	12.12 hrs,	Volume=	1.462 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Peak Elev= 2.34' @ 12.12 hrs Surf.Area= 4,585 sf Storage= 9,446 cf

Plug-Flow detention time= 58.0 min calculated for 1.462 af (94% of inflow)
Center-of-Mass det. time= 26.5 min (925.6 - 899.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	29,932 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	3,387	0	0
2.00	4,398	7,785	7,785
4.00	5,511	9,909	17,694
6.00	6,727	12,238	29,932

Device	Routing	Invert	Outlet Devices
#1	Primary	1.00'	**36.0" Round Culvert X 2.00** L= 10.0' Ke= 0.600 Outlet Invert= 0.90' S= 0.0100 '/' Cc= 0.900 n= 0.013

Primary OutFlow Max=15.63 cfs @ 12.12 hrs HW=2.29' (Free Discharge)
└─**1=Culvert** (Barrel Controls 15.63 cfs @ 3.98 fps)

Summary for Pond 22P: Pre-Treatment Basin 3

Inflow Area = 5.000 ac,100.00% Impervious, Inflow Depth = 3.27" for 2 YR event
Inflow = 23.96 cfs @ 11.89 hrs, Volume= 1.361 af
Outflow = 0.74 cfs @ 13.76 hrs, Volume= 1.248 af, Atten= 97%, Lag= 112.4 min
Primary = 0.74 cfs @ 13.76 hrs, Volume= 1.248 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,208.89' @ 13.76 hrs Surf.Area= 13,047 sf Storage= 40,012 cf

Plug-Flow detention time= 674.4 min calculated for 1.248 af (92% of inflow)
Center-of-Mass det. time= 629.2 min (1,375.9 - 746.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,205.00'	148,931 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,205.00	7,689	0	0
1,207.00	10,290	17,979	17,979
1,209.00	13,210	23,500	41,479
1,211.00	16,177	29,387	70,866
1,213.00	19,460	35,637	106,503
1,215.00	22,968	42,428	148,931

Device	Routing	Invert	Outlet Devices
#1	Primary	1,205.50'	**24.0" Round Culvert** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 1,200.50' S= 0.0500 '/' Cc= 0.900 n= 0.013
#2	Device 1	1,205.60'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	1,214.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.74 cfs @ 13.76 hrs HW=1,208.89' (Free Discharge)
└─**1=Culvert** (Passes 0.74 cfs of 23.38 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.74 cfs @ 8.51 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 23P: Infiltration Basin 3

Inflow Area = 46.800 ac, 11.41% Impervious, Inflow Depth > 0.76" for 2 YR event
Inflow = 7.47 cfs @ 13.13 hrs, Volume= 2.961 af
Outflow = 2.14 cfs @ 16.64 hrs, Volume= 2.960 af, Atten= 71%, Lag= 210.7 min
Discarded = 2.14 cfs @ 16.64 hrs, Volume= 2.960 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,196.45' @ 16.64 hrs Surf.Area= 20,231 sf Storage= 27,195 cf

Plug-Flow detention time= 130.8 min calculated for 2.960 af (100% of inflow)
Center-of-Mass det. time= 130.7 min (1,287.4 - 1,156.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,195.00'	290,262 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,195.00	17,221	0	0
1,197.00	21,366	38,587	38,587
1,199.00	25,880	47,246	85,833
1,201.00	30,922	56,802	142,635
1,203.00	36,720	67,642	210,277
1,205.00	43,265	79,985	290,262

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,195.00'	**4.560 in/hr Exfiltration over Surface area**
#2	Primary	1,195.00'	**36.0" Round Culvert**
			L= 100.0' CPP, end-section conforming to fill, Ke= 0.500
			Outlet Invert= 1,185.00' S= 0.1000 '/' Cc= 0.900 n= 0.013
#3	Primary	1,203.25'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#4	Device 2	1,202.00'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.14 cfs @ 16.64 hrs HW=1,196.45' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 2.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,195.00' (Free Discharge)
├─**2=Culvert** (Controls 0.00 cfs)
│ └─**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: to sediment forebay Runoff Area=22.530 ac 27.43% Impervious Runoff Depth=2.04"
Flow Length=2,260' Tc=47.7 min CN=70 Runoff=27.87 cfs 3.823 af

Subcatchment 2S: north of site Runoff Area=313.270 ac 0.00% Impervious Runoff Depth=1.44"
Flow Length=5,678' Slope=0.0560 '/' Tc=92.2 min CN=62 Runoff=153.58 cfs 37.550 af

Subcatchment 3S: Rossini Parcel middle Runoff Area=56.440 ac 0.00% Impervious Runoff Depth=1.30"
Flow Length=2,340' Tc=40.4 min CN=60 Runoff=44.60 cfs 6.119 af

Subcatchment 4S: Rossini Parcel north Runoff Area=32.050 ac 0.00% Impervious Runoff Depth=1.30"
Flow Length=2,490' Tc=43.8 min CN=60 Runoff=24.00 cfs 3.475 af

Subcatchment 5S: Cooke Parcel east Runoff Area=59.130 ac 1.17% Impervious Runoff Depth=1.30"
Flow Length=1,229' Tc=26.4 min CN=60 Runoff=62.78 cfs 6.411 af

Subcatchment 6S: Rossini Parcel south Runoff Area=26.060 ac 0.00% Impervious Runoff Depth=1.23"
Flow Length=1,112' Tc=27.6 min CN=59 Runoff=25.12 cfs 2.680 af

Subcatchment 8S: Btwn Cooke/Rossini Runoff Area=41.800 ac 0.81% Impervious Runoff Depth=1.23"
Flow Length=2,572' Tc=54.3 min CN=59 Runoff=24.82 cfs 4.299 af

Subcatchment 9S: Gildick Parcel north Runoff Area=40.610 ac 2.71% Impervious Runoff Depth=1.30"
Flow Length=523' Slope=0.1990 '/' Tc=11.4 min CN=60 Runoff=69.10 cfs 4.403 af

Subcatchment 10S: Gildick Parcel south Runoff Area=2.900 ac 90.00% Impervious Runoff Depth=4.31"
Flow Length=2,774' Slope=0.0300 '/' Tc=5.0 min CN=94 Runoff=19.22 cfs 1.041 af

Subcatchment 11S: gildick parcel south to Runoff Area=30.240 ac 5.85% Impervious Runoff Depth=1.44"
Flow Length=2,467' Tc=11.2 min CN=62 Runoff=58.38 cfs 3.625 af

Subcatchment 12S: rte 17 east of exit 107 Runoff Area=45.420 ac 20.41% Impervious Runoff Depth=1.88"
Flow Length=3,174' Slope=0.1400 '/' Tc=10.9 min CN=68 Runoff=119.32 cfs 7.114 af

Subcatchment 14S: between proposed Runoff Area=18.380 ac 0.00% Impervious Runoff Depth=1.30"
Tc=5.0 min CN=60 Runoff=38.37 cfs 1.993 af

Subcatchment 15S: casino roof runoff Runoff Area=7.070 ac 100.00% Impervious Runoff Depth=4.76"
Tc=5.0 min CN=98 Runoff=48.65 cfs 2.806 af

Subcatchment 16S: direct entry to basins Runoff Area=13.410 ac 59.36% Impervious Runoff Depth=3.17"
Tc=5.0 min CN=83 Runoff=71.21 cfs 3.547 af

Subcatchment 17S: Gildick Parcel south - Runoff Area=33.980 ac 2.47% Impervious Runoff Depth=1.23"
Flow Length=2,689' Slope=0.0770 '/' Tc=43.1 min CN=59 Runoff=23.95 cfs 3.495 af

Subcatchment 18S: gildick parcel middle Runoff Area=13.040 ac 0.00% Impervious Runoff Depth=1.30"
Flow Length=975' Slope=0.1610 '/' Tc=11.4 min CN=60 Runoff=22.19 cfs 1.414 af

Subcatchment 19S: warehouse area to Runoff Area=1.580 ac 100.00% Impervious Runoff Depth=4.76"
Flow Length=489' Slope=0.0100 '/' Tc=5.0 min CN=98 Runoff=10.87 cfs 0.627 af

Subcatchment 20S: to sediment forebay Runoff Area=21.970 ac 76.56% Impervious Runoff Depth=3.77"
Flow Length=2,236' Slope=0.0190 '/' Tc=5.0 min CN=89 Runoff=133.99 cfs 6.906 af

Subcatchment 21S: (new Subcat) Runoff Area=5.000 ac 100.00% Impervious Runoff Depth=4.76"
Tc=5.0 min CN=98 Runoff=34.41 cfs 1.985 af

Reach 1R: Discharge Point, DP-1 Inflow=236.40 cfs 78.880 af
Outflow=236.40 cfs 78.880 af

Reach 2R: wetland 1 to stream Avg. Depth=0.06' Max Vel=1.79 fps Inflow=3.45 cfs 2.144 af
n=0.050 L=2,800.0' S=0.1400 '/' Capacity=1,973.89 cfs Outflow=3.42 cfs 2.144 af

Reach 3R: culvert under 161 to stream Avg. Depth=0.75' Max Vel=5.07 fps Inflow=44.60 cfs 6.119 af
n=0.050 L=3,715.0' S=0.0500 '/' Capacity=371.77 cfs Outflow=39.57 cfs 6.119 af

Reach 4R: culvert under 161 to stream Avg. Depth=0.54' Max Vel=3.85 fps Inflow=24.00 cfs 3.475 af
n=0.050 L=2,940.0' S=0.0430 '/' Capacity=344.77 cfs Outflow=21.27 cfs 3.475 af

Reach 6R: culvert under 161 to wetland 1 Avg. Depth=0.39' Max Vel=6.33 fps Inflow=25.12 cfs 2.680 af
n=0.050 L=571.0' S=0.1750 '/' Capacity=695.54 cfs Outflow=24.46 cfs 2.680 af

Reach 7R: Prop. swale 1 btwn wetlands 1 & 2 Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.025 L=325.0' S=0.0277 '/' Capacity=381.51 cfs Outflow=0.00 cfs 0.000 af

Reach 10R: prop. swale 2 by main road Avg. Depth=1.58' Max Vel=3.29 fps Inflow=62.78 cfs 6.411 af
n=0.025 L=1,175.0' S=0.0025 '/' Capacity=195.65 cfs Outflow=58.02 cfs 6.411 af

Reach 11R: stream after forebay 2 Avg. Depth=0.75' Max Vel=20.33 fps Inflow=52.02 cfs 3.535 af
n=0.015 L=560.0' S=0.1000 '/' Capacity=526.90 cfs Outflow=49.70 cfs 3.535 af

Reach 12R: stream to Neversink River Avg. Depth=0.78' Max Vel=4.94 fps Inflow=201.66 cfs 49.288 af
n=0.025 L=1,000.0' S=0.0100 '/' Capacity=1,865.25 cfs Outflow=200.71 cfs 49.288 af

Reach 24R: Proposed Swale 3 Avg. Depth=0.78' Max Vel=3.15 fps Inflow=24.82 cfs 4.299 af
n=0.025 L=1,975.0' S=0.0050 '/' Capacity=127.26 cfs Outflow=23.33 cfs 4.299 af

Pond 1P: wetlands on Gildick Parcel Peak Elev=1,106.25' Storage=5.251 af Inflow=78.09 cfs 7.084 af
Primary=0.00 cfs 0.000 af Secondary=3.45 cfs 2.144 af Outflow=3.45 cfs 2.144 af

Pond 2P: Existing Pond Peak Elev=1,083.44' Storage=13.546 af Inflow=173.70 cfs 18.334 af
24.0" Round Culvert n=0.013 L=34.0' S=0.0200 '/' Outflow=28.16 cfs 17.278 af

Pond 3P: Pre-Treatment Basin 2 Peak Elev=1,194.76' Storage=1.237 af Inflow=30.09 cfs 1.668 af
Outflow=0.84 cfs 1.661 af

Pond 4P: Pre-Treatment Basin 1 Peak Elev=1,084.56' Storage=2.192 af Inflow=223.02 cfs 15.690 af
Outflow=136.27 cfs 15.528 af

Pond 5P: infiltration basin 1 Peak Elev=1,082.82' Storage=7.849 af Inflow=28.16 cfs 17.278 af
Discarded=1.20 cfs 6.003 af Primary=17.76 cfs 9.622 af Outflow=18.96 cfs 15.625 af

Pond 6P: Infiltration Basin 2 Peak Elev=1,135.99' Storage=163,527 cf Inflow=58.82 cfs 8.072 af
Discarded=0.90 cfs 3.648 af Primary=10.99 cfs 3.834 af Outflow=11.90 cfs 7.482 af

Pond 7P: Roadway SWM Area #3A Peak Elev=3.60' Storage=15,691 cf Inflow=58.38 cfs 3.625 af
36.0" Round Culvert x 2.00 n=0.013 L=10.0' S=0.0100 '/' Outflow=52.02 cfs 3.535 af

Pond 22P: Pre-Treatment Basin 3 Peak Elev=1,210.23' Storage=58,866 cf Inflow=34.41 cfs 1.985 af
Outflow=0.89 cfs 1.871 af

Pond 23P: Infiltration Basin 3 Peak Elev=1,199.79' Storage=107,188 cf Inflow=24.21 cfs 6.170 af
Discarded=2.94 cfs 6.170 af Primary=0.00 cfs 0.000 af Outflow=2.94 cfs 6.170 af

Total Runoff Area = 784.880 ac Runoff Volume = 103.314 af Average Runoff Depth = 1.58"
92.20% Pervious = 723.650 ac 7.80% Impervious = 61.230 ac

Summary for Subcatchment 1S: to sediment forebay from south

Runoff = 27.87 cfs @ 12.44 hrs, Volume= 3.823 af, Depth= 2.04"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	3.650	98	road
*	2.530	98	employee parking garage
*	16.350	60	existing forest/field
	22.530	70	Weighted Average
	16.350		72.57% Pervious Area
	6.180		27.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.1	100	0.0100	0.06		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
18.3	550	0.0100	0.50		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
2.3	1,610	0.0255	11.50	36.13	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
47.7	2,260	Total			

Summary for Subcatchment 2S: north of site

Runoff = 153.58 cfs @ 13.10 hrs, Volume= 37.550 af, Depth= 1.44"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	197.240	60	forest
*	78.560	56	field
*	37.470	85	gravel pit
	313.270	62	Weighted Average
	313.270		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0560	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
78.6	5,578	0.0560	1.18		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
92.2	5,678	Total			

Summary for Subcatchment 3S: Rossini Parcel middle

Runoff = 44.60 cfs @ 12.38 hrs, Volume= 6.119 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	49.870	60	FOREST
*	6.570	56	FIELD
	56.440	60	Weighted Average
	56.440		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
27.8	2,200	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	9.44	66.70	**Pipe Channel, Segment ID:** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013
40.4	2,340	Total			

Summary for Subcatchment 4S: Rossini Parcel north

Runoff = 24.00 cfs @ 12.42 hrs, Volume= 3.475 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	29.310	60	FOREST
*	2.740	56	FIELD
	32.050	60	Weighted Average
	32.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0645	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
30.8	2,350	0.0645	1.27		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
43.8	2,490	Total			

Summary for Subcatchment 5S: Cooke Parcel east

Runoff = 62.78 cfs @ 12.19 hrs, Volume= 6.411 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	44.950	60	FOREST
*	13.490	56	FIELD
*	0.690	98	road
	59.130	60	Weighted Average
	58.440		98.83% Pervious Area
	0.690		1.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	1,089	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
26.4	1,229	Total			

Summary for Subcatchment 6S: Rossini Parcel south

Runoff = 25.12 cfs @ 12.21 hrs, Volume= 2.680 af, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	20.500	60	FOREST
*	5.560	56	FIELD
	26.060	59	Weighted Average
	26.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	972	0.0550	1.17		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
27.6	1,112	Total			

Summary for Subcatchment 8S: Btwn Cooke/Rossini

Runoff = 24.82 cfs @ 12.57 hrs, Volume= 4.299 af, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	23.170	60	forest
*	18.290	56	field
*	0.340	98	road
	41.800	59	Weighted Average
	41.460		99.19% Pervious Area
	0.340		0.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0430	0.11		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
39.1	2,432	0.0430	1.04		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	9.44	66.70	**Pipe Channel, Segment ID:** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013
54.3	2,572	Total			

Summary for Subcatchment 9S: Gildick Parcel north

[49] Hint: Tc<2dt may require smaller dt

Runoff = 69.10 cfs @ 12.00 hrs, Volume= 4.403 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	33.970	60	forest
*	5.540	56	field
*	1.100	98	road
	40.610	60	Weighted Average
	39.510		97.29% Pervious Area
	1.100		2.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	100	0.1990	0.20		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
3.2	423	0.1990	2.23		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
11.4	523	Total			

Summary for Subcatchment 10S: Gildick Parcel south

[49] Hint: Tc<2dt may require smaller dt

Runoff = 19.22 cfs @ 11.89 hrs, Volume= 1.041 af, Depth= 4.31"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	2.610	98	road
*	0.290	60	landscaping
	2.900	94	Weighted Average
	0.290		10.00% Pervious Area
	2.610		90.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	2,774	0.0300	12.47	39.18	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
3.7	2,774	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment 11S: gildick parcel south to stream

[49] Hint: Tc<2dt may require smaller dt

Runoff = 58.38 cfs @ 12.00 hrs, Volume= 3.625 af, Depth= 1.44"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	28.470	60	grassed
*	1.770	98	road
	30.240	62	Weighted Average
	28.470		94.15% Pervious Area
	1.770		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.8	2,367	0.0600	22.37	604.05	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
11.2	2,467	Total			

Summary for Subcatchment 12S: rte 17 east of exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 119.32 cfs @ 11.99 hrs, Volume= 7.114 af, Depth= 1.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	36.150	60	grassed
*	9.270	98	paved road
	45.420	68	Weighted Average
	36.150		79.59% Pervious Area
	9.270		20.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	3,074	0.1400	34.17	922.71	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
10.9	3,174	Total			

Summary for Subcatchment 14S: between proposed roads and river

[49] Hint: Tc<2dt may require smaller dt

Runoff = 38.37 cfs @ 11.91 hrs, Volume= 1.993 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	18.380	60	existing undeveloped land
	18.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Segment ID:**

Summary for Subcatchment 15S: casino roof runoff

[49] Hint: Tc<2dt may require smaller dt

Runoff = 48.65 cfs @ 11.89 hrs, Volume= 2.806 af, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	7.070	98	casino roof runoff
	7.070		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Segment ID:**

Summary for Subcatchment 16S: direct entry to basins

[49] Hint: Tc<2dt may require smaller dt

Runoff = 71.21 cfs @ 11.90 hrs, Volume= 3.547 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	2.630	98	parking lot
*	5.330	98	WQ basins
*	5.450	60	landscaped around basins
	13.410	83	Weighted Average
	5.450		40.64% Pervious Area
	7.960		59.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Segment ID:**

Summary for Subcatchment 17S: Gildick Parcel south - undeveloped

Runoff = 23.95 cfs @ 12.42 hrs, Volume= 3.495 af, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	15.640	60	field
*	17.500	56	FOREST
*	0.840	98	infiltration basin 2
	33.980	59	Weighted Average
	33.140		97.53% Pervious Area
	0.840		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0770	0.14		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
31.1	2,589	0.0770	1.39		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
43.1	2,689	Total			

Summary for Subcatchment 18S: gildick parcel middle west

[49] Hint: Tc<2dt may require smaller dt

Runoff = 22.19 cfs @ 12.00 hrs, Volume= 1.414 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	13.040	60	field
	13.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1610	0.41		**Sheet Flow, Segment ID:** Grass: Short n= 0.150 P2= 3.50"
7.3	875	0.1610	2.01		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
11.4	975	Total			

Summary for Subcatchment 19S: warehouse area to pond 3

[49] Hint: Tc<2dt may require smaller dt

Runoff = 10.87 cfs @ 11.89 hrs, Volume= 0.627 af, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	0.360	98	parking/road
*	0.700	98	warehouse
*	0.520	98	sediment forebay 2
	1.580	98	Weighted Average
	1.580		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0100	1.09		**Sheet Flow, Segment ID:** Smooth surfaces n= 0.011 P2= 3.50"
1.4	389	0.0100	4.54	3.56	**Pipe Channel, Segment ID:** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
2.9	489	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment 20S: to sediment forebay from north

[49] Hint: Tc<2dt may require smaller dt

Runoff = 133.99 cfs @ 11.89 hrs, Volume= 6.906 af, Depth= 3.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	0.400	98	hotel
*	6.940	98	parking garage by casino
*	2.290	98	parking garage by basins
*	5.150	60	landscaped
*	6.300	98	road
*	0.890	98	storage area
	21.970	89	Weighted Average
	5.150		23.44% Pervious Area
	16.820		76.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0190	1.41		**Sheet Flow, Segment ID:** Smooth surfaces n= 0.011 P2= 3.50"
3.6	2,136	0.0190	9.93	31.18	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
4.8	2,236	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment 21S: (new Subcat)

[49] Hint: Tc<2dt may require smaller dt

Runoff = 34.41 cfs @ 11.89 hrs, Volume= 1.985 af, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	5.000	98	
	5.000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 1R: Discharge Point, DP-1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 784.880 ac, 7.80% Impervious, Inflow Depth = 1.21" for 10 YR event
Inflow = 236.40 cfs @ 13.04 hrs, Volume= 78.880 af
Outflow = 236.40 cfs @ 13.04 hrs, Volume= 78.880 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Summary for Reach 2R: wetland 1 to stream

[65] Warning: Inlet elevation not specified

Inflow = 3.45 cfs @ 17.85 hrs, Volume= 2.144 af
Outflow = 3.42 cfs @ 18.59 hrs, Volume= 2.144 af, Atten= 1%, Lag= 44.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 1.79 fps, Min. Travel Time= 26.1 min
Avg. Velocity = 1.21 fps, Avg. Travel Time= 38.6 min

Peak Storage= 5,352 cf @ 18.16 hrs, Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,973.89 cfs

30.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 33.00'
Length= 2,800.0' Slope= 0.1400 '/'
Inlet Invert= 0.00', Outlet Invert= -392.00'

Summary for Reach 3R: culvert under 161 to stream

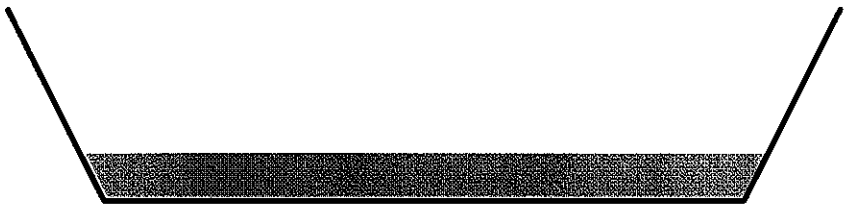
[65] Warning: Inlet elevation not specified

Inflow Area = 56.440 ac, 0.00% Impervious, Inflow Depth = 1.30" for 10 YR event
Inflow = 44.60 cfs @ 12.38 hrs, Volume= 6.119 af
Outflow = 39.57 cfs @ 12.73 hrs, Volume= 6.119 af, Atten= 11%, Lag= 21.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 5.07 fps, Min. Travel Time= 12.2 min
Avg. Velocity = 1.37 fps, Avg. Travel Time= 45.2 min

Peak Storage= 29,002 cf @ 12.53 hrs, Average Depth at Peak Storage= 0.75'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 371.77 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 3,715.0' Slope= 0.0500 '/'
Inlet Invert= 0.00', Outlet Invert= -185.75'



Summary for Reach 4R: culvert under 161 to stream

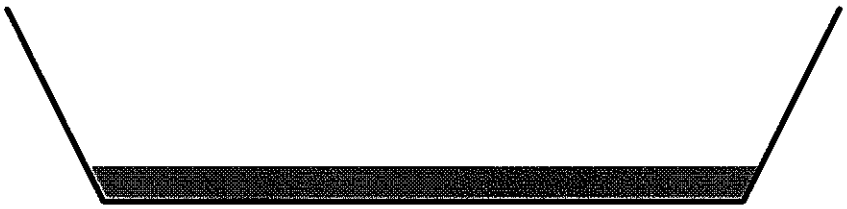
[65] Warning: Inlet elevation not specified

Inflow Area =	32.050 ac,	0.00% Impervious,	Inflow Depth =	1.30"	for 10 YR event
Inflow =	24.00 cfs @	12.42 hrs,	Volume=	3.475 af	
Outflow =	21.27 cfs @	12.80 hrs,	Volume=	3.475 af,	Atten= 11%, Lag= 22.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 3.85 fps, Min. Travel Time= 12.7 min
Avg. Velocity = 1.15 fps, Avg. Travel Time= 42.7 min

Peak Storage= 16,301 cf @ 12.59 hrs, Average Depth at Peak Storage= 0.54'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 344.77 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 2,940.0' Slope= 0.0430 '/'
Inlet Invert= 0.00', Outlet Invert= -126.42'



Summary for Reach 6R: culvert under 161 to wetland 1

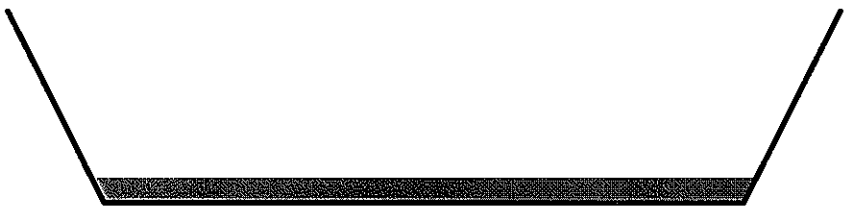
[65] Warning: Inlet elevation not specified

Inflow Area = 26.060 ac, 0.00% Impervious, Inflow Depth = 1.23" for 10 YR event
Inflow = 25.12 cfs @ 12.21 hrs, Volume= 2.680 af
Outflow = 24.46 cfs @ 12.25 hrs, Volume= 2.680 af, Atten= 3%, Lag= 2.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 6.33 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 2.18 fps, Avg. Travel Time= 4.4 min

Peak Storage= 2,265 cf @ 12.22 hrs, Average Depth at Peak Storage= 0.39'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 695.54 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 571.0' Slope= 0.1750 '/'
Inlet Invert= 0.00', Outlet Invert= -99.93'



Summary for Reach 7R: Prop. swale 1 btwn wetlands 1 & 2

Inflow Area = 66.670 ac, 1.65% Impervious, Inflow Depth = 0.00" for 10 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs, Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 381.51 cfs

7.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 10.00'
Length= 325.0' Slope= 0.0277 '/'
Inlet Invert= 1,107.00', Outlet Invert= 1,098.00'

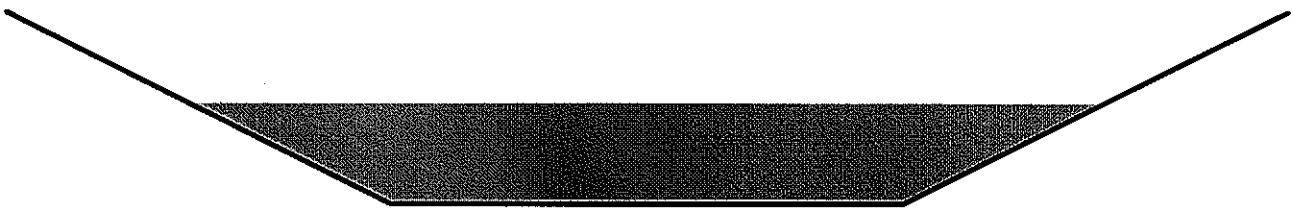
Summary for Reach 10R: prop. swale 2 by main road

Inflow Area = 59.130 ac, 1.17% Impervious, Inflow Depth = 1.30" for 10 YR event
Inflow = 62.78 cfs @ 12.19 hrs, Volume= 6.411 af
Outflow = 58.02 cfs @ 12.37 hrs, Volume= 6.411 af, Atten= 8%, Lag= 10.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 3.29 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 0.90 fps, Avg. Travel Time= 21.8 min

Peak Storage= 20,684 cf @ 12.27 hrs, Average Depth at Peak Storage= 1.58'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 195.65 cfs

8.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 20.00'
Length= 1,175.0' Slope= 0.0025 '/'
Inlet Invert= 1,142.94', Outlet Invert= 1,140.00'



Summary for Reach 11R: stream after forebay 2

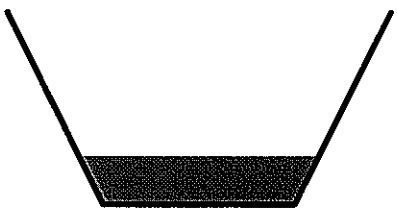
[65] Warning: Inlet elevation not specified

Inflow Area = 30.240 ac, 5.85% Impervious, Inflow Depth = 1.40" for 10 YR event
Inflow = 52.02 cfs @ 12.04 hrs, Volume= 3.535 af
Outflow = 49.70 cfs @ 12.06 hrs, Volume= 3.535 af, Atten= 4%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 20.33 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 4.69 fps, Avg. Travel Time= 2.0 min

Peak Storage= 1,416 cf @ 12.05 hrs, Average Depth at Peak Storage= 0.75'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 526.90 cfs

3.00' x 3.00' deep channel, n= 0.015
Side Slope Z-value= 0.5 '/' Top Width= 6.00'
Length= 560.0' Slope= 0.1000 '/'
Inlet Invert= 0.00', Outlet Invert= -56.00'



Summary for Reach 12R: stream to Neversink River

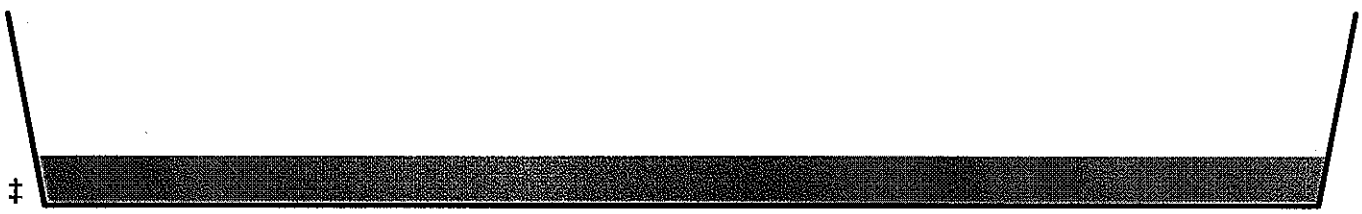
[65] Warning: Inlet elevation not specified

Inflow Area = 401.760 ac, 0.00% Impervious, Inflow Depth = 1.47" for 10 YR event
Inflow = 201.66 cfs @ 12.94 hrs, Volume= 49.288 af
Outflow = 200.71 cfs @ 13.04 hrs, Volume= 49.288 af, Atten= 0%, Lag= 5.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 4.94 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 1.17 fps, Avg. Travel Time= 14.2 min

Peak Storage= 40,716 cf @ 12.98 hrs, Average Depth at Peak Storage= 0.78'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,865.25 cfs

52.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 55.00'
Length= 1,000.0' Slope= 0.0100 '/'
Inlet Invert= 0.00', Outlet Invert= -10.00'



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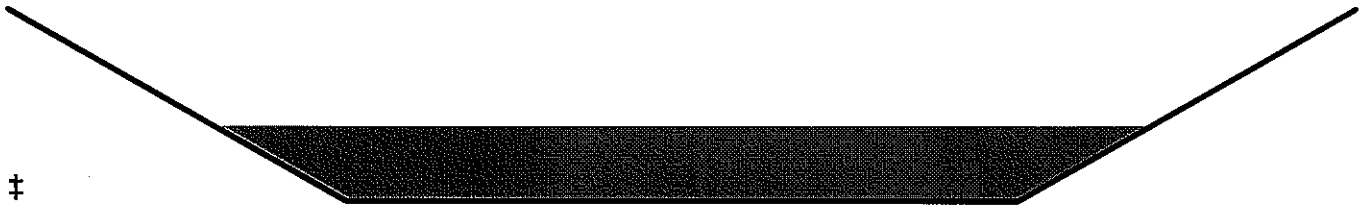
Summary for Reach 24R: Proposed Swale 3

Inflow Area = 41.800 ac, 0.81% Impervious, Inflow Depth = 1.23" for 10 YR event
Inflow = 24.82 cfs @ 12.57 hrs, Volume= 4.299 af
Outflow = 23.33 cfs @ 12.89 hrs, Volume= 4.299 af, Atten= 6%, Lag= 19.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 3.15 fps, Min. Travel Time= 10.4 min
Avg. Velocity = 0.87 fps, Avg. Travel Time= 37.7 min

Peak Storage= 14,723 cf @ 12.71 hrs, Average Depth at Peak Storage= 0.78'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 127.26 cfs

8.00' x 2.00' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 1,975.0' Slope= 0.0050 '/'
Inlet Invert= 1,214.88', Outlet Invert= 1,205.00'



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Summary for Pond 1P: wetlands on Gildick Parcel

Inflow Area =	66.670 ac,	1.65% Impervious,	Inflow Depth =	1.27"	for 10 YR event
Inflow =	78.09 cfs @	12.02 hrs,	Volume=	7.084 af	
Outflow =	3.45 cfs @	17.85 hrs,	Volume=	2.144 af,	Atten= 96%, Lag= 349.8 min
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	
Secondary =	3.45 cfs @	17.85 hrs,	Volume=	2.144 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Peak Elev= 1,106.25' @ 17.85 hrs Surf.Area= 3.806 ac Storage= 5.251 af

Plug-Flow detention time= 503.2 min calculated for 2.141 af (30% of inflow)
Center-of-Mass det. time= 343.6 min (1,226.6 - 883.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,103.40'	15.137 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,103.40	0.000	0.000	0.000
1,104.00	0.490	0.147	0.147
1,106.00	3.170	3.660	3.807
1,108.00	8.160	11.330	15.137

Device	Routing	Invert	Outlet Devices
#1	Secondary	1,106.20'	**80.0' long Broad-Crested Rectangular Weir** Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00 Coef. (English) 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30
#2	Primary	1,107.30'	**50.0' long Broad-Crested Rectangular Weir** Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00 Coef. (English) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,103.40' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=3.40 cfs @ 17.85 hrs HW=1,106.25' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 3.40 cfs @ 0.77 fps)

Summary for Pond 2P: Existing Pond

[81] Warning: Exceeded Pond 4P by 3.72' @ 13.70 hrs

Inflow Area =	144.690 ac,	27.04% Impervious,	Inflow Depth =	1.52"	for 10 YR event
Inflow =	173.70 cfs @	11.94 hrs,	Volume=	18.334 af	
Outflow =	28.16 cfs @	13.11 hrs,	Volume=	17.278 af,	Atten= 84%, Lag= 70.2 min
Primary =	28.16 cfs @	13.11 hrs,	Volume=	17.278 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Starting Elev= 1,077.00' Surf.Area= 0.892 ac Storage= 4.900 af
Peak Elev= 1,083.44' @ 13.11 hrs Surf.Area= 2.568 ac Storage= 13.546 af (8.646 af above start)
Flood Elev= 1,090.00' Surf.Area= 3.970 ac Storage= 28.530 af (23.630 af above start)

Plug-Flow detention time= 363.3 min calculated for 12.360 af (67% of inflow)
Center-of-Mass det. time= 166.0 min (994.1 - 828.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,070.00'	28.530 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,070.00	0.220	0.000	0.000
1,080.00	1.180	7.000	7.000
1,082.00	1.940	3.120	10.120
1,084.00	2.810	4.750	14.870
1,086.00	3.440	6.250	21.120
1,088.00	3.970	7.410	28.530

Device	Routing	Invert	Outlet Devices
#1	Primary	1,078.50'	**24.0" Round Culvert** L= 34.0' Ke= 0.600 Outlet Invert= 1,077.82' S= 0.0200 '/' Cc= 0.900 n= 0.013

Primary OutFlow Max=28.16 cfs @ 13.11 hrs HW=1,083.44' (Free Discharge)
└**1=Culvert** (Inlet Controls 28.16 cfs @ 8.96 fps)

Summary for Pond 3P: Pre-Treatment Basin 2

Inflow Area = 4.480 ac, 93.53% Impervious, Inflow Depth = 4.47" for 10 YR event
Inflow = 30.09 cfs @ 11.89 hrs, Volume= 1.668 af
Outflow = 0.84 cfs @ 14.01 hrs, Volume= 1.661 af, Atten= 97%, Lag= 127.3 min
Primary = 0.84 cfs @ 14.01 hrs, Volume= 1.661 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 2
Starting Elev= 1,190.60' Surf.Area= 0.199 ac Storage= 0.156 af
Peak Elev= 1,194.76' @ 14.01 hrs Surf.Area= 0.332 ac Storage= 1.237 af (1.081 af above start)

Plug-Flow detention time= 842.1 min calculated for 1.503 af (90% of inflow)
Center-of-Mass det. time= 706.3 min (1,462.5 - 756.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,190.00'	3.622 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,190.00	0.180	0.000	0.000
1,195.00	0.340	1.300	1.300
1,200.40	0.520	2.322	3.622

Device	Routing	Invert	Outlet Devices
#1	Primary	1,190.50'	**12.0" Round Culvert** L= 352.0' Ke= 0.600 Outlet Invert= 1,136.29' S= 0.1540 '/' Cc= 0.900 n= 0.013
#2	Device 1	1,190.60'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	1,199.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600

Limited to weir flow at low heads

Primary OutFlow Max=0.84 cfs @ 14.01 hrs HW=1,194.76' (Free Discharge)
└─**1=Culvert** (Passes 0.84 cfs of 6.87 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.84 cfs @ 9.62 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 4P: Pre-Treatment Basin 1

Inflow Area =	70.950 ac, 43.64% Impervious, Inflow Depth = 2.65" for 10 YR event				
Inflow =	223.02 cfs @	11.90 hrs, Volume=	15.690 af		
Outflow =	136.27 cfs @	12.01 hrs, Volume=	15.528 af, Atten= 39%, Lag= 6.6 min		
Primary =	136.27 cfs @	12.01 hrs, Volume=	15.528 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,084.56' @ 12.01 hrs Surf.Area= 0.417 ac Storage= 2.192 af

Plug-Flow detention time= 29.7 min calculated for 15.528 af (99% of inflow)
Center-of-Mass det. time= 22.0 min (844.1 - 822.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,077.90'	3.885 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,077.90	0.000	0.000	0.000
1,078.00	0.240	0.012	0.012
1,084.00	0.400	1.920	1.932
1,088.20	0.530	1.953	3.885

Device	Routing	Invert	Outlet Devices
#1	Primary	1,078.50'	**36.0" Round Culvert X 2.00** L= 29.0' Ke= 0.600 Outlet Invert= 1,077.92' S= 0.0200 '/' Cc= 0.900 n= 0.013
#2	Primary	1,086.10'	**25.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=135.15 cfs @ 12.01 hrs HW=1,084.49' (Free Discharge)
└─**1=Culvert** (Inlet Controls 135.15 cfs @ 9.56 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: infiltration basin 1

[81] Warning: Exceeded Pond 2P by 2.12' @ 19.40 hrs

Inflow Area =	144.690 ac, 27.04% Impervious, Inflow Depth > 1.43" for 10 YR event				
Inflow =	28.16 cfs @	13.11 hrs, Volume=	17.278 af		
Outflow =	18.96 cfs @	17.29 hrs, Volume=	15.625 af, Atten= 33%, Lag= 250.9 min		
Discarded =	1.20 cfs @	11.70 hrs, Volume=	6.003 af		
Primary =	17.76 cfs @	17.29 hrs, Volume=	9.622 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,082.82' @ 17.29 hrs Surf.Area= 1.035 ac Storage= 7.849 af

Plug-Flow detention time= 726.5 min calculated for 15.603 af (90% of inflow)
Center-of-Mass det. time= 672.8 min (1,667.0 - 994.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,074.00'	13.580 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,074.00	0.700	0.000	0.000
1,084.00	1.080	8.900	8.900
1,088.00	1.260	4.680	13.580

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,074.00'	**1.20 cfs Exfiltration when above 1,074.00'**
#2	Primary	1,080.25'	**24.0" Round Culvert** L= 153.0' Ke= 0.600
			Outlet Invert= 1,074.02' S= 0.0407 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=1.20 cfs @ 11.70 hrs HW=1,074.14' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 1.20 cfs)

Primary OutFlow Max=17.76 cfs @ 17.29 hrs HW=1,082.82' (Free Discharge)
└**2=Culvert** (Inlet Controls 17.76 cfs @ 5.65 fps)

Summary for Pond 6P: Infiltration Basin 2

Inflow Area =	63.610 ac,	7.67% Impervious,	Inflow Depth =	1.52"	for 10 YR event
Inflow =	58.82 cfs @	12.37 hrs,	Volume=	8.072 af	
Outflow =	11.90 cfs @	13.33 hrs,	Volume=	7.482 af,	Atten= 80%, Lag= 57.7 min
Discarded =	0.90 cfs @	13.33 hrs,	Volume=	3.648 af	
Primary =	10.99 cfs @	13.33 hrs,	Volume=	3.834 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Starting Elev= 1,131.80' Surf.Area= 24,618 sf Storage= 44,810 cf
Peak Elev= 1,135.99' @ 13.33 hrs Surf.Area= 30,673 sf Storage= 163,527 cf (118,717 cf above start)

Plug-Flow detention time= 879.1 min calculated for 6.453 af (80% of inflow)
Center-of-Mass det. time= 574.1 min (1,594.1 - 1,020.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,130.00'	292,856 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,130.00	22,128	0	0
1,134.00	27,661	99,578	99,578
1,140.00	36,765	193,278	292,856

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,130.00'	**4.560 in/hr Exfiltration over Surface area above 1,130.00'** Excluded Surface area = 22,128 sf
#2	Primary	1,130.00'	**36.0" Round Culvert X 2.00** L= 46.0' Ke= 0.600 Outlet Invert= 1,124.50' S= 0.1196 '/' Cc= 0.900 n= 0.013
#3	Primary	1,137.00'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#4	Device 2	1,135.50'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.90 cfs @ 13.33 hrs HW=1,135.98' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.90 cfs)

Primary OutFlow Max=10.90 cfs @ 13.33 hrs HW=1,135.98' (Free Discharge)
├─**2=Culvert** (Passes 10.90 cfs of 135.13 cfs potential flow)
│ └─**4=Sharp-Crested Rectangular Weir** (Weir Controls 10.90 cfs @ 2.27 fps)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 7P: Roadway SWM Area #3A

Inflow Area =	30.240 ac,	5.85% Impervious,	Inflow Depth =	1.44"	for 10 YR event
Inflow =	58.38 cfs @	12.00 hrs, Volume=	3.625 af		
Outflow =	52.02 cfs @	12.04 hrs, Volume=	3.535 af,	Atten= 11%,	Lag= 2.7 min
Primary =	52.02 cfs @	12.04 hrs, Volume=	3.535 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Peak Elev= 3.60' @ 12.04 hrs Surf.Area= 5,286 sf Storage= 15,691 cf

Plug-Flow detention time= 29.4 min calculated for 3.535 af (98% of inflow)
Center-of-Mass det. time= 13.9 min (881.8 - 867.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	29,932 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	3,387	0	0
2.00	4,398	7,785	7,785
4.00	5,511	9,909	17,694
6.00	6,727	12,238	29,932

Device	Routing	Invert	Outlet Devices
#1	Primary	1.00'	**36.0" Round Culvert X 2.00** L= 10.0' Ke= 0.600 Outlet Invert= 0.90' S= 0.0100 '/' Cc= 0.900 n= 0.013

Primary OutFlow Max=48.47 cfs @ 12.04 hrs HW=3.47' (Free Discharge)
└─**1=Culvert** (Barrel Controls 48.47 cfs @ 5.28 fps)

Summary for Pond 22P: Pre-Treatment Basin 3

Inflow Area = 5.000 ac,100.00% Impervious, Inflow Depth = 4.76" for 10 YR event
Inflow = 34.41 cfs @ 11.89 hrs, Volume= 1.985 af
Outflow = 0.89 cfs @ 14.27 hrs, Volume= 1.871 af, Atten= 97%, Lag= 142.8 min
Primary = 0.89 cfs @ 14.27 hrs, Volume= 1.871 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,210.23' @ 14.27 hrs Surf.Area= 15,036 sf Storage= 58,866 cf

Plug-Flow detention time= 792.6 min calculated for 1.868 af (94% of inflow)
Center-of-Mass det. time= 761.5 min (1,501.5 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,205.00'	148,931 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,205.00	7,689	0	0
1,207.00	10,290	17,979	17,979
1,209.00	13,210	23,500	41,479
1,211.00	16,177	29,387	70,866
1,213.00	19,460	35,637	106,503
1,215.00	22,968	42,428	148,931

Device	Routing	Invert	Outlet Devices
#1	Primary	1,205.50'	**24.0" Round Culvert** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 1,200.50' S= 0.0500 '/' Cc= 0.900 n= 0.013
#2	Device 1	1,205.60'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	1,214.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.89 cfs @ 14.27 hrs HW=1,210.23' (Free Discharge)
└─**1=Culvert** (Passes 0.89 cfs of 29.22 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.89 cfs @ 10.17 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 23P: Infiltration Basin 3

Inflow Area = 46.800 ac, 11.41% Impervious, Inflow Depth > 1.58" for 10 YR event
Inflow = 24.21 cfs @ 12.89 hrs, Volume= 6.170 af
Outflow = 2.94 cfs @ 18.93 hrs, Volume= 6.170 af, Atten= 88%, Lag= 362.6 min
Discarded = 2.94 cfs @ 18.93 hrs, Volume= 6.170 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,199.79' @ 18.93 hrs Surf.Area= 27,883 sf Storage= 107,188 cf

Plug-Flow detention time= 426.4 min calculated for 6.161 af (100% of inflow)
Center-of-Mass det. time= 425.8 min (1,540.2 - 1,114.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,195.00'	290,262 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,195.00	17,221	0	0
1,197.00	21,366	38,587	38,587
1,199.00	25,880	47,246	85,833
1,201.00	30,922	56,802	142,635
1,203.00	36,720	67,642	210,277
1,205.00	43,265	79,985	290,262

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,195.00'	**4.560 in/hr Exfiltration over Surface area**
#2	Primary	1,195.00'	**36.0" Round Culvert**
			L= 100.0' CPP, end-section conforming to fill, Ke= 0.500
			Outlet Invert= 1,185.00' S= 0.1000 '/' Cc= 0.900 n= 0.013
#3	Primary	1,203.25'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#4	Device 2	1,202.00'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.94 cfs @ 18.93 hrs HW=1,199.79' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 2.94 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,195.00' (Free Discharge)
├─**2=Culvert** (Controls 0.00 cfs)
│ └─**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: to sediment forebay Runoff Area=22.530 ac 27.43% Impervious Runoff Depth=4.46"
Flow Length=2,260' Tc=47.7 min CN=70 Runoff=63.23 cfs 8.382 af

Subcatchment 2S: north of site Runoff Area=313.270 ac 0.00% Impervious Runoff Depth=3.56"
Flow Length=5,678' Slope=0.0560 '/' Tc=92.2 min CN=62 Runoff=418.54 cfs 92.844 af

Subcatchment 3S: Rossini Parcel middle Runoff Area=56.440 ac 0.00% Impervious Runoff Depth=3.33"
Flow Length=2,340' Tc=40.4 min CN=60 Runoff=128.93 cfs 15.678 af

Subcatchment 4S: Rossini Parcel north Runoff Area=32.050 ac 0.00% Impervious Runoff Depth=3.33"
Flow Length=2,490' Tc=43.8 min CN=60 Runoff=69.02 cfs 8.903 af

Subcatchment 5S: Cooke Parcel east Runoff Area=59.130 ac 1.17% Impervious Runoff Depth=3.33"
Flow Length=1,229' Tc=26.4 min CN=60 Runoff=177.72 cfs 16.425 af

Subcatchment 6S: Rossini Parcel south Runoff Area=26.060 ac 0.00% Impervious Runoff Depth=3.22"
Flow Length=1,112' Tc=27.6 min CN=59 Runoff=73.57 cfs 6.998 af

Subcatchment 8S: Btwn Cooke/Rossini Runoff Area=41.800 ac 0.81% Impervious Runoff Depth=3.22"
Flow Length=2,572' Tc=54.3 min CN=59 Runoff=74.13 cfs 11.225 af

Subcatchment 9S: Gildick Parcel north Runoff Area=40.610 ac 2.71% Impervious Runoff Depth=3.33"
Flow Length=523' Slope=0.1990 '/' Tc=11.4 min CN=60 Runoff=188.27 cfs 11.281 af

Subcatchment 10S: Gildick Parcel south Runoff Area=2.900 ac 90.00% Impervious Runoff Depth=7.28"
Flow Length=2,774' Slope=0.0300 '/' Tc=5.0 min CN=94 Runoff=31.50 cfs 1.760 af

Subcatchment 11S: gildick parcel south to Runoff Area=30.240 ac 5.85% Impervious Runoff Depth=3.56"
Flow Length=2,467' Tc=11.2 min CN=62 Runoff=150.67 cfs 8.962 af

Subcatchment 12S: rte 17 east of exit 107 Runoff Area=45.420 ac 20.41% Impervious Runoff Depth=4.24"
Flow Length=3,174' Slope=0.1400 '/' Tc=10.9 min CN=68 Runoff=270.94 cfs 16.031 af

Subcatchment 14S: between proposed Runoff Area=18.380 ac 0.00% Impervious Runoff Depth=3.33"
Tc=5.0 min CN=60 Runoff=104.04 cfs 5.106 af

Subcatchment 15S: casino roof runoff Runoff Area=7.070 ac 100.00% Impervious Runoff Depth=7.76"
Tc=5.0 min CN=98 Runoff=78.10 cfs 4.572 af

Subcatchment 16S: direct entry to basins Runoff Area=13.410 ac 59.36% Impervious Runoff Depth=5.98"
Tc=5.0 min CN=83 Runoff=129.94 cfs 6.680 af

Subcatchment 17S: Gildick Parcel south - Runoff Area=33.980 ac 2.47% Impervious Runoff Depth=3.22"
Flow Length=2,689' Slope=0.0770 '/' Tc=43.1 min CN=59 Runoff=71.14 cfs 9.125 af

Subcatchment 18S: gildick parcel middle Runoff Area=13.040 ac 0.00% Impervious Runoff Depth=3.33"
Flow Length=975' Slope=0.1610 '/' Tc=11.4 min CN=60 Runoff=60.45 cfs 3.622 af

Subcatchment 19S: warehouse area to Runoff Area=1.580 ac 100.00% Impervious Runoff Depth=7.76"
Flow Length=489' Slope=0.0100 '/' Tc=5.0 min CN=98 Runoff=17.45 cfs 1.022 af

Subcatchment 20S: to sediment forebay Runoff Area=21.970 ac 76.56% Impervious Runoff Depth=6.69"
Flow Length=2,236' Slope=0.0190 '/' Tc=5.0 min CN=89 Runoff=229.16 cfs 12.242 af

Subcatchment 21S: (new Subcat) Runoff Area=5.000 ac 100.00% Impervious Runoff Depth=7.76"
Tc=5.0 min CN=98 Runoff=55.24 cfs 3.233 af

Reach 1R: Discharge Point, DP-1 Inflow=746.25 cfs 214.712 af
Outflow=746.25 cfs 214.712 af

Reach 2R: wetland 1 to stream Avg. Depth=0.38' Max Vel=5.77 fps Inflow=69.78 cfs 13.339 af
n=0.050 L=2,800.0' S=0.1400 '/' Capacity=1,973.89 cfs Outflow=66.15 cfs 13.339 af

Reach 3R: culvert under 161 to stream Avg. Depth=1.50' Max Vel=7.50 fps Inflow=128.93 cfs 15.678 af
n=0.050 L=3,715.0' S=0.0500 '/' Capacity=371.77 cfs Outflow=119.57 cfs 15.678 af

Reach 4R: culvert under 161 to stream Avg. Depth=1.07' Max Vel=5.80 fps Inflow=69.02 cfs 8.903 af
n=0.050 L=2,940.0' S=0.0430 '/' Capacity=344.77 cfs Outflow=64.87 cfs 8.903 af

Reach 6R: culvert under 161 to wetland 1 Avg. Depth=0.75' Max Vel=9.48 fps Inflow=73.57 cfs 6.998 af
n=0.050 L=571.0' S=0.1750 '/' Capacity=695.54 cfs Outflow=72.51 cfs 6.998 af

Reach 7R: Prop. swale 1 btwn wetlands 1 & 2 Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.025 L=325.0' S=0.0277 '/' Capacity=381.51 cfs Outflow=0.00 cfs 0.000 af

Reach 10R: prop. swale 2 by main road Avg. Depth=2.81' Max Vel=4.49 fps Inflow=177.72 cfs 16.425 af
n=0.025 L=1,175.0' S=0.0025 '/' Capacity=195.65 cfs Outflow=167.94 cfs 16.425 af

Reach 11R: stream after forebay 2 Avg. Depth=1.33' Max Vel=27.19 fps Inflow=133.91 cfs 8.873 af
n=0.015 L=560.0' S=0.1000 '/' Capacity=526.90 cfs Outflow=131.00 cfs 8.873 af

Reach 12R: stream to Neversink River Avg. Depth=1.52' Max Vel=7.58 fps Inflow=606.51 cfs 130.763 af
n=0.025 L=1,000.0' S=0.0100 '/' Capacity=1,865.25 cfs Outflow=603.53 cfs 130.763 af

Reach 24R: Proposed Swale 3 Avg. Depth=1.47' Max Vel=4.48 fps Inflow=74.13 cfs 11.225 af
n=0.025 L=1,975.0' S=0.0050 '/' Capacity=127.26 cfs Outflow=71.61 cfs 11.225 af

Pond 1P: wetlands on Gildick Parcel Peak Elev=1,106.61' Storage=7.272 af Inflow=225.89 cfs 18.279 af
Primary=0.00 cfs 0.000 af Secondary=69.78 cfs 13.339 af Outflow=69.78 cfs 13.339 af

Pond 2P: Existing Pond Peak Elev=1,086.56' Storage=23.200 af Inflow=354.82 cfs 35.350 af
24.0" Round Culvert n=0.013 L=34.0' S=0.0200 '/' Outflow=37.68 cfs 34.293 af

Pond 3P: Pre-Treatment Basin 2 Peak Elev=1,196.74' Storage=2.049 af Inflow=48.96 cfs 2.782 af
Outflow=1.03 cfs 2.767 af

Pond 4P: Pre-Treatment Basin 1 Peak Elev=1,087.69' Storage=3.646 af Inflow=414.64 cfs 30.926 af
Outflow=307.37 cfs 30.778 af

Pond 5P: infiltration basin 1 Peak Elev=1,085.32' Storage=10.448 af Inflow=37.68 cfs 34.293 af
Discarded=1.20 cfs 6.186 af Primary=28.62 cfs 26.261 af Outflow=29.82 cfs 32.447 af

Pond 6P: Infiltration Basin 2 Peak Elev=1,137.68' Storage=218,051 cf Inflow=168.92 cfs 19.192 af
Discarded=1.17 cfs 4.034 af Primary=142.14 cfs 14.124 af Outflow=143.31 cfs 18.158 af

Pond 7P: Roadway SWM Area #3A Peak Elev=6.83' Storage=29,932 cf Inflow=150.67 cfs 8.962 af
36.0" Round Culvert x 2.00 n=0.013 L=10.0' S=0.0100 '/' Outflow=133.91 cfs 8.873 af

Pond 22P: Pre-Treatment Basin 3 Peak Elev=1,212.59' Storage=98,717 cf Inflow=55.24 cfs 3.233 af
Outflow=1.10 cfs 3.113 af

Pond 23P: Infiltration Basin 3 Peak Elev=1,202.88' Storage=205,782 cf Inflow=72.68 cfs 14.338 af
Discarded=3.84 cfs 9.905 af Primary=26.41 cfs 4.429 af Outflow=30.25 cfs 14.335 af

Total Runoff Area = 784.880 ac Runoff Volume = 244.090 af Average Runoff Depth = 3.73"
92.20% Pervious = 723.650 ac 7.80% Impervious = 61.230 ac

Summary for Subcatchment 1S: to sediment forebay from south

Runoff = 63.23 cfs @ 12.42 hrs, Volume= 8.382 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	3.650	98	road
*	2.530	98	employee parking garage
*	16.350	60	existing forest/field
	22.530	70	Weighted Average
	16.350		72.57% Pervious Area
	6.180		27.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.1	100	0.0100	0.06		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
18.3	550	0.0100	0.50		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
2.3	1,610	0.0255	11.50	36.13	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
47.7	2,260	Total			

Summary for Subcatchment 2S: north of site

Runoff = 418.54 cfs @ 13.03 hrs, Volume= 92.844 af, Depth= 3.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	197.240	60	forest
*	78.560	56	field
*	37.470	85	gravel pit
	313.270	62	Weighted Average
	313.270		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0560	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
78.6	5,578	0.0560	1.18		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
92.2	5,678	Total			

Summary for Subcatchment 3S: Rossini Parcel middle

Runoff = 128.93 cfs @ 12.34 hrs, Volume= 15.678 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	49.870	60	FOREST
*	6.570	56	FIELD
	56.440	60	Weighted Average
	56.440		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
27.8	2,200	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	9.44	66.70	**Pipe Channel, Segment ID:** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013
40.4	2,340	Total			

Summary for Subcatchment 4S: Rossini Parcel north

Runoff = 69.02 cfs @ 12.39 hrs, Volume= 8.903 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	29.310	60	FOREST
*	2.740	56	FIELD
	32.050	60	Weighted Average
	32.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0645	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
30.8	2,350	0.0645	1.27		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
43.8	2,490	Total			

Summary for Subcatchment 5S: Cooke Parcel east

Runoff = 177.72 cfs @ 12.17 hrs, Volume= 16.425 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	44.950	60	FOREST
*	13.490	56	FIELD
*	0.690	98	road
	59.130	60	Weighted Average
	58.440		98.83% Pervious Area
	0.690		1.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0696	0.13		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	1,089	0.0696	1.32		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
26.4	1,229	Total			

Summary for Subcatchment 6S: Rossini Parcel south

Runoff = 73.57 cfs @ 12.18 hrs, Volume= 6.998 af, Depth= 3.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	20.500	60	FOREST
*	5.560	56	FIELD
	26.060	59	Weighted Average
	26.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0550	0.12		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
13.8	972	0.0550	1.17		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	7.20	22.62	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
27.6	1,112	Total			

Summary for Subcatchment 8S: Btwn Cooke/Rossini

Runoff = 74.13 cfs @ 12.53 hrs, Volume= 11.225 af, Depth= 3.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	23.170	60	forest
*	18.290	56	field
*	0.340	98	road
	41.800	59	Weighted Average
	41.460		99.19% Pervious Area
	0.340		0.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0430	0.11		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
39.1	2,432	0.0430	1.04		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
0.1	40	0.0100	9.44	66.70	**Pipe Channel, Segment ID:** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013
54.3	2,572	Total			

Summary for Subcatchment 9S: Gildick Parcel north

[49] Hint: Tc<2dt may require smaller dt

Runoff = 188.27 cfs @ 11.99 hrs, Volume= 11.281 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	33.970	60	forest
*	5.540	56	field
*	1.100	98	road
	40.610	60	Weighted Average
	39.510		97.29% Pervious Area
	1.100		2.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	100	0.1990	0.20		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
3.2	423	0.1990	2.23		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
11.4	523	Total			

Summary for Subcatchment 10S: Gildick Parcel south

[49] Hint: Tc<2dt may require smaller dt

Runoff = 31.50 cfs @ 11.89 hrs, Volume= 1.760 af, Depth= 7.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	2.610	98	road
*	0.290	60	landscaping
	2.900	94	Weighted Average
	0.290		10.00% Pervious Area
	2.610		90.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	2,774	0.0300	12.47	39.18	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
3.7	2,774	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment 11S: gildick parcel south to stream

[49] Hint: Tc<2dt may require smaller dt

Runoff = 150.67 cfs @ 11.99 hrs, Volume= 8.962 af, Depth= 3.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	28.470	60	grassed
*	1.770	98	road
	30.240	62	Weighted Average
	28.470		94.15% Pervious Area
	1.770		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.8	2,367	0.0600	22.37	604.05	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
11.2	2,467	Total			

Summary for Subcatchment 12S: rte 17 east of exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 270.94 cfs @ 11.98 hrs, Volume= 16.031 af, Depth= 4.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	36.150	60	grassed
*	9.270	98	paved road
	45.420	68	Weighted Average
	36.150		79.59% Pervious Area
	9.270		20.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.1400	0.18		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
1.5	3,074	0.1400	34.17	922.71	**Channel Flow, Segment ID:** Area= 27.0 sf Perim= 30.5' r= 0.89' n= 0.015
10.9	3,174	Total			

Summary for Subcatchment 14S: between proposed roads and river

[49] Hint: Tc<2dt may require smaller dt

Runoff = 104.04 cfs @ 11.90 hrs, Volume= 5.106 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	18.380	60	existing undeveloped land
	18.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Segment ID:**

Summary for Subcatchment 15S: casino roof runoff

[49] Hint: Tc<2dt may require smaller dt

Runoff = 78.10 cfs @ 11.89 hrs, Volume= 4.572 af, Depth= 7.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	7.070	98	casino roof runoff
	7.070		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Segment ID:**

Summary for Subcatchment 16S: direct entry to basins

[49] Hint: Tc<2dt may require smaller dt

Runoff = 129.94 cfs @ 11.89 hrs, Volume= 6.680 af, Depth= 5.98"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	2.630	98	parking lot
*	5.330	98	WQ basins
*	5.450	60	landscaped around basins
	13.410	83	Weighted Average
	5.450		40.64% Pervious Area
	7.960		59.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Segment ID:**

Summary for Subcatchment 17S: Gildick Parcel south - undeveloped

Runoff = 71.14 cfs @ 12.38 hrs, Volume= 9.125 af, Depth= 3.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	15.640	60	field
*	17.500	56	FOREST
*	0.840	98	infiltration basin 2
	33.980	59	Weighted Average
	33.140		97.53% Pervious Area
	0.840		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0770	0.14		**Sheet Flow, Segment ID:** Woods: Light underbrush n= 0.400 P2= 3.50"
31.1	2,589	0.0770	1.39		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
43.1	2,689	Total			

Summary for Subcatchment 18S: gildick parcel middle west

[49] Hint: Tc<2dt may require smaller dt

Runoff = 60.45 cfs @ 11.99 hrs, Volume= 3.622 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	13.040	60	field
	13.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1610	0.41		**Sheet Flow, Segment ID:** Grass: Short n= 0.150 P2= 3.50"
7.3	875	0.1610	2.01		**Shallow Concentrated Flow, Segment ID:** Woodland Kv= 5.0 fps
11.4	975	Total			

Summary for Subcatchment 19S: warehouse area to pond 3

[49] Hint: Tc<2dt may require smaller dt

Runoff = 17.45 cfs @ 11.89 hrs, Volume= 1.022 af, Depth= 7.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	0.360	98	parking/road
*	0.700	98	warehouse
*	0.520	98	sediment forebay 2
	1.580	98	Weighted Average
	1.580		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0100	1.09		**Sheet Flow, Segment ID:** Smooth surfaces n= 0.011 P2= 3.50"
1.4	389	0.0100	4.54	3.56	**Pipe Channel, Segment ID:** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
2.9	489	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment 20S: to sediment forebay from north

[49] Hint: Tc<2dt may require smaller dt

Runoff = 229.16 cfs @ 11.89 hrs, Volume= 12.242 af, Depth= 6.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	0.400	98	hotel
*	6.940	98	parking garage by casino
*	2.290	98	parking garage by basins
*	5.150	60	landscaped
*	6.300	98	road
*	0.890	98	storage area
	21.970	89	Weighted Average
	5.150		23.44% Pervious Area
	16.820		76.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0190	1.41		**Sheet Flow, Segment ID:** Smooth surfaces n= 0.011 P2= 3.50"
3.6	2,136	0.0190	9.93	31.18	**Pipe Channel, Segment ID:** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
4.8	2,236	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment 21S: (new Subcat)

[49] Hint: Tc<2dt may require smaller dt

Runoff = 55.24 cfs @ 11.89 hrs, Volume= 3.233 af, Depth= 7.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	5.000	98	
	5.000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 1R: Discharge Point, DP-1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 784.880 ac, 7.80% Impervious, Inflow Depth = 3.28" for 100 YR event
Inflow = 746.25 cfs @ 12.77 hrs, Volume= 214.712 af
Outflow = 746.25 cfs @ 12.77 hrs, Volume= 214.712 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Summary for Reach 2R: wetland 1 to stream

[65] Warning: Inlet elevation not specified

Inflow = 69.78 cfs @ 12.47 hrs, Volume= 13.339 af
Outflow = 66.15 cfs @ 12.74 hrs, Volume= 13.339 af, Atten= 5%, Lag= 15.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 5.77 fps, Min. Travel Time= 8.1 min
Avg. Velocity = 1.61 fps, Avg. Travel Time= 29.0 min

Peak Storage= 32,300 cf @ 12.60 hrs, Average Depth at Peak Storage= 0.38'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,973.89 cfs

30.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 33.00'
Length= 2,800.0' Slope= 0.1400 '/'
Inlet Invert= 0.00', Outlet Invert= -392.00'

Summary for Reach 3R: culvert under 161 to stream

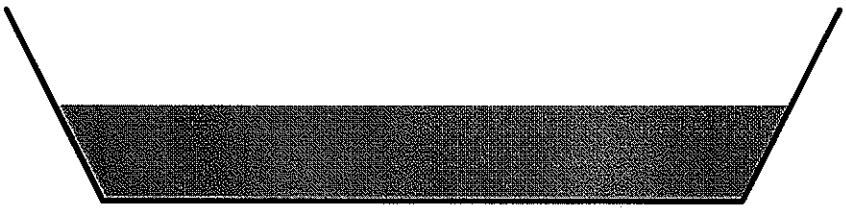
[65] Warning: Inlet elevation not specified

Inflow Area = 56.440 ac, 0.00% Impervious, Inflow Depth = 3.33" for 100 YR event
Inflow = 128.93 cfs @ 12.34 hrs, Volume= 15.678 af
Outflow = 119.57 cfs @ 12.59 hrs, Volume= 15.678 af, Atten= 7%, Lag= 15.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 7.50 fps, Min. Travel Time= 8.3 min
Avg. Velocity = 1.72 fps, Avg. Travel Time= 36.0 min

Peak Storage= 59,965 cf @ 12.44 hrs, Average Depth at Peak Storage= 1.50'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 371.77 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 3,715.0' Slope= 0.0500 '/'
Inlet Invert= 0.00', Outlet Invert= -185.75'



Summary for Reach 4R: culvert under 161 to stream

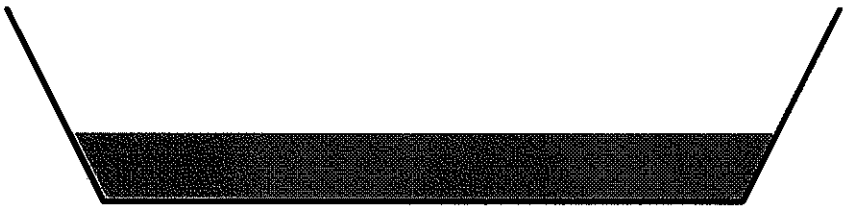
[65] Warning: Inlet elevation not specified

Inflow Area =	32.050 ac,	0.00% Impervious,	Inflow Depth =	3.33"	for 100 YR event
Inflow =	69.02 cfs @	12.39 hrs, Volume=	8.903 af		
Outflow =	64.87 cfs @	12.64 hrs, Volume=	8.903 af,	Atten= 6%,	Lag= 14.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 5.80 fps, Min. Travel Time= 8.5 min
Avg. Velocity = 1.44 fps, Avg. Travel Time= 34.1 min

Peak Storage= 33,263 cf @ 12.49 hrs, Average Depth at Peak Storage= 1.07'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 344.77 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 2,940.0' Slope= 0.0430 '/'
Inlet Invert= 0.00', Outlet Invert= -126.42'



Summary for Reach 6R: culvert under 161 to wetland 1

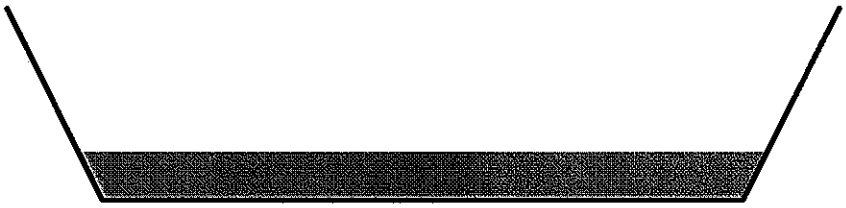
[65] Warning: Inlet elevation not specified

Inflow Area = 26.060 ac, 0.00% Impervious, Inflow Depth = 3.22" for 100 YR event
Inflow = 73.57 cfs @ 12.18 hrs, Volume= 6.998 af
Outflow = 72.51 cfs @ 12.21 hrs, Volume= 6.998 af, Atten= 1%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 9.48 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 2.84 fps, Avg. Travel Time= 3.3 min

Peak Storage= 4,442 cf @ 12.20 hrs, Average Depth at Peak Storage= 0.75'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 695.54 cfs

10.00' x 3.00' deep channel, n= 0.050
Side Slope Z-value= 0.5 '/' Top Width= 13.00'
Length= 571.0' Slope= 0.1750 '/'
Inlet Invert= 0.00', Outlet Invert= -99.93'



Summary for Reach 7R: Prop. swale 1 btwn wetlands 1 & 2

Inflow Area = 66.670 ac, 1.65% Impervious, Inflow Depth = 0.00" for 100 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs, Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 381.51 cfs

7.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 10.00'
Length= 325.0' Slope= 0.0277 '/'
Inlet Invert= 1,107.00', Outlet Invert= 1,098.00'

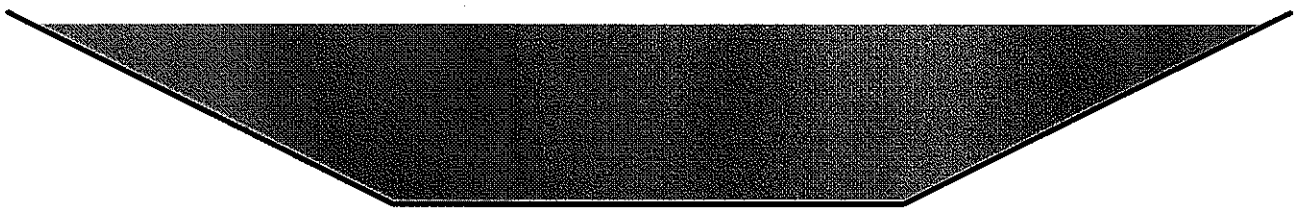
Summary for Reach 10R: prop. swale 2 by main road

Inflow Area = 59.130 ac, 1.17% Impervious, Inflow Depth = 3.33" for 100 YR event
Inflow = 177.72 cfs @ 12.17 hrs, Volume= 16.425 af
Outflow = 167.94 cfs @ 12.31 hrs, Volume= 16.425 af, Atten= 6%, Lag= 8.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 4.49 fps, Min. Travel Time= 4.4 min
Avg. Velocity = 1.13 fps, Avg. Travel Time= 17.3 min

Peak Storage= 45,019 cf @ 12.23 hrs, Average Depth at Peak Storage= 2.81'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 195.65 cfs

8.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 20.00'
Length= 1,175.0' Slope= 0.0025 '/'
Inlet Invert= 1,142.94', Outlet Invert= 1,140.00'



Summary for Reach 11R: stream after forebay 2

[65] Warning: Inlet elevation not specified
[79] Warning: Submerged Pond 7P Primary device # 1 INLET by 0.31'

Inflow Area = 30.240 ac, 5.85% Impervious, Inflow Depth = 3.52" for 100 YR event
Inflow = 133.91 cfs @ 12.02 hrs, Volume= 8.873 af
Outflow = 131.00 cfs @ 12.03 hrs, Volume= 8.873 af, Atten= 2%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 27.19 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 5.75 fps, Avg. Travel Time= 1.6 min

Peak Storage= 2,730 cf @ 12.03 hrs, Average Depth at Peak Storage= 1.33'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 526.90 cfs

3.00' x 3.00' deep channel, n= 0.015
Side Slope Z-value= 0.5 '/' Top Width= 6.00'
Length= 560.0' Slope= 0.1000 '/'
Inlet Invert= 0.00', Outlet Invert= -56.00'

Summary for Reach 12R: stream to Neversink River

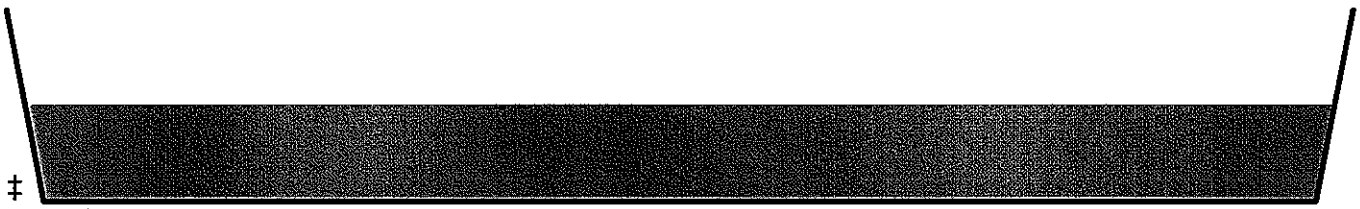
[65] Warning: Inlet elevation not specified

Inflow Area = 401.760 ac, 0.00% Impervious, Inflow Depth = 3.91" for 100 YR event
Inflow = 606.51 cfs @ 12.82 hrs, Volume= 130.763 af
Outflow = 603.53 cfs @ 12.88 hrs, Volume= 130.763 af, Atten= 0%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 7.58 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 1.49 fps, Avg. Travel Time= 11.2 min

Peak Storage= 79,930 cf @ 12.84 hrs, Average Depth at Peak Storage= 1.52'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 1,865.25 cfs

52.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 55.00'
Length= 1,000.0' Slope= 0.0100 '/'
Inlet Invert= 0.00', Outlet Invert= -10.00'



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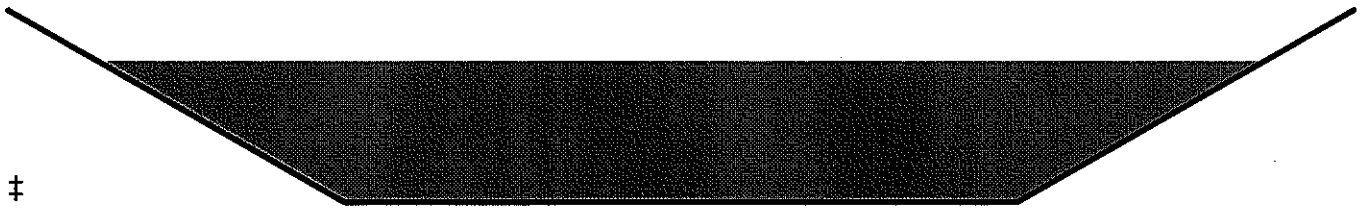
Summary for Reach 24R: Proposed Swale 3

Inflow Area = 41.800 ac, 0.81% Impervious, Inflow Depth = 3.22" for 100 YR event
Inflow = 74.13 cfs @ 12.53 hrs, Volume= 11.225 af
Outflow = 71.61 cfs @ 12.75 hrs, Volume= 11.225 af, Atten= 3%, Lag= 13.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 4.48 fps, Min. Travel Time= 7.3 min
Avg. Velocity = 1.10 fps, Avg. Travel Time= 29.8 min

Peak Storage= 31,716 cf @ 12.62 hrs, Average Depth at Peak Storage= 1.47'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 127.26 cfs

8.00' x 2.00' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 1,975.0' Slope= 0.0050 '/'
Inlet Invert= 1,214.88', Outlet Invert= 1,205.00'



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Summary for Pond 1P: wetlands on Gildick Parcel

Inflow Area =	66.670 ac,	1.65% Impervious,	Inflow Depth =	3.29"	for 100 YR event
Inflow =	225.89 cfs @	12.01 hrs,	Volume=	18.279 af	
Outflow =	69.78 cfs @	12.47 hrs,	Volume=	13.339 af,	Atten= 69%, Lag= 27.8 min
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	
Secondary =	69.78 cfs @	12.47 hrs,	Volume=	13.339 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Peak Elev= 1,106.61' @ 12.47 hrs Surf.Area= 4.696 ac Storage= 7.272 af

Plug-Flow detention time= 197.5 min calculated for 13.339 af (73% of inflow)
Center-of-Mass det. time= 92.8 min (945.5 - 852.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,103.40'	15.137 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,103.40	0.000	0.000	0.000
1,104.00	0.490	0.147	0.147
1,106.00	3.170	3.660	3.807
1,108.00	8.160	11.330	15.137

Device	Routing	Invert	Outlet Devices
#1	Secondary	1,106.20'	**80.0' long Broad-Crested Rectangular Weir** Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00 Coef. (English) 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30
#2	Primary	1,107.30'	**50.0' long Broad-Crested Rectangular Weir** Head (feet) 0.50 1.00 1.50 2.00 2.50 3.00 4.00 5.00 Coef. (English) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,103.40' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=69.19 cfs @ 12.47 hrs HW=1,106.61' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 69.19 cfs @ 2.11 fps)

Summary for Pond 2P: Existing Pond

[81] Warning: Exceeded Pond 4P by 6.63' @ 14.20 hrs

Inflow Area =	144.690 ac,	27.04% Impervious,	Inflow Depth =	2.93"	for 100 YR event
Inflow =	354.82 cfs @	11.96 hrs,	Volume=	35.350 af	
Outflow =	37.68 cfs @	13.46 hrs,	Volume=	34.293 af,	Atten= 89%, Lag= 89.6 min
Primary =	37.68 cfs @	13.46 hrs,	Volume=	34.293 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Starting Elev= 1,077.00' Surf.Area= 0.892 ac Storage= 4.900 af
Peak Elev= 1,086.56' @ 13.46 hrs Surf.Area= 3.589 ac Storage= 23.200 af (18.300 af above start)
Flood Elev= 1,090.00' Surf.Area= 3.970 ac Storage= 28.530 af (23.630 af above start)

Plug-Flow detention time= 375.5 min calculated for 29.393 af (83% of inflow)
Center-of-Mass det. time= 241.5 min (1,054.1 - 812.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,070.00'	28.530 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,070.00	0.220	0.000	0.000
1,080.00	1.180	7.000	7.000
1,082.00	1.940	3.120	10.120
1,084.00	2.810	4.750	14.870
1,086.00	3.440	6.250	21.120
1,088.00	3.970	7.410	28.530

Device	Routing	Invert	Outlet Devices
#1	Primary	1,078.50'	**24.0" Round Culvert** L= 34.0' Ke= 0.600 Outlet Invert= 1,077.82' S= 0.0200 '/' Cc= 0.900 n= 0.013

Primary OutFlow Max=37.68 cfs @ 13.46 hrs HW=1,086.56' (Free Discharge)
└**1=Culvert** (Inlet Controls 37.68 cfs @ 11.99 fps)

Summary for Pond 3P: Pre-Treatment Basin 2

Inflow Area =	4.480 ac, 93.53% Impervious, Inflow Depth = 7.45" for 100 YR event				
Inflow =	48.96 cfs @	11.89 hrs,	Volume=	2.782 af	
Outflow =	1.03 cfs @	15.23 hrs,	Volume=	2.767 af,	Atten= 98%, Lag= 200.5 min
Primary =	1.03 cfs @	15.23 hrs,	Volume=	2.767 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 2
Starting Elev= 1,190.60' Surf.Area= 0.199 ac Storage= 0.156 af
Peak Elev= 1,196.74' @ 15.23 hrs Surf.Area= 0.398 ac Storage= 2.049 af (1.893 af above start)

Plug-Flow detention time= 1,042.3 min calculated for 2.611 af (94% of inflow)
Center-of-Mass det. time= 935.9 min (1,682.0 - 746.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,190.00'	3.622 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,190.00	0.180	0.000	0.000
1,195.00	0.340	1.300	1.300
1,200.40	0.520	2.322	3.622

Device	Routing	Invert	Outlet Devices
#1	Primary	1,190.50'	**12.0" Round Culvert** L= 352.0' Ke= 0.600 Outlet Invert= 1,136.29' S= 0.1540 '/' Cc= 0.900 n= 0.013
#2	Device 1	1,190.60'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	1,199.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600

Limited to weir flow at low heads

Primary OutFlow Max=1.03 cfs @ 15.23 hrs HW=1,196.74' (Free Discharge)
└─**1=Culvert** (Passes 1.03 cfs of 8.50 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.03 cfs @ 11.77 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 4P: Pre-Treatment Basin 1

Inflow Area =	70.950 ac, 43.64% Impervious, Inflow Depth = 5.23" for 100 YR event				
Inflow =	414.64 cfs @	11.90 hrs, Volume=	30.926 af		
Outflow =	307.37 cfs @	11.98 hrs, Volume=	30.778 af, Atten= 26%, Lag= 5.0 min		
Primary =	307.37 cfs @	11.98 hrs, Volume=	30.778 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,087.69' @ 11.98 hrs Surf.Area= 0.514 ac Storage= 3.646 af

Plug-Flow detention time= 21.9 min calculated for 30.778 af (100% of inflow)
Center-of-Mass det. time= 17.3 min (824.4 - 807.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,077.90'	3.885 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,077.90	0.000	0.000	0.000
1,078.00	0.240	0.012	0.012
1,084.00	0.400	1.920	1.932
1,088.20	0.530	1.953	3.885

Device	Routing	Invert	Outlet Devices
#1	Primary	1,078.50'	**36.0" Round Culvert X 2.00** L= 29.0' Ke= 0.600 Outlet Invert= 1,077.92' S= 0.0200 '/' Cc= 0.900 n= 0.013
#2	Primary	1,086.10'	**25.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=295.72 cfs @ 11.98 hrs HW=1,087.59' (Free Discharge)
├─**1=Culvert** (Inlet Controls 175.82 cfs @ 12.44 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 119.90 cfs @ 3.22 fps)

Summary for Pond 5P: infiltration basin 1

[81] Warning: Exceeded Pond 2P by 3.05' @ 23.50 hrs

Inflow Area =	144.690 ac, 27.04% Impervious, Inflow Depth > 2.84" for 100 YR event				
Inflow =	37.68 cfs @	13.46 hrs, Volume=	34.293 af		
Outflow =	29.82 cfs @	19.02 hrs, Volume=	32.447 af, Atten= 21%, Lag= 333.7 min		
Discarded =	1.20 cfs @	10.10 hrs, Volume=	6.186 af		
Primary =	28.62 cfs @	19.02 hrs, Volume=	26.261 af		

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,085.32' @ 19.02 hrs Surf.Area= 1.140 ac Storage= 10.448 af

Plug-Flow detention time= 424.5 min calculated for 32.447 af (95% of inflow)
Center-of-Mass det. time= 391.9 min (1,446.0 - 1,054.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,074.00'	13.580 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,074.00	0.700	0.000	0.000
1,084.00	1.080	8.900	8.900
1,088.00	1.260	4.680	13.580

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,074.00'	**1.20 cfs Exfiltration when above 1,074.00'**
#2	Primary	1,080.25'	**24.0" Round Culvert** L= 153.0' Ke= 0.600
			Outlet Invert= 1,074.02' S= 0.0407 '/' Cc= 0.900 n= 0.013

Discarded OutFlow Max=1.20 cfs @ 10.10 hrs HW=1,074.17' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 1.20 cfs)

Primary OutFlow Max=28.62 cfs @ 19.02 hrs HW=1,085.32' (Free Discharge)
└**2=Culvert** (Inlet Controls 28.62 cfs @ 9.11 fps)

Summary for Pond 6P: Infiltration Basin 2

[79] Warning: Submerged Pond 3P Primary device # 1 OUTLET by 1.31'

Inflow Area =	63.610 ac,	7.67% Impervious,	Inflow Depth =	3.62"	for 100 YR event
Inflow =	168.92 cfs @	12.31 hrs,	Volume=	19.192 af	
Outflow =	143.31 cfs @	12.45 hrs,	Volume=	18.158 af,	Atten= 15%, Lag= 8.4 min
Discarded =	1.17 cfs @	12.45 hrs,	Volume=	4.034 af	
Primary =	142.14 cfs @	12.45 hrs,	Volume=	14.124 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Starting Elev= 1,131.80' Surf.Area= 24,618 sf Storage= 44,810 cf
Peak Elev= 1,137.68' @ 12.45 hrs Surf.Area= 33,241 sf Storage= 218,051 cf (173,241 cf above start)

Plug-Flow detention time= 383.8 min calculated for 17.106 af (89% of inflow)
Center-of-Mass det. time= 227.9 min (1,216.0 - 988.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,130.00'	292,856 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,130.00	22,128	0	0
1,134.00	27,661	99,578	99,578
1,140.00	36,765	193,278	292,856

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,130.00'	**4.560 in/hr Exfiltration over Surface area above 1,130.00'** Excluded Surface area = 22,128 sf
#2	Primary	1,130.00'	**36.0" Round Culvert X 2.00** L= 46.0' Ke= 0.600 Outlet Invert= 1,124.50' S= 0.1196 '/' Cc= 0.900 n= 0.013
#3	Primary	1,137.00'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#4	Device 2	1,135.50'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=1.16 cfs @ 12.45 hrs HW=1,137.59' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 1.16 cfs)

Primary OutFlow Max=131.83 cfs @ 12.45 hrs HW=1,137.59' (Free Discharge)
├─**2=Culvert** (Passes 94.89 cfs of 157.53 cfs potential flow)
│ └─**4=Sharp-Crested Rectangular Weir** (Weir Controls 94.89 cfs @ 4.73 fps)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 36.94 cfs @ 2.08 fps)

Summary for Pond 7P: Roadway SWM Area #3A

[93] Warning: Storage range exceeded by 0.83'

Inflow Area =	30.240 ac,	5.85% Impervious,	Inflow Depth =	3.56"	for 100 YR event
Inflow =	150.67 cfs @	11.99 hrs,	Volume=	8.962 af	
Outflow =	133.91 cfs @	12.02 hrs,	Volume=	8.873 af,	Atten= 11%, Lag= 2.2 min
Primary =	133.91 cfs @	12.02 hrs,	Volume=	8.873 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Peak Elev= 6.83' @ 12.02 hrs Surf.Area= 6,727 sf Storage= 29,932 cf

Plug-Flow detention time= 16.6 min calculated for 8.873 af (99% of inflow)
Center-of-Mass det. time= 8.8 min (849.1 - 840.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	29,932 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	3,387	0	0
2.00	4,398	7,785	7,785
4.00	5,511	9,909	17,694
6.00	6,727	12,238	29,932

Device	Routing	Invert	Outlet Devices
#1	Primary	1.00'	**36.0" Round Culvert X 2.00** L= 10.0' Ke= 0.600 Outlet Invert= 0.90' S= 0.0100 '/' Cc= 0.900 n= 0.013

Primary OutFlow Max=128.24 cfs @ 12.02 hrs HW=6.54' (Free Discharge)
└─**1=Culvert** (Inlet Controls 128.24 cfs @ 9.07 fps)

Summary for Pond 22P: Pre-Treatment Basin 3

Inflow Area =	5.000 ac,100.00% Impervious, Inflow Depth = 7.76" for 100 YR event				
Inflow =	55.24 cfs @	11.89 hrs,	Volume=	3.233 af	
Outflow =	1.10 cfs @	15.42 hrs,	Volume=	3.113 af,	Atten= 98%, Lag= 211.9 min
Primary =	1.10 cfs @	15.42 hrs,	Volume=	3.113 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,212.59' @ 15.42 hrs Surf.Area= 18,792 sf Storage= 98,717 cf

Plug-Flow detention time= 1,025.3 min calculated for 3.109 af (96% of inflow)
Center-of-Mass det. time= 1,004.4 min (1,737.4 - 733.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,205.00'	148,931 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,205.00	7,689	0	0
1,207.00	10,290	17,979	17,979
1,209.00	13,210	23,500	41,479
1,211.00	16,177	29,387	70,866
1,213.00	19,460	35,637	106,503
1,215.00	22,968	42,428	148,931

Device	Routing	Invert	Outlet Devices
#1	Primary	1,205.50'	**24.0" Round Culvert** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 1,200.50' S= 0.0500 '/' Cc= 0.900 n= 0.013
#2	Device 1	1,205.60'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	1,214.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.10 cfs @ 15.42 hrs HW=1,212.59' (Free Discharge)
└─**1=Culvert** (Passes 1.10 cfs of 37.34 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.10 cfs @ 12.58 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 23P: Infiltration Basin 3

[79] Warning: Submerged Pond 22P Primary device # 1 OUTLET by 2.38'

Inflow Area =	46.800 ac, 11.41% Impervious, Inflow Depth > 3.68" for 100 YR event				
Inflow =	72.68 cfs @	12.75 hrs,	Volume=	14.338 af	
Outflow =	30.25 cfs @	13.53 hrs,	Volume=	14.335 af,	Atten= 58%, Lag= 47.0 min
Discarded =	3.84 cfs @	13.53 hrs,	Volume=	9.905 af	
Primary =	26.41 cfs @	13.53 hrs,	Volume=	4.429 af	

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3

Peak Elev= 1,202.88' @ 13.53 hrs Surf.Area= 36,363 sf Storage= 205,782 cf

Plug-Flow detention time= 416.6 min calculated for 14.335 af (100% of inflow)
Center-of-Mass det. time= 415.9 min (1,503.0 - 1,087.2)

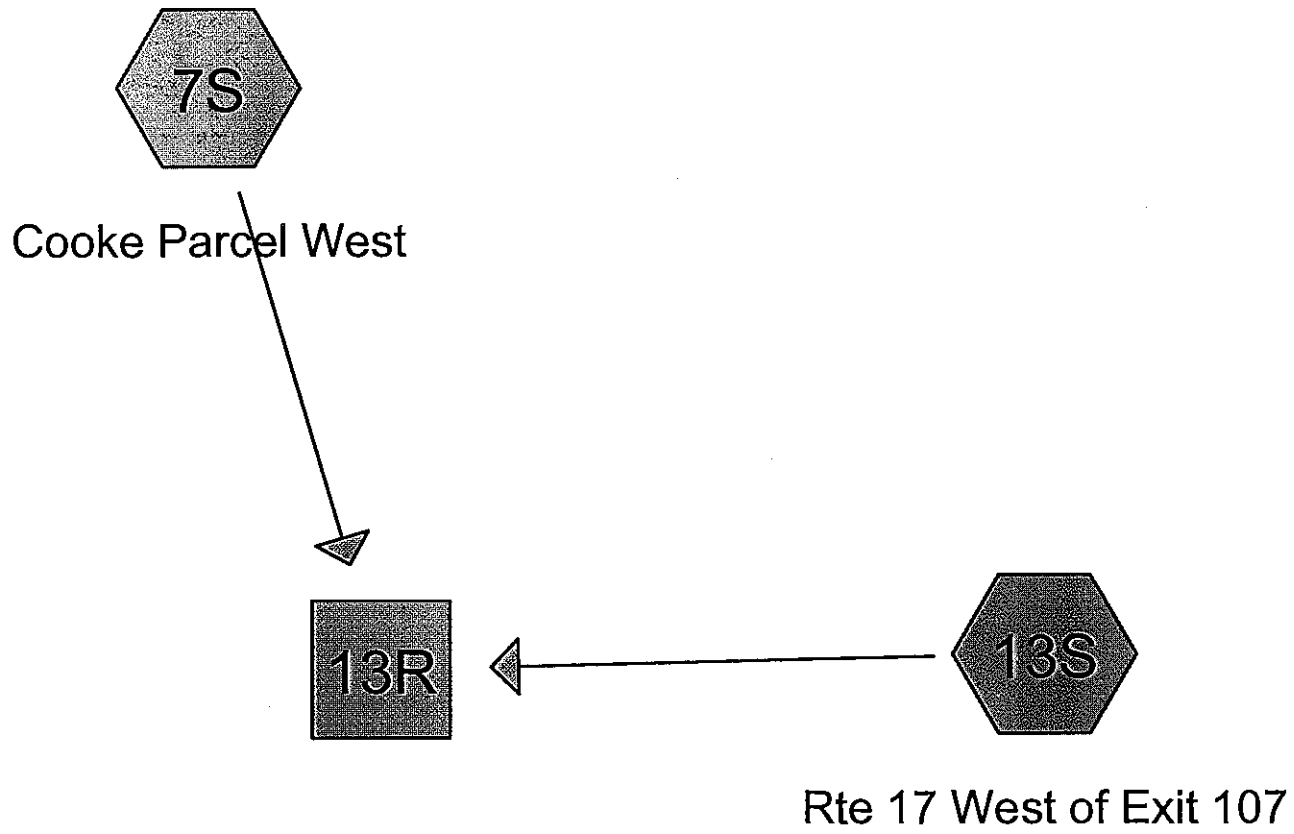
Volume	Invert	Avail.Storage	Storage Description
#1	1,195.00'	290,262 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

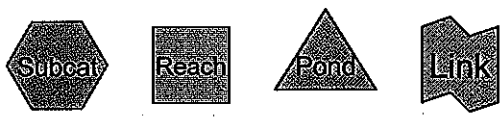
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,195.00	17,221	0	0
1,197.00	21,366	38,587	38,587
1,199.00	25,880	47,246	85,833
1,201.00	30,922	56,802	142,635
1,203.00	36,720	67,642	210,277
1,205.00	43,265	79,985	290,262

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,195.00'	**4.560 in/hr Exfiltration over Surface area**
#2	Primary	1,195.00'	**36.0" Round Culvert**
			L= 100.0' CPP, end-section conforming to fill, Ke= 0.500
			Outlet Invert= 1,185.00' S= 0.1000 '/' Cc= 0.900 n= 0.013
#3	Primary	1,203.25'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#4	Device 2	1,202.00'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=3.84 cfs @ 13.53 hrs HW=1,202.87' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 3.84 cfs)

Primary OutFlow Max=26.19 cfs @ 13.53 hrs HW=1,202.87' (Free Discharge)
├─**2=Culvert** (Passes 26.19 cfs of 85.92 cfs potential flow)
│ └─**4=Sharp-Crested Rectangular Weir** (Weir Controls 26.19 cfs @ 3.05 fps)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)





Drainage Diagram for Trading Cove - Proposed Conditions Reach 13
Prepared by Tetra Tech
HydroCAD® 9.00 s/n 00983 © 2009 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
322.330	60	Grassed (7S, 13S)
6.480	98	Paved Road (13S)
1.340	98	Road (7S)
330.150		**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Goup	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
330.150	Other	7S, 13S
330.150		**TOTAL AREA**

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 7S: Cooke Parcel West Runoff Area=300.850 ac 0.45% Impervious Runoff Depth=0.33"
Flow Length=3,723' Slope=0.0330 '/' Tc=83.3 min CN=60 Runoff=24.71 cfs 8.357 af

Subcatchment 13S: Rte 17 West of Exit Runoff Area=29.300 ac 22.12% Impervious Runoff Depth=0.63"
Tc=5.0 min CN=68 Runoff=30.34 cfs 1.530 af

Reach 13R: Inflow=30.37 cfs 9.887 af
Outflow=30.37 cfs 9.887 af

Total Runoff Area = 330.150 ac Runoff Volume = 9.887 af Average Runoff Depth = 0.36"
97.63% Pervious = 322.330 ac 2.37% Impervious = 7.820 ac

Summary for Subcatchment 7S: Cooke Parcel West

Runoff = 24.71 cfs @ 13.23 hrs, Volume= 8.357 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	299.510	60	Grassed
*	1.340	98	Road
	300.850	60	Weighted Average
	299.510		99.55% Pervious Area
	1.340		0.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0330	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.50"
66.5	3,623	0.0330	0.91		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
83.3	3,723	Total			

Summary for Subcatchment 13S: Rte 17 West of Exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 30.34 cfs @ 11.97 hrs, Volume= 1.530 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 YR Rainfall=3.00"

	Area (ac)	CN	Description
*	22.820	60	Grassed
*	6.480	98	Paved Road
	29.300	68	Weighted Average
	22.820		77.88% Pervious Area
	6.480		22.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 13R:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 330.150 ac, 2.37% Impervious, Inflow Depth = 0.36" for 1 YR event
Inflow = 30.37 cfs @ 11.97 hrs, Volume= 9.887 af
Outflow = 30.37 cfs @ 11.97 hrs, Volume= 9.887 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 7S: Cooke Parcel West Runoff Area=300.850 ac 0.45% Impervious Runoff Depth=0.53"
Flow Length=3,723' Slope=0.0330 '/' Tc=83.3 min CN=60 Runoff=46.15 cfs 13.324 af

Subcatchment 13S: Rte 17 West of Exit Runoff Area=29.300 ac 22.12% Impervious Runoff Depth=0.90"
Tc=5.0 min CN=68 Runoff=45.60 cfs 2.201 af

Reach 13R: Inflow=49.08 cfs 15.524 af
Outflow=49.08 cfs 15.524 af

Total Runoff Area = 330.150 ac Runoff Volume = 15.524 af Average Runoff Depth = 0.56"
97.63% Pervious = 322.330 ac 2.37% Impervious = 7.820 ac

Summary for Subcatchment 7S: Cooke Parcel West

Runoff = 46.15 cfs @ 13.12 hrs, Volume= 13.324 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	299.510	60	Grassed
*	1.340	98	Road
	300.850	60	Weighted Average
	299.510		99.55% Pervious Area
	1.340		0.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0330	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.50"
66.5	3,623	0.0330	0.91		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
83.3	3,723	Total			

Summary for Subcatchment 13S: Rte 17 West of Exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 45.60 cfs @ 11.97 hrs, Volume= 2.201 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YR Rainfall=3.50"

	Area (ac)	CN	Description
*	22.820	60	Grassed
*	6.480	98	Paved Road
	29.300	68	Weighted Average
	22.820		77.88% Pervious Area
	6.480		22.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 13R:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 330.150 ac, 2.37% Impervious, Inflow Depth = 0.56" for 2 YR event
Inflow = 49.08 cfs @ 13.10 hrs, Volume= 15.524 af
Outflow = 49.08 cfs @ 13.10 hrs, Volume= 15.524 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 7S: Cooke Parcel West Runoff Area=300.850 ac 0.45% Impervious Runoff Depth=1.30"
Flow Length=3,723' Slope=0.0330 '/' Tc=83.3 min CN=60 Runoff=140.66 cfs 32.619 af

Subcatchment 13S: Rte 17 West of Exit Runoff Area=29.300 ac 22.12% Impervious Runoff Depth=1.88"
Tc=5.0 min CN=68 Runoff=98.93 cfs 4.589 af

Reach 13R: Inflow=146.41 cfs 37.208 af
Outflow=146.41 cfs 37.208 af

Total Runoff Area = 330.150 ac Runoff Volume = 37.208 af Average Runoff Depth = 1.35"
97.63% Pervious = 322.330 ac 2.37% Impervious = 7.820 ac

Summary for Subcatchment 7S: Cooke Parcel West

Runoff = 140.66 cfs @ 13.04 hrs, Volume= 32.619 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	299.510	60	Grassed
*	1.340	98	Road
	300.850	60	Weighted Average
	299.510		99.55% Pervious Area
	1.340		0.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0330	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.50"
66.5	3,623	0.0330	0.91		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
83.3	3,723	Total			

Summary for Subcatchment 13S: Rte 17 West of Exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 98.93 cfs @ 11.96 hrs, Volume= 4.589 af, Depth= 1.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YR Rainfall=5.00"

	Area (ac)	CN	Description
*	22.820	60	Grassed
*	6.480	98	Paved Road
	29.300	68	Weighted Average
	22.820		77.88% Pervious Area
	6.480		22.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 13R:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 330.150 ac, 2.37% Impervious, Inflow Depth = 1.35" for 10 YR event
Inflow = 146.41 cfs @ 13.04 hrs, Volume= 37.208 af
Outflow = 146.41 cfs @ 13.04 hrs, Volume= 37.208 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 7S: Cooke Parcel West Runoff Area=300.850 ac 0.45% Impervious Runoff Depth=3.33"
Flow Length=3,723' Slope=0.0330 '/' Tc=83.3 min CN=60 Runoff=403.62 cfs 83.569 af

Subcatchment 13S: Rte 17 West of Exit Runoff Area=29.300 ac 22.12% Impervious Runoff Depth=4.24"
Tc=5.0 min CN=68 Runoff=222.50 cfs 10.341 af

Reach 13R: Inflow=415.83 cfs 93.911 af
Outflow=415.83 cfs 93.911 af

Total Runoff Area = 330.150 ac Runoff Volume = 93.911 af Average Runoff Depth = 3.41"
97.63% Pervious = 322.330 ac 2.37% Impervious = 7.820 ac

Summary for Subcatchment 7S: Cooke Parcel West

Runoff = 403.62 cfs @ 12.97 hrs, Volume= 83.569 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	299.510	60	Grassed
*	1.340	98	Road
	300.850	60	Weighted Average
	299.510		99.55% Pervious Area
	1.340		0.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0330	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.50"
66.5	3,623	0.0330	0.91		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
83.3	3,723	Total			

Summary for Subcatchment 13S: Rte 17 West of Exit 107

[49] Hint: Tc<2dt may require smaller dt

Runoff = 222.50 cfs @ 11.96 hrs, Volume= 10.341 af, Depth= 4.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 YR Rainfall=8.00"

	Area (ac)	CN	Description
*	22.820	60	Grassed
*	6.480	98	Paved Road
	29.300	68	Weighted Average
	22.820		77.88% Pervious Area
	6.480		22.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 13R:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 330.150 ac, 2.37% Impervious, Inflow Depth = 3.41" for 100 YR event
Inflow = 415.83 cfs @ 12.96 hrs, Volume= 93.911 af
Outflow = 415.83 cfs @ 12.96 hrs, Volume= 93.911 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

NYS SPDES Water Quality Volume (WQv) Calculator

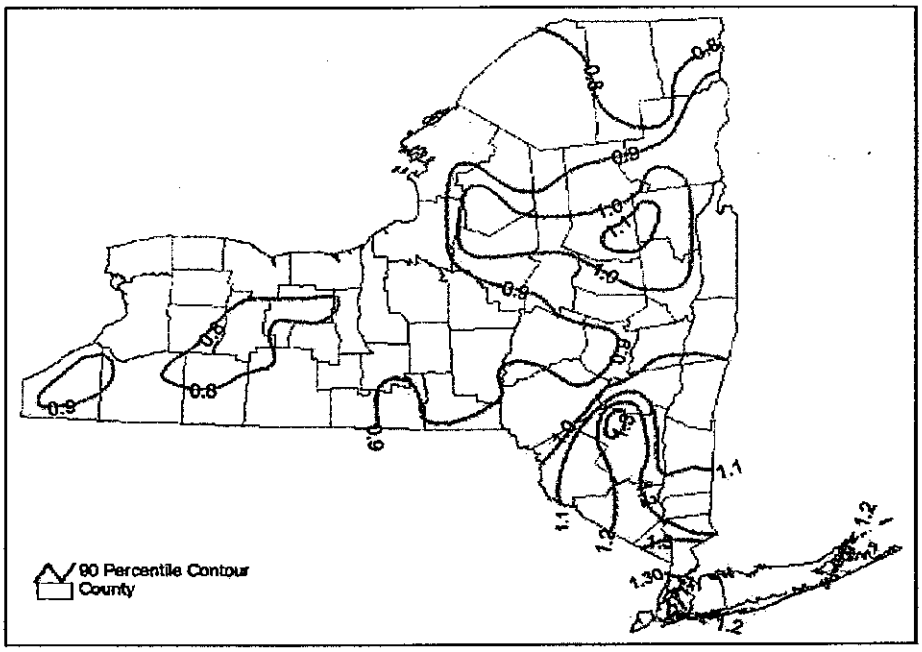
Project Number:	127-3478-10001	
Project:	Trading Cove	Pre-Treatment Basin #1
Location:	Thompson, NY	
Date:	August 1, 2010	

P =	1.15	90% Rainfall Event Number (see Figure 4.1, Chapter 4, Page 2, New York Stormwater Design Manual)
I =	44%	[illegible]
Rv =	0.44	0.05+0.009 I, where I = percent impervious cover (%) (Minimum Rv = 0.2)
A =	70.55	[illegible] 0.11691 [illegible]

Formula: WQv = (P x Rv x A)/12

WQv=	2.8773	Acre-Feet	125333	Cu Ft	100% Req. If *New* Construction
			or		
WQv=	0.7193	Acre-Feet	31333	Cu Ft	25% Req. If Redevelopment

Figure 4.1 90% Rainfall In New York State



Summary for Pond 4P: Pre-Treatment Basin 1

Inflow Area = 70.950 ac, 43.64% Impervious, Inflow Depth = 1.15" for 1 YR event
Inflow = 104.24 cfs @ 11.90 hrs, Volume= 6.798 af
Outflow = 17.98 cfs @ 12.48 hrs, Volume= 3.890 af, Atten= 83%, Lag= 34.9 min
Primary = 17.98 cfs @ 12.48 hrs, Volume= 3.890 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,086.51' @ 12.48 hrs Surf.Area= 0.478 ac Storage= 3.100 af > 2.8 AC.FT REQ'D ✓

Plug-Flow detention time= 243.2 min calculated for 3.885 af (57% of inflow)
Center-of-Mass det. time= 116.6 min (956.2 - 839.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,077.90'	3.885 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,077.90	0.000	0.000	0.000
1,078.00	0.240	0.012	0.012
1,084.00	0.400	1.920	1.932
1,088.20	0.530	1.953	3.885

Device	Routing	Invert	Outlet Devices
#1	Primary	1,078.50'	**36.0" Round Culvert** L= 29.0' Ke= 0.600 Outlet Invert= 1,077.92' S= 0.0200 '/' Cc= 0.900 n= 0.013
#2	Device 1	1,086.10'	**25.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=17.79 cfs @ 12.48 hrs HW=1,086.51' (Free Discharge)
↑—**1=Culvert** (Passes 17.79 cfs of 81.42 cfs potential flow)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 17.79 cfs @ 1.73 fps)

NYS SPDES Water Quality Volume (WQv) Calculator

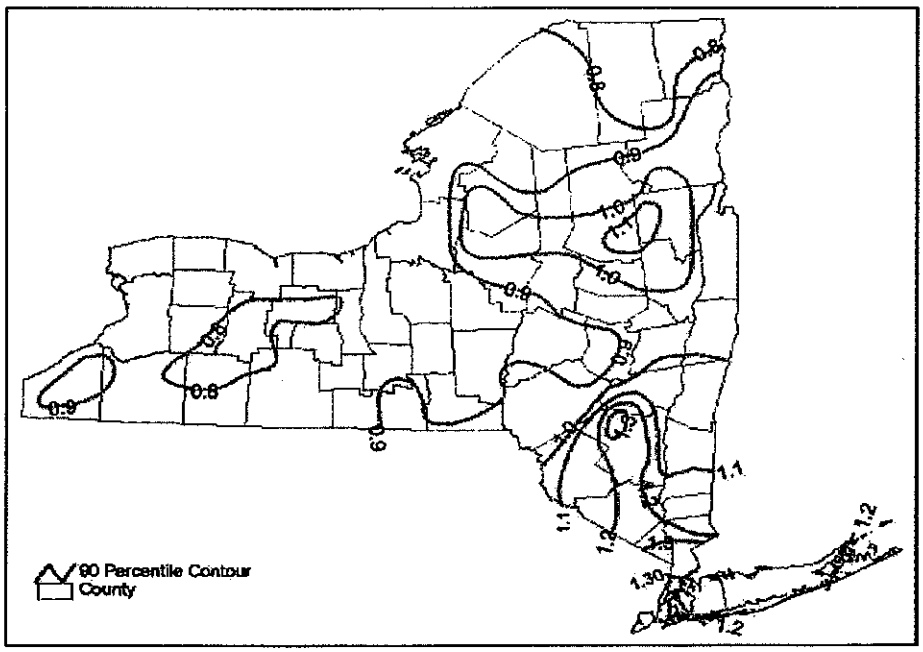
Project Number:	127-3478-10001	
Project:	Trading Cove	Pre-Treatment Basin #2
Location:	Thompson, NY	
Date:	August 1, 2010	

P =	1.15	90% Rainfall Event Number (see Figure 4.1, Chapter 4, Page 2, New York Management Design Manual)
I =	[illegible]	[illegible]
Rv =	0.95	[illegible]
A =	[illegible]	[illegible]

Formula: WQv = (P x Rv x A)/12

WQv=	0.368 Acre-Feet	or	16028 Cu Ft	100% Req. If *New* Construction
WQv=	0.092 Acre-Feet		4007 Cu Ft	25% Req. If Redevelopment

Figure 4.1 90% Rainfall in New York State



Summary for Pond 3P: Pre-Treatment Basin 2

Inflow Area = 4.480 ac, 93.53% Impervious, Inflow Depth = 2.50" for 1 YR event
Inflow = 17.36 cfs @ 11.89 hrs, Volume= 0.932 af
Outflow = 0.61 cfs @ 13.57 hrs, Volume= 0.926 af, Atten= 97%, Lag= 100.9 min
Primary = 0.61 cfs @ 13.57 hrs, Volume= 0.926 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 2
Starting Elev= 1,190.60' Surf.Area= 0.199 ac Storage= 0.156 af
Peak Elev= 1,192.84' @ 13.57 hrs Surf.Area= 0.271 ac Storage= 0.739 af (0.583 af above start)
0.368 AC·FT REQ'D ✓

Plug-Flow detention time= 752.0 min calculated for 0.770 af (83% of inflow)
Center-of-Mass det. time= 555.5 min (1,325.1 - 769.5)

Volume	Invert	Avail.Storage	Storage Description
#1	1,190.00'	3.622 af	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,190.00	0.180	0.000	0.000
1,195.00	0.340	1.300	1.300
1,200.40	0.520	2.322	3.622

Device	Routing	Invert	Outlet Devices
#1	Primary	1,190.50'	**12.0" Round Culvert** L= 352.0' Ke= 0.600 Outlet Invert= 1,136.29' S= 0.1540 '/' Cc= 0.900 n= 0.013
#2	Device 1	1,190.60'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	1,199.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.61 cfs @ 13.57 hrs HW=1,192.84' (Free Discharge)
└─**1=Culvert** (Passes 0.61 cfs of 4.81 cfs potential flow)
├─**2=Orifice/Grate** (Orifice Controls 0.61 cfs @ 6.94 fps)
└─**3=Orifice/Grate** (Controls 0.00 cfs)

NYS SPDES Water Quality Volume (WQv) Calculator

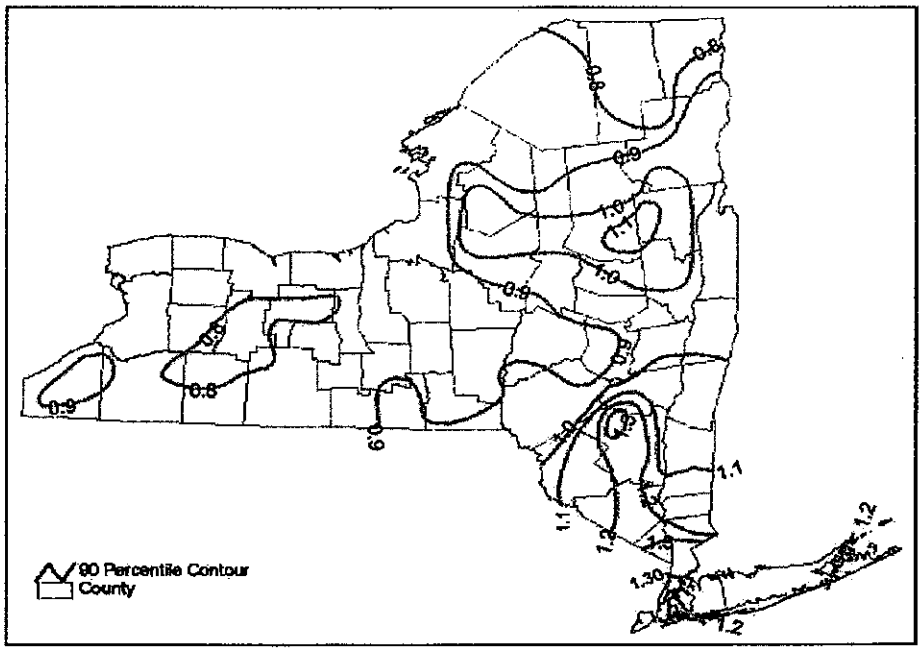
Project Number:	127-3478-10001	
Project:	Trading Cove	Pre-Treatment Basin #3
Location:	Thompson, NY	
Date:	August 1, 2010	

P =	1.10	90% Rainfall Event Number (see Figure 4.1, Chapter 4, Page 2, New York Management Design Manual)
I =	[illegible]	[illegible]
Rv =	0.65	Rv = 0.05 + 0.9 * I, where "I" is percent impervious cover (%) (Minimum Rv = 0.05)
A =	5.00	[illegible] Acres

Formula: WQv = (P x Rv x A)/12

WQv= 0.4354 Acre-Feet	or	18967 Cu Ft	100% Req. If *New* Construction
WQv= 0.1089 Acre-Feet		4742 Cu Ft	25% Req. If Redevelopment

Figure 4.1 90% Rainfall in New York State



Summary for Pond 22P: Pre-Treatment Basin 3

Inflow Area =	5.000 ac,100.00% Impervious, Inflow Depth = 2.77" for 1 YR event				
Inflow =	20.47 cfs @ 11.89 hrs, Volume=	1.153 af			
Outflow =	0.68 cfs @ 13.61 hrs, Volume=	1.041 af, Atten= 97%, Lag= 103.2 min			
Primary =	0.68 cfs @ 13.61 hrs, Volume=	1.041 af			

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 1,208.40' @ 13.61 hrs Surf.Area= 12,338 sf Storage= 33,852 cf > 18,967 CF REQ'D ✓

Plug-Flow detention time= 629.8 min calculated for 1.040 af (90% of inflow)
Center-of-Mass det. time= 582.2 min (1,332.1 - 750.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,205.00'	148,931 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,205.00	7,689	0	0
1,207.00	10,290	17,979	17,979
1,209.00	13,210	23,500	41,479
1,211.00	16,177	29,387	70,866
1,213.00	19,460	35,637	106,503
1,215.00	22,968	42,428	148,931

Device	Routing	Invert	Outlet Devices
#1	Primary	1,205.50'	**24.0" Round Culvert** L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 1,200.50' S= 0.0500 '/' Cc= 0.900 n= 0.013
#2	Device 1	1,205.60'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	1,214.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.68 cfs @ 13.61 hrs HW=1,208.40' (Free Discharge)
└─**1=Culvert** (Passes 0.68 cfs of 20.87 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.68 cfs @ 7.82 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

NYS SPDES Water Quality Volume (WQv) Calculator

Project Number:	127-3478-10001
Project:	Trading Cove
Location:	Thompson, NY
Date:	August 1, 2010

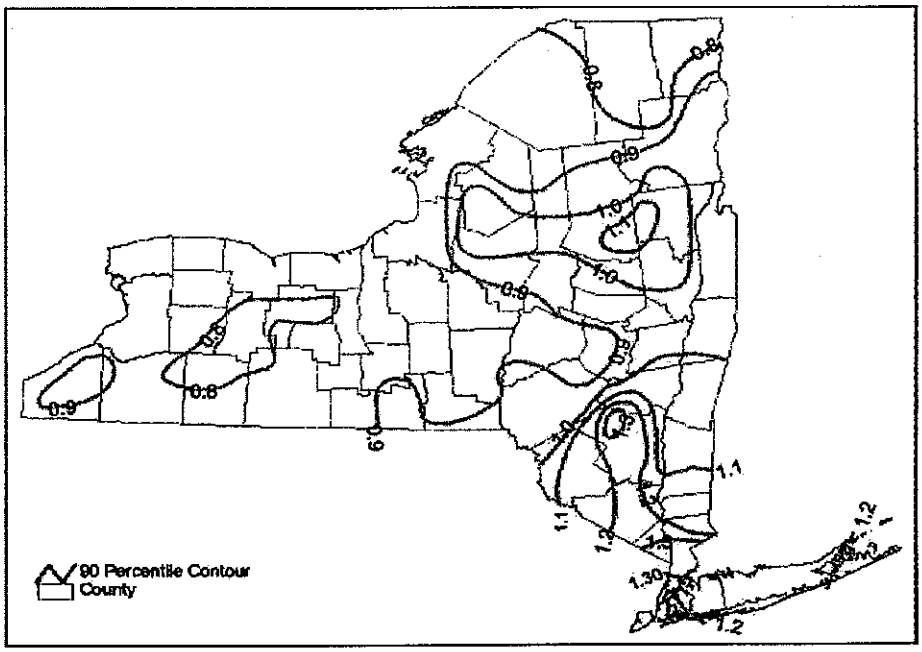
Water Quality Swale #1

P =	1.10	90% Rainfall Event Number (see Figure 4.1, Chapter 4, Page 2, New York Management Design Manual)
I =	[illegible]	Impervious Cover
Rv =	0.20	0.05 + (0.009 * I), where "I" is percent impervious cover (%) (Minimum Rv = 0.2)
A =	[illegible]	Site Area (acres) [illegible] Cu Ft Site Volume

Formula: WQv = (P x Rv x A)/12

WQv= 1.2228 Acre-Feet	or	53267 Cu Ft	100% Req. If *New* Construction
WQv= 0.3057 Acre-Feet		13317 Cu Ft	25% Req. If Redevelopment

Figure 4.1 90% Rainfall in New York State



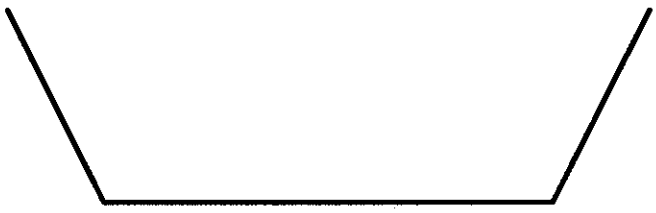
Summary for Reach 7R: Prop. swale 1 btwn wetlands 1 & 2

Inflow Area = 66.670 ac, 1.65% Impervious, Inflow Depth = 0.00" for 100 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min → NO FLOW EVEN IN 100 YEAR EVENT

Peak Storage= 0 cf @ 0.00 hrs, Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 381.51 cfs

7.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 0.5 '/' Top Width= 10.00'
Length= 325.0' Slope= 0.0277 '/'
Inlet Invert= 1,107.00', Outlet Invert= 1,098.00'



NYS SPDES Water Quality Volume (WQv) Calculator

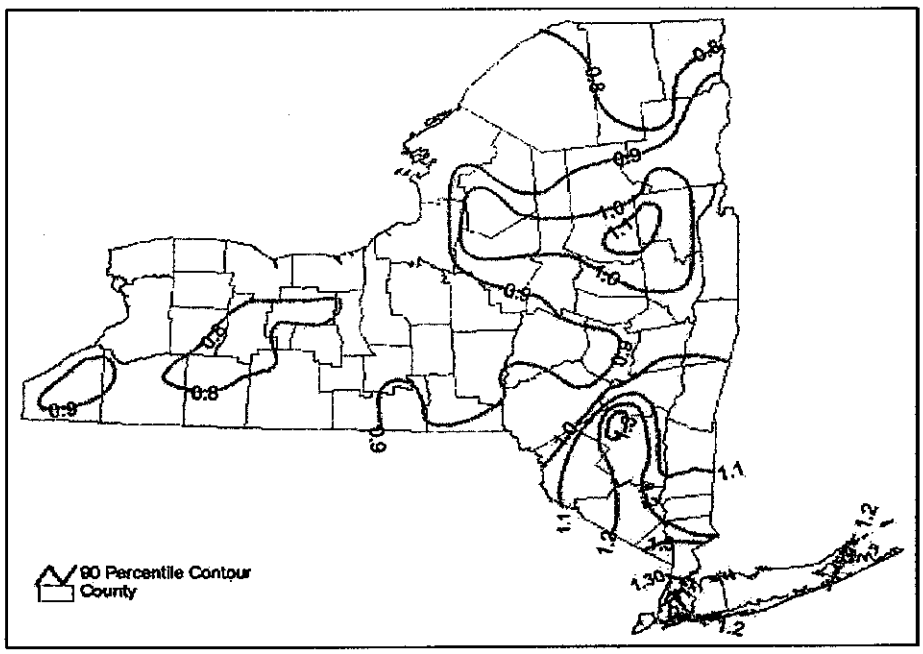
Project Number:	127-3478-10001	
Project:	Trading Cove	Water Quality Swale #2
Location:	Thompson, NY	
Date:	August 1, 2010	

P =	1.15	[illegible] Rainfall Event Number (see Figure 4.1, Chapter 4, Page 2 New York Management Design Manual)
I =	1	[illegible]
Rv =	0.05	[illegible] (I) [illegible] Minimum Rv = 0.05
A =	[illegible]	[illegible]

Formula: WQv = (P x Rv x A)/12

WQv= 1.0841 Acre-Feet	or	47221 Cu Ft	100% Req. If *New* Construction
WQv= 0.271 Acre-Feet		11805 Cu Ft	25% Req. If Redevelopment

Figure 4.1 90% Rainfall in New York State



Summary for Reach 10R: prop. swale 2 by main road

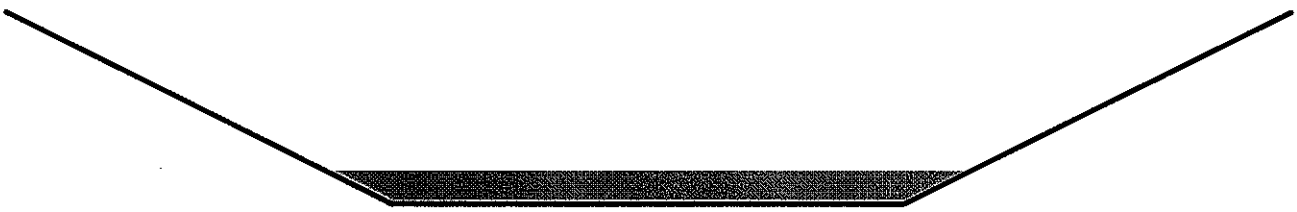
Inflow Area = 59.130 ac, 1.17% Impervious, Inflow Depth = 0.33" for 1 YR event
Inflow = 9.95 cfs @ 12.25 hrs, Volume= 1.642 af
Outflow = 8.09 cfs @ 12.61 hrs, Volume= 1.643 af, Atten= 19%, Lag= 21.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 1.75 fps, Min. Travel Time= 11.2 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 30.9 min TRAVEL TIME > 30 MIN

Peak Storage= 5,478 cf @ 12.41 hrs, Average Depth at Peak Storage= 0.52'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 195.65 cfs

PROVIDE CHECK DAMS TO MAINTAIN A 12" DEPTH

8.00' x 3.00' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 20.00'
Length= 1,175.0' Slope= 0.0025 '/'
Inlet Invert= 1,142.94', Outlet Invert= 1,140.00'



NYS SPDES Water Quality Volume (WQv) Calculator

Project Number:	127-3478-10001
Project:	Trading Cove
Location:	Thompson, NY
Date:	August 1, 2010

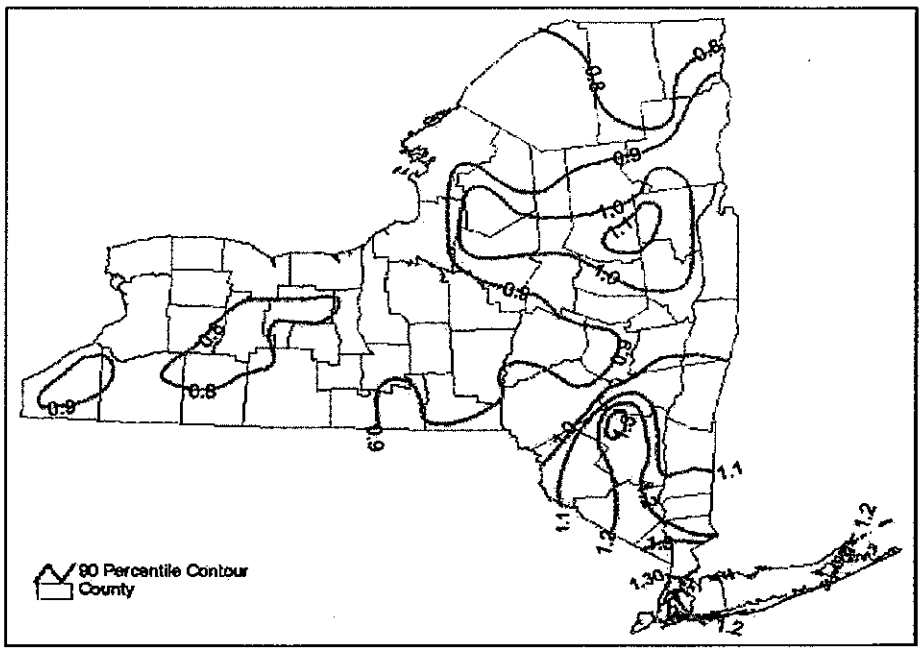
Water Quality Swale #3

P =	1.10	90% Rainfall Event Number (see Figure 4.1, Chapter 4, Page 2, New York Stormwater Design Manual)
I =	1%	
Rv =	0.29	
A =	41.5	0.0953

Formula: WQv = (P x Rv x A)/12

WQv=	0.7663 Acre-Feet	or	33381 Cu Ft	100% Req. If *New* Construction
WQv=	0.1916 Acre-Feet		8345 Cu Ft	25% Req. If Redevelopment

Figure 4.1 90% Rainfall in New York State



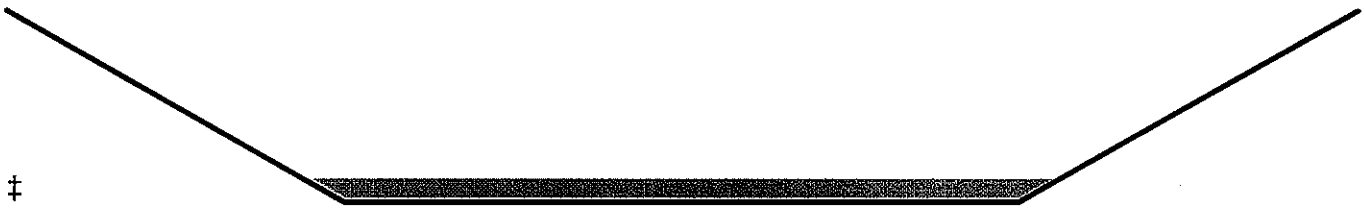
Summary for Reach 24R: Proposed Swale 3

Inflow Area = 41.800 ac, 0.81% Impervious, Inflow Depth = 0.30" for 1 YR event
Inflow = 3.76 cfs @ 12.71 hrs, Volume= 1.055 af
Outflow = 3.20 cfs @ 13.35 hrs, Volume= 1.055 af, Atten= 15%, Lag= 38.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 1.56 fps, Min. Travel Time= 21.1 min
Avg. Velocity = 0.61 fps, Avg. Travel Time= 53.8 min TRAVEL TIME > 30 MIN

Peak Storage= 4,067 cf @ 13.00 hrs, Average Depth at Peak Storage= 0.24' PROVIDE CHECK DAMS TO MAINTAIN 12" DEPTH.
Bank-Full Depth= 2.00', Capacity at Bank-Full= 127.26 cfs

8.00' x 2.00' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 1,975.0' Slope= 0.0050 '/'
Inlet Invert= 1,214.88', Outlet Invert= 1,205.00'



‡

NYS SPDES Water Quality Volume (WQv) Calculator

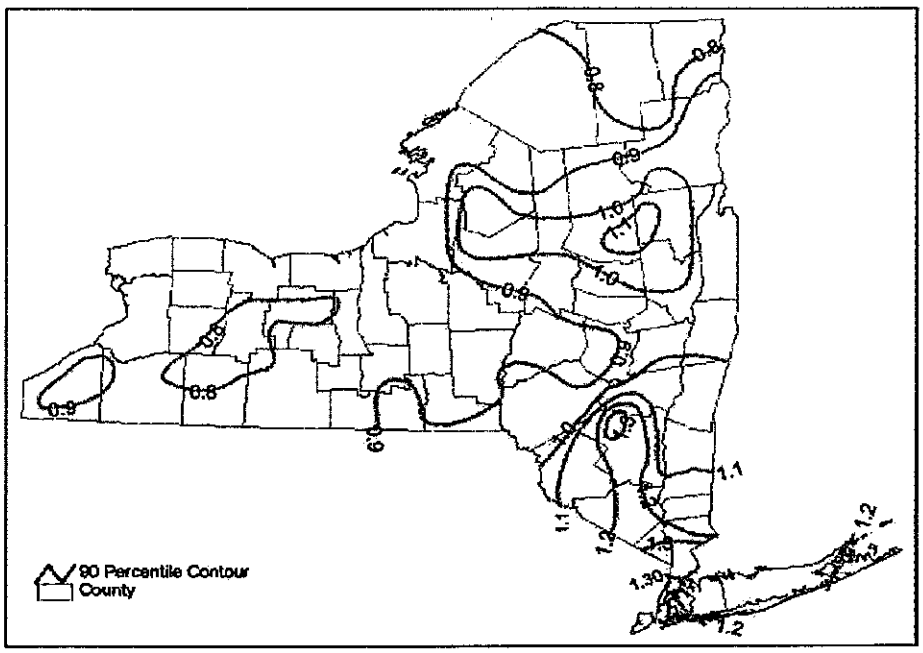
Project Number:	127-3478-10001	
Project:	Trading Cove	
Location:	Thompson, NY	Roof Area
Date:	August 1, 2010	

P =	1.10	90% Rainfall Event Number (see Figure 4.1, Chapter 4, Page 2, New York Management Design Manual)
I =	100%	Percent Impervious Cover (%)
Rv =	0.95	0.05+0.009 * I, where "I" is percent impervious cover (%) *[Minimum Rv = 0.2]*
A =	1.90	Site Area (acres) or 0.00297 Square Miles

Formula: WQv = (P x Rv x A)/12

WQv= 0.1655 Acre-Feet	or	7207 Cu Ft	100% Req. If *New* Construction
WQv= 0.0414 Acre-Feet		1802 Cu Ft	25% Req. If Redevelopment

Figure 4.1 90% Rainfall in New York State



Appendix M

Breakdown of Estimated Water Demand and Wastewater Flow

TETRA TECH

TETRA TECH

MEMORANDUM

Technical Memorandum

To: File

Fr: Tetra Tech, Inc.

Re: **Proposed Stockbridge-Munsee Casino, Thompson, NY**
Derivation of Water Demand and Wastewater Generation

Date: Revised January 10, 2012

This memorandum provides the methodology for the water demand and wastewater generation for the proposed Stockbridge-Munsee Casino in Thompson, New York. These water and wastewater projections will be used to design on-site and off-site utility improvements. Water and wastewater flow records from a virtually identical facility, the existing Mohegan Sun Casino in Uncasville, Connecticut, and industry design standards were utilized to create water and wastewater projections for average daily flow, maximum daily flow, peak hourly flow, and cooling water use as described below.

Casino Water Demand

The proposed Stockbridge-Munsee Casino will consist of a casino and a 750 room hotel. Water records from the Phase 1 Mohegan Sun Casino were used to determine water demand for the proposed project. The Phase 1 Mohegan Sun Casino facility (casino with no hotel), as constructed and operational in 2000 and 2001, is virtually identical to the proposed Stockbridge-Munsee Casino in terms of overall size, internal uses, and support spaces for the casino use. The average daily water use at the Mohegan Sun Casino, from January 2000 through March 2001, was 273,125 gpd. After examining the water records and industry design values, the average daily water demand was increased to 300,000 gpd to provide a safety factor of approximately 10 percent.

The Stockbridge-Munsee casino will be built in two phases with the Phase 1 program being 60 percent of the total in terms of square footage and gaming spaces. Other casino uses, such as specialty spaces (bars, restaurants, food court) as well as back of house support spaces will be similarly proportioned with 60 percent being built in Phase 1 and the remainder in phase 2. Consequently, the estimated domestic water usage and cooling/heating make-up water needs are based on an apportionment of the Mohegan Sun usage with 60 percent in Phase 1 and 40 percent in Phase 2. The hotel usage has been estimated separately as described below.

Engineering and Architecture Services
One Grant Street
Framingham, MA 01701
Tel 508.903.2000 Fax 508.903.2001

Hotel Water Demand

Water records from the Mohegan Sun facility were also used to estimate hotel water demand. In May 2001, the Mohegan Sun Casino was expanded to double the original size and in June 2002, a 1,200 room hotel was completed at the Mohegan Sun facility. Water records from June 2002 to December 2002 included the expanded casino, a 1,200 room hotel, and cooling water use. Separate cooling water records allowed cooling water usage to be extracted from the total water use records. The Phase 1 casino facility did not have an evaporative cooling system and, therefore, did not use a significant amount of process water.

The 1,200 room hotel was completed in June 2002. Therefore, water use records after June 2002 included the 1,200 room hotel, and water records before April 2002 do not include the hotel (the hotel was gradually phased-in from April 2002 to June 2002). By comparing water use records after June 2002 with water records before April 2002, the hotel water usage can be separated from the casino water use. This calculation yields a water usage of 92,500 gpd for an average day, equating to 77 gpd/bedroom. This value was rounded up to 80 gpd/bedroom to estimate the average daily demand for the proposed Stockbridge-Munsee hotel.

Parking and attendance records showed that the ratio of the maximum day usage to the average day usage is 1.6. Therefore, based on a peaking factor of 1.6, and an average day value of 80 gpd/bedroom, the maximum day demand for the proposed Stockbridge-Munsee hotel is 128 gpd (80 x 1.6 = 128gpd/bedroom). Maximum day demand is equivalent to the design standard used by the NYSDEC and other regulatory agencies for the design of treatment works and disposal facilities. The peaking factors are described in greater detail in the “Peaking Factors” section of this report.

Cooling Water Use

As stated above, cooling water was separated from water use records. Separate monthly cooling water records were provided from September 2001 to September 2002 for the Mohegan Sun facility. The cooling data from September 2001 to March 2002 provides cooling data for the casino only, as the hotel construction started in April 2002. During this time frame, the casino was double the size of proposed Stockbridge-Munsee Casino, as described above. Therefore, halving of the average cooling water use from September 2001 through March 2002 gives an accurate approximation of the average day cooling water usage for the Stockbridge-Munsee Casino (49,000 gpd).

Cooling information supplied by the design engineer for Mohegan Sun indicates that the typical proportion between casino and hotel cooling use is 70 percent vs. 30 percent,

respectively. Using this apportionment, the 750 room hotel cooling use was extrapolated from the casino use (49,000 gpd/0.7 x 0.3 = 21,000 gpd). Therefore, the proposed Stockbridge-Munsee hotel cooling use is estimated to be 21,000 gpd, average day, for a 750-room hotel.

The August 2001 cooling data at Mohegan Sun was used to obtain the maximum day casino cooling value. August is the hottest month of the year, and therefore uses the maximum cooling water. The August 2001 cooling water usage was 182,000 gpd. This value was divided by two because the proposed Stockbridge-Munsee Casino is half the size of the Mohegan Sun Casino as of August 2001. Therefore, the maximum day cooling use for the Stockbridge- Munsee casino is estimated to be 91,000 gpd.

The maximum day hotel cooling demand was calculated from the 70% casino/30% hotel cooling proportion described above. Therefore, the estimated maximum day hotel cooling use is 39,000 gpd (91,000 gpd/0.7 x 0.3 = 39,000 gpd) for the 750 room hotel.

Peaking Factors

There are three different values that describe the estimated water demand: average day, maximum day, and peak hour. The average day water demand represents the average daily volume of water usage over a continuous 12-month period of time. The maximum day water demand is the highest water usage that will occur in a continuous 24 hour period, typically occurring at the casino on a holiday or peak weekend day. Peak hour demand is the maximum water demand that will occur during a one-hour period. For design purposes, the peak hour is assumed to occur on the maximum day.

The average daily water demand was based on the average of the actual historic monthly water meter readings for the comparative facility at Mohegan Sun in Connecticut. Therefore, it represents the average daily volume of water usage over a continuous period of time extending over 12 months.

The maximum day demand factor was based on traffic counts, parking studies, and industry design standards. To generate the maximum day factor, Mohegan Sun Casino traffic counts from the maximum day observed (pre hotel and casino expansion) were compared to average daily traffic counts. Also, maximum holiday and maximum weekend day parking data were compared with average day parking data. From these comparisons, a maximum day peaking factor of 1.6 was developed (maximum day/average day). This also considered full occupancy in the hotel.

The peak hour factor was based on parking counts for a major facility event (concert) and industry design standards. The peak hour parking count was compared to average hour

parking counts, and adjusted to include peak flows from the hotel. This resulted in a peak hour factor of 3.0 (ratio of peak hour to average day). Peak hour water demand is not critical for this site from a supply standpoint because the proposed on-site water tower will mitigate peak hour flows during the course of the day but is important for the design of the water distribution system. Peak hour wastewater generation will be used for pump station and force main design.

Wastewater Generation from NYSDEC/Industry Standards

Water records are generally the best source of information to predict water demand and wastewater generation. However, to check the water record validity, maximum day water demand was also estimated using NYSDEC Design Standards. Other recognized industry standards were used where there was no NYSDEC standard. The estimated casino wastewater flow using NYSDEC/industry standards was 452,250 gpd, and the estimated hotel demand was 90,000 gpd. These values correlate well with the maximum day projections from actual records (432,000 gpd for the casino and 91,200 gpd for the hotel).

Water to Wastewater Reduction

Wastewater generation is based on water demand. The Civil Engineering Reference Manual shows typical water to wastewater reduction of 70%-80%. To be conservative, a 90% factor was selected for the casino and a 95% factor was used for the proposed hotel. These ratios are used for average day, maximum day, and peak hour use.

In terms of the hotel, the maximum daily wastewater generation is calculated to be 121.6 gpd per room. The NYSDEC Design Standards for Wastewater Treatment Works recommends a hotel room design standard (maximum day demand) of 120 gpd/bedroom. Therefore, the estimated maximum day flow of 121.6 gpd/room is consistent with the recommended design standard of the NYSDEC.

Conclusion

Based on water records and design standards, water demand and wastewater generation projections were developed for the proposed Stockbridge-Munsee Casino. The projections are summarized in the attached Table 1.

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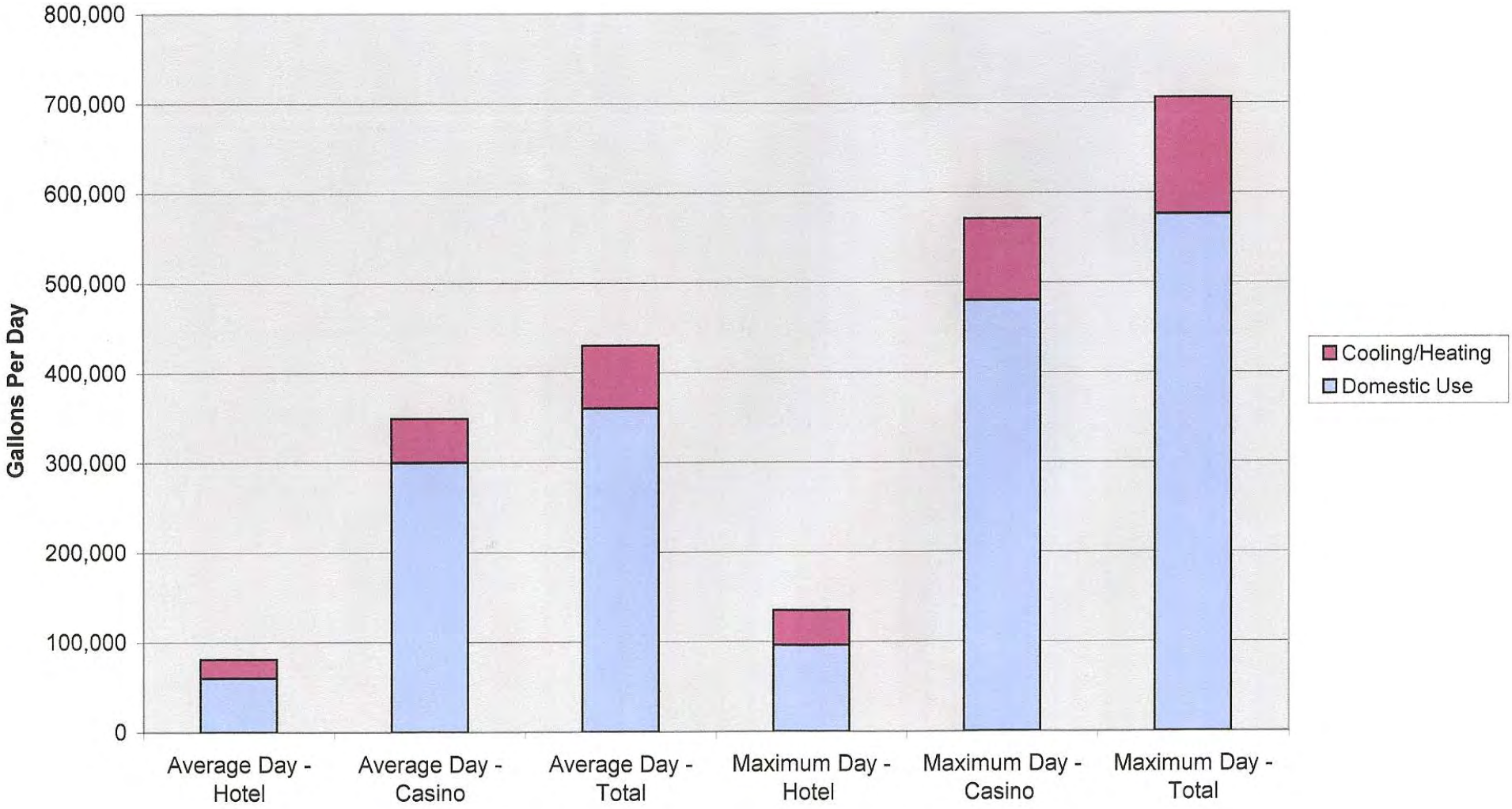
Proposed Stockbridge-Munsee Casino
Thompson, NY

Prepared: 1/10/12

Table 1
Water Demand and Wastewater Flows

	Phase 1 Casino		Phase 2 Casino		Phase 2 Hotel		Total Project	Peaking Factor
	Domestic Use	Cooling/Heating	Domestic Use	Cooling/Heating	Domestic Use	Cooling/Heating		
Water Demand								
Average Daily Demand, gpd	180,000	29,400	120,000	19,600	60,000	21,000		
Subtotals			139,600		81,000			
Total by Phase	**209,400**		**220,600**				**430,000**	
Maximum Daily Demand, gpd	288,000	54,660	192,000	36,440	96,000	39,000		1.6
Subtotals			228,440		135,000			
Total by Phase	**342,660**		**363,440**				**706,100**	
Wastewater Flows								
Average Daily Demand, gpd	162,000	NA	108,000	NA	57,000	NA		
Total by Phase	**162,000**		**165,000**				**327,000**	
Maximum Daily Demand gpd	259,200	NA	172,800	NA	91,200	NA		1.60
Total by Phase	**259,200**		**264,000**				**523,200**	
Peak Hourly Flow, gpm	338	NA	225	NA	119	NA		3.0
Total by Phase	**338**		**344**				**681**	

Figure 1
Stockbridge-Munsee Casino
Projected Water Use



Appendix N

Visual Impact Analysis

VISUAL IMPACT ANALYSIS

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A. INTRODUCTION

This analysis evaluates the potential visual impacts of the proposed Stockbridge-Munsee Casino project in the Town of Thompson, New York. The National Environmental Policy Act (NEPA) requires a visual impact analysis to: 1) evaluate the visual and aesthetic impacts from a project; 2) identify the relationship of the impacts to potential views of and from the project; and 3) identify measures to avoid, minimize, or reduce adverse impacts. This visual impact analysis was conducted following the New York State Department of Environmental Conservation (NYSDEC) Program Policy (DEP-00-2, July 31, 2000) entitled "Assessing and Mitigating Visual Impacts". This policy incorporates the NEPA requirements for conducting a visual impact analysis and provides a methodology to be used in assessing the visual impacts of a proposed action. As required by NEPA, this visual impact analysis identifies the scenic resources within the project study area and assesses the potential visual impacts resulting from the proposed project. Digital Elevation Models were used to identify potential resources within the viewshed of the proposed project and views from these resources were evaluated during field surveys. No significant adverse visual impacts were identified as a result of the proposed project.

B. EXISTING CONDITIONS

STUDY AREA

The study area for this visual impact analysis is a 3-mile radius on either side of the proposed hotel location (see Figure 1). The majority of the study area lies within the Town of Thompson.

This study area, which is largely rural and characterized by low-density residential uses, includes a portion of New York State Route 17, several local roads, and an approximately 7.5-mile segment of the Neversink River. The Concord Hotel, similar in bulk and size to the proposed hotel is located in the northwest corner of the study area adjacent to Lake Kiamesha.

The topography in the study area is characterized by numerous hills and valleys. Elevations vary from approximately 1,100 feet in the valleys to hilltops that exceed 1,500 feet. The elevation of the proposed project site is approximately 1,150 feet, roughly 150 feet higher than the elevation of the Neversink River, which is located approximately 1,000 feet east of the project site and flows to the south. The majority of the study area is wooded and contains mature deciduous forest and evergreen trees. Views of the proposed hotel location vary throughout the study area as a function of the presence or absence of topography, vegetation, and existing buildings, as well as the season.

INVENTORY OF RESOURCES

An inventory of sensitive aesthetic and visual resources was prepared, including locations or resources identified by local jurisdictions as having scenic or aesthetic quality. All resources within a 3-mile radius of the project site were identified.

STATE/NATIONAL REGISTER OF HISTORIC PLACES

No known historic resources on the State and/or National Register of Historic Places (S/NR) (16 USC §470a et seq., Parks, Recreation and Historic Preservation Law §14.07) were identified within the study area.

NEW YORK STATE PARKS

No State Parks as defined by Parks, Recreation and Historic Preservation Law §3.09 were identified within the study area.[1]

URBAN CULTURAL PARKS

No Urban Cultural Parks (UCP) (as defined by Article 35, Parks, Recreation and Historic Preservation Law) are located within the project study area.[2]

NEW YORK STATE FOREST PRESERVE

All lands within the State Forest Preserve (NYS Constitution Article XIV) are located within the boundaries of the Adirondack and Catskill Parks. Thus, there are no State Forest Preserve lands within the study area. [3]

NATIONAL WILDLIFE REFUGES

No National Wildlife Refuges (as defined by the National Wildlife Refuge System Administration Act, 16 U.S.C. 668dd-668ee and amended by P.L. 105-57) are located within the project study area.[4]

STATE GAME REFUGES AND STATE WILDLIFE MANAGEMENT AREAS

No State Game Refuges and State Wildlife Management Areas as defined by ECL 11-2105 are located within the project study area.[5] The Bashakill and Mongaup Valley State Wildlife Management Areas are both located approximately 12-miles to the southeast and southwest respectively.

---

[1] Source: http://www.dec.state.ny.us/website/dlf/publands/region1.html; posted as of 01/28/2004.

[2] Source: http://www.nyhistory.com/links/urban_cultural_parks.htm; posted as of 01/28/2004.

[3] Source: http://www.dec.state.ny.us/website/dlf/publands/landclass.html; posted as of 01/28/2004.

[4] Source: http://refuges.fws.gov; posted as of 01/28/2004.

[5] Source: http://www.dec.state.ny.us/website/dfwmr/wma/wmalist.htm; posted as of 01/28/2004

NATIONAL NATURAL LANDMARKS

National Natural Landmarks (as defined by 36 CFR Part 62) located in New York State are listed on the National Park Service website.[6] No National Natural Landmarks are located within the project study area.

NATIONAL PARK SYSTEM, RECREATION AREAS, SEASHORES, FORESTS

Properties within the National Park System (as defined by 16 USC 1c) are listed on the National Park Service website.[7] No National Parks are located within the project study area.

RIVERS DESIGNATED AS NATIONAL OR STATE WILD, SCENIC OR RECREATIONAL

No listed rivers are located within the study area.

A list of rivers designated as National Wild, Scenic, or Recreational (16 USC Chapter 28) is available on the National Park Service website.[8] There are no National Wild, Scenic, or Recreational rivers within the project study area.

Rivers designated by New York State as Wild, Scenic, or Recreational are listed in §§15-2713 through 15-2715 of Environmental Conservation Law. No listed rivers are located within the study area.

ANY SITE, AREA, LAKE, RESERVOIR, OR HIGHWAY DESIGNATED OR ELIGIBLE FOR DESIGNATION AS SCENIC

Resources identified in Article 49 of the Environmental Conservation Law (ECL) include Scenic Byways (under the purview of the Department of Transportation), parkways (designated by the Office of Parks, Recreation, and Historic Preservation), and other areas designated by NYSDEC. There are no Scenic Byways,[9] parkways,[10] or other areas designated by NYSDEC located within the project study area.

SCENIC AREAS OF STATEWIDE SIGNIFICANCE

In July 1993, the New York State Department of State designated six Scenic Areas of Statewide Significance (SASS) in the Hudson River Valley as part of its implementation of the State's Coastal Management Program (CMP). None of these six areas is located within the project study area.[11]

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[6] Source: www.nature.nps.gov/nnl/Registry/USA_Map/States/NewYork/new_york.htm; posted as of 01/28/2004.

[7] Source: http://www.nps.gov/parks.html; posted as of 01/28/2004.

[8] Source: http://www.nps.gov/rivers/wildriverslist.html; posted as of 01/28/2004.

[9] Source: http://www.dot.state.ny.us/scenic/scroad.html; posted as of 01/28/2004.

[10] Source: http://www.dot.state.ny.us/scenic/parkway.html; posted as of 01/28/2004.

[11] Source: New York State Department of State, Division of Coastal Resources and Waterfront Revitalization, "Scenic Areas of Statewide Significance," July 1993.

A STATE OR FEDERALLY DESIGNATED TRAIL

State or federally designated trails (as defined by 16 USC Chapter 27) such as the Appalachian Trail and Long Path are not located within the study area.

STATE NATURE AND HISTORIC PRESERVATION AREAS

There are no State Nature or Historic Preservation Areas (as designated by Section 4 of Article XIV of the New York State Constitution) located within the study area.[12]

PALISADES PARK

The Palisades Park is not located within the project study area.

BOND ACT PROPERTIES PURCHASED UNDER EXCEPTIONAL SCENIC BEAUTY OR OPEN SPACE CATEGORY

There are no known Bond Act properties located within the project study area. However, the extensive "Neversink Highlands" is cited under "Priority Projects" in the New York State Open Space Plan.[13] The Neversink Highlands comprise several extensive areas, including lands to the south of the project site. The priority areas are described as including opportunities "extending north to Holiday Mountain Ski Area along Rt. 17." This northerly terminus of the Neversink Highlands area is separated from the project site by Route 17. Consequently, there are no designated priority areas located within the study area.

OTHER LOCALLY SIGNIFICANT RESOURCES

Historic Resources

Two historic resources of local significance that fall within the study area were identified by the Thompson Town Historian and are listed below.

- The Judge William A. Thompson House
- The Thompsonville Cemetery

Both of these resources are located approximately 1.5 miles northwest of the project site in Thompsonville near the intersection of Heiden Road and Thompsonville Road. Based on field reconnaissance, it was determined that existing topography and vegetation would likely obscure views to the southeast toward the proposed project. Therefore, the proposed project would not be expected to result in any significant adverse visual impacts to these local historic resources.

Other Resources

Digital Elevation Models and field surveys identified several roadways within the study area with potential views of the proposed project site. These roadways are listed below and discussed in detail in "Impact Analysis."

- New York State Route 17

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[12] Source: http://www.dec.state.ny.us/website/dlf/publands/region1.html; posted as of 07/30/2003.

[13] Source: New York State Department of Environmental Conservation , "NYS Open Space Conservation Plan" 2002.

- Edwards Road
- Marsh Road
- Fred Road
- Heiden Road
- River Road
- Patio Drive
- Sullivan Road
- Holiday Mountain Road

In addition, several open space resources were identified in the study area or just outside the study area. These open space resources are listed below and discussed in detail in "Impact Analysis."

- NYSDEC Fishing Access at the Neversink River
- Neversink River
- Neversink River State Unique Area
- Wolf Brook State Multiple Use Area

C. IMPACT ASSESSMENT

METHODOLOGY

To identify the potential visual effects associated with the proposed project, a digital viewshed analysis was conducted using Digital Elevation Models (DEMs) created by the United States Geological Survey (USGS) and Geographic Information Systems (GIS) software to identify any locations within a 3-mile radius of the site that would be in the viewshed of the proposed hotel. Digital Elevation Models work by identifying and modeling changes to the landscape based on the geographic location of a proposed action and its elevation. To conduct this analysis, the location of the proposed 15-story hotel was mapped and a building height of approximately 200 feet was used.

Since the digital viewshed analysis did not consider vegetation, the resulting digital viewshed covers a more extensive area then it would if the effects of vegetation were considered. To account for this, and verify the extent of views from sensitive receptors and typical viewsheds identified by the DEMs (see Figure 1), a field survey was conducted. This field survey was conducted in the winter, when potential views of the proposed project would be most visible and would not be obscured by vegetation. Several photographs were taken to demonstrate typical views toward the project site from these locations (see Figures 2 to 5).

NYSDEC GUIDANCE

According to DEP-00-2, a "visual impact" occurs when "the mitigating[1] effects of perspective do not reduce the visibility of an object to insignificant levels. Beauty plays no role in this concept" (DEP-00-2, p. 10).

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[14] DEP-00-2 uses the term "mitigating" or "mitigation" to refer to design parameters that avoid or reduce potential visibility of a project. This should not be confused with the use of the term "mitigation" with respect to mitigation of significant adverse environmental impacts as required by the State Environmental Quality Review Act (SEQRA).

The "mitigating effects of perspective" are important to understand in the assessment of visual impact. While an object such as the proposed hotel may be visible over a long distance, "atmospheric perspective," which DEP-00-2 describes as the "reduction in intensity of colors and the contrast between light and dark as the distance of the objects from the observer increases" and which is a product of the natural particles within the atmosphere that scatter light, serves to minimize the significance of the proposed building in the overall viewshed. A second factor that reduces the potential for impact is the overall character of the surrounding landscape, including existing vegetation, buildings, and topography. The effects of distance and contextual topography typically reduce the visibility of distant structures such as the proposed building.

Thus, while a proposed project may be visible within a viewshed, mere visibility is not a threshold of significance. The significance of the visibility is dependent on several factors: presence of any designated historic or scenic resources within the viewshed of the project, distance, general characteristics of the surrounding landscape, and the extent to which the visibility of the project interferes with the public's enjoyment or appreciation of the resource. A significant adverse visual impact would only occur when the effects of design, distance, and intervening topography and vegetation do not minimize the visibility of an object and the visibility significantly detracts from the public's enjoyment of a resource.

DEP-00-2 states that an action can be determined to be one that avoids or minimizes adverse impacts to the maximum extent practicable by answering in the affirmative to each of the following questions (DEP-00-2, p. 8):

1) Was the full mitigation menu[15] considered?
2) Will those mitigation strategies selected be effective?
3) Were the costs of mitigation for impacts to other media considered and were those mitigation investments prioritized accordingly?
4) Are the estimated costs of all mitigation insignificant?
5) Were the mitigation strategies employed consistent with previous similar applications?
6) Was the mitigation cost effective?
7) Were offsets and decommissioning (removal of older structures or equipment) considered?

IMPACT ANALYSIS

The proposed project would result in the construction of a 15-story hotel, which has the potential to be visible from several locations within the study area as identified in the GIS analysis (see Figure 1). All of the locations identified in the digital viewshed analysis that did not require access to private property, were evaluated during a field survey.

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[15] DEP-00-2 defines the "mitigation menu" as three general groups: professional design and siting, maintenance, and offsets. "Professional design and siting" includes a full suite of standard design considerations such as screening, relocation, camouflage/disguise, alternative technologies, materials, and lighting. "Maintenance" refers to any actions that an applicant can take to improve the appearance of an existing facility. "Offsets" include measures to compensate for a visual impact through on- or off-site actions to improve the overall visual quality within an affected viewshed. Offsets "should be employed in sensitive locations where significant impacts from the proposal are unavoidable, or mitigation of other types would be uneconomic and mitigation to be used is only partially effective."

As a result of the field survey, it was determined that the study area's topography and vegetation would significantly limit views of the proposed project from most of the locations identified in the GIS analysis. This is particularly true during the seasons of the year when deciduous trees have their leaves, which significantly reduces visibility in wooded or forested areas. Several locations that could potentially have views of the proposed project have been identified including the New York State Route 17, Edwards Road, Fred Road, Marsh Road, Heiden Road, the NYSDEC Fishing Access at the Neversink River, and the Neversink River. The views from these locations are analyzed below. In addition, the Neversink River State Unique Area and the Wolf Brook State Multiple Use Area, which are located just outside the study area were also evaluated.

As discussed above, it was determined that the two historic resources of local significance identified by the Town Historian would not have any views of the proposed project due to the existing topography and vegetation.

NEW YORK STATE ROUTE 17

The proposed project would be partially visible from an approximately 100 foot section of New York State Route 17 as it passes directly over the Neversink River located roughly 1.0 mile southeast of the project site. Figure 2 shows two typical views taken from Route 17 toward the project site as it crosses over the Neversink River. Field inspection of this area revealed that actual views would be severely limited by topography, vegetation, and the bearing of the roadway. As a result, it is unlikely that the proposed project would be within the public's line of sight when traveling this roadway unless travelers were deliberately looking in a northwesterly direction. Further, any potential views, if at all possible, would be brief since it is expected that travelers would be moving at roughly 55 miles per hour as they passed through this location. Stopping on Route 17 is prohibited and the road is a limited access highway. Therefore, the proposed project would not be expected to result in any significant adverse visual impacts to Route 17.

EDWARDS ROAD

Edwards Road runs parallel to the east side of the Neversink River approximately 1000 feet west of the project site. The most prominent views of the proposed hotel would likely be from an approximately 1.0 mile segment of Edwards Road, which begins roughly 0.5 mile north of the intersection with New York State Route 17. A small number of residents along this segment of the roadway would have direct westerly views of the proposed hotel. However, full views of the proposed hotel would likely be limited to the winter months since views would screened to some extent by the dense vegetation which exists along most of the roadway between the river and Edwards Road (see Figure 3).

Some portions of Edwards Road lack any significant vegetation and would likely have at least partial views of the proposed hotel during all seasons. Even under these conditions, a minimal number of people would be affected, as residential density along this portion of Edwards Road is low. In addition, due to the bearing of the roadway, the proposed hotel would not be within the public's direct line of sight while traveling most of this roadway. Therefore, the proposed project would not be expected to result in any significant adverse visual impacts to Edwards Road.

FRED ROAD

The proposed project may be partially visible from an approximately 1000 foot section of Fred Road near Old Creamery Road (see Figure 4, Photo 5) when traveling in a southerly direction. However, since the proposed hotel would be located approximately 2.0 miles south of this location and much of the area between this roadway and the proposed project is undeveloped and heavily wooded, any potential views would likely be brief and limited to winter months. Therefore, the proposed project would not be expected to result in any significant adverse visual impacts on Fred Road.

MARSH ROAD

A small segment of Marsh Road at the intersection of Goodwin Road approximately 1.5 miles northeast of the project site may have a partial southwesterly view of the proposed hotel. The existing view from this location is depicted in Figure 4, Photo 6. Due to distance, the bearing of the roadway, and existing vegetation, the public would likely have only brief and limited views of the project site while traveling in a southwesterly direction along Marsh Road. Further, it is expected that only a small number of people would be affected by views of the project site from this location since the road is lightly traveled. Therefore, the proposed project would not be expected to result in any significant adverse visual impacts to Marsh Road.

HEIDEN ROAD

Heiden Road forms the western boundary of the project site and is located approximately 1,500 feet west of the project site. The digital viewshed analysis identified portions of Heiden Road within the viewshed of the proposed hotel. Vegetation along most of Heiden Road is so dense that views of the project site would likely only be possible through deliberate inspection of the landscape, even during the winter. During the field survey, it was determined that heavy vegetation would likely limit views of the proposed project to the winter months (see Figure 5, Photo 8). The angle and bearing of the roadway is such that potential views to its northern and southern sections are further limited. Therefore, the proposed project would not result in any significant adverse visual impacts on Heiden Road.

RIVER ROAD

River Road is located approximately 2.0 miles northwest of the project site. Dense vegetation lines both sides of River Road and would likely obstruct southeasterly views of the proposed hotel from this roadway. Therefore, the proposed project would not be expected to result in any significant adverse visual impacts to River Road.

PATIO DRIVE

Patio Drive is located approximately 0.5 mile north of the project site. Dense vegetation lines both sides of Patio Drive and would likely obstruct southerly views of the proposed hotel from this roadway. Therefore, the proposed project would not be expected to result in any significant adverse visual impacts to Patio Drive.

SULLIVAN ROAD

Sullivan Road is located approximately 2.0 miles south of the project site. Based on the existing topography and dense vegetation lining both sides of Sullivan Road, it was determined that

views northward toward the proposed project site would likely be obscured. Therefore, the proposed project would not be expected to result in any significant adverse visual impacts to Sullivan Road.

HOLIDAY MOUNTAIN ROAD

Holiday Mountain Road is located approximately 2.0 miles southeast of the project site. Dense vegetation along the north side of Holiday Mountain Road in addition to vegetation along the north side of Bridgeville Road would likely obstruct views of the project site from this roadway. Therefore, the proposed project would not be expected to result in any significant adverse visual impacts on Holiday Mountain Road.

NYSDEC FISHING ACCESS AT THE NEVERSINK RIVER

A New York State Department of Environmental Conservation (NYSDEC) fishing access area is located along the east side of the Neversink River just north of the Route 17 Viaduct on Edwards Road approximately 0.75 miles southeast of the project site. Partial views of the proposed hotel may be possible from this location. However, views of the proposed hotel from this location would be largely screened by existing topography and vegetation. Therefore, the proposed project would not be expected to result in any significant adverse visual impacts on the NYSDEC fishing access at the Neversink River.

NEVERSINK RIVER

The Neversink River forms the eastern boundary of the project site approximately 1000 feet east of the proposed hotel and is roughly 150 feet lower in elevation than the project site. Recreational users of the Neversink River would have direct westerly views of the proposed hotel from the approximately 1.0 mile segment of the river adjacent to the project site. However, at various points along this segment of the river these views would be partially shielded by the heavy vegetation lining the west bank of the river. The proposed hotel would also be visible from locations on the river and along the river's edge north and south of the project site. These views would be somewhat obscured by topography and vegetation. The proposed hotel would be visible or partially visible from several locations along the Neversink River. Therefore it would be expected to decrease recreational users' enjoyment of the places along this stretch of the river where these views existed. Although the hotel would be visible or partially visible to recreational users, the proposed project would not be expected to result in a significant adverse visual impact to the Neversink River as a regional recreational resource. Maintenance of the existing riverbank vegetative buffer and revegetation of the disturbed mining areas is expected to enhance the visual quality of the western riverbanks and increase the screening of the hotel from recreational users of the river.

NEVERSINK RIVER STATE UNIQUE AREA

The northernmost point Neversink River State Unique Area is located approximately four miles south of the project site at the intersection of the Neversink River and Eden Brook. Due to distance, topography, and existing vegetation the proposed hotel would not be visible from this open space resource. Therefore, the proposed project would not be expected to result in any significant adverse visual impacts to the Neversink River State Unique Area.

WOLF BROOK STATE MULTIPLE USE AREA

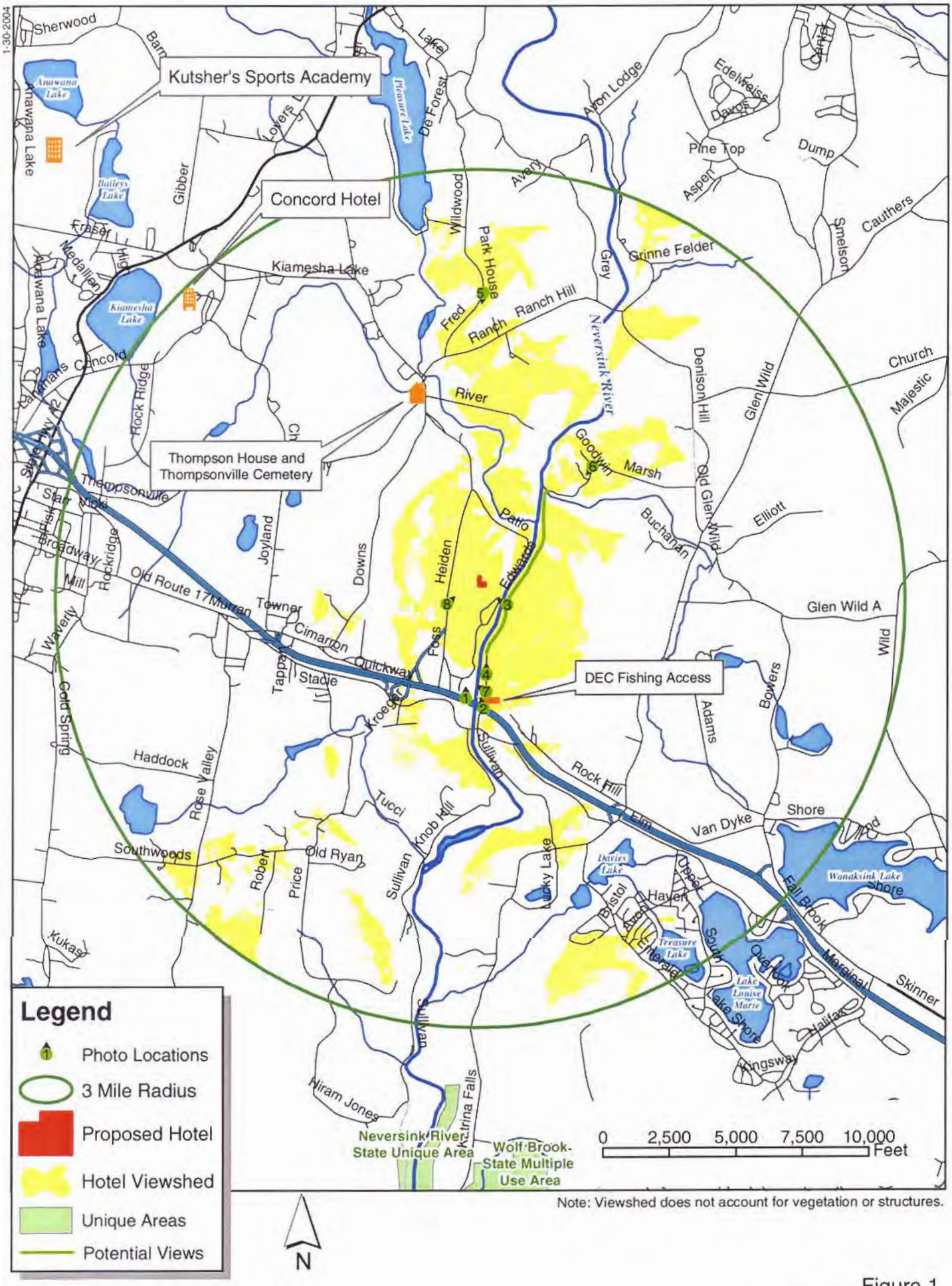
The Wolf Brook State Multiple Use Area is located approximately four miles south of the project site just southeast of Wolf Lake. Due to distance, topography, and existing vegetation the proposed hotel would not be visible from this open space resource. Therefore, the proposed project would not be expected to result in any significant adverse visual impacts to the Wolf Brook State Multiple Use Area.

CONCLUSION

The proposed hotel would be visible or partially visible from various segments of the roadways identified above, the NYSDEC fishing access, and various points along the Neversink River. Views from the areas identified in the digital viewshed analysis which appear on Figure 1 and were not included in the "Impact Analysis", were found to be insignificant during the field survey due to distance and intervening topography.

The proposed hotel would not be expected to have any significant adverse impacts on the visual character of the study area. However, recreational users of a segment of the Neversink River immediately adjacent to the hotel would have views or partial views of the hotel, and as a result, the quality of their recreational experience in the immediate areas in which these views existed would be diminished. Although the height of the proposed hotel would exceed the height of any other structure in the area, it is expected that the topography and vegetation surrounding the project site would prevent views from most locations within the study area. Further, any view of the proposed hotel would be expected to be less visible than views of the existing Concord Hotel, which is similar in bulk and size to the proposed hotel and is located in the northwest corner of the study area adjacent to Lake Kiamesha. At twelve stories, the Concord Hotel is only slightly smaller than the proposed hotel. Unlike the proposed hotel, which sits in a topographically depressed location, the Concord Hotel is situated prominently on a ridge. Despite its size and prominent location, it is only visible from roads located immediately adjacent to the hotel and from various points with open views across Kiamesha Lake.

This analysis concludes that the proposed hotel would not impair the visual landscape as experienced from any scenic or historic resources or interfere with or reduce the public's enjoyment and/or appreciation of the appearance of any inventoried scenic, historic resource, or locally significant resource. Therefore, the proposed hotel would not be expected to result in any significant adverse visual impacts to the study area. ✷



Note: Viewshed does not account for vegetation or structures.

Figure 1
Hotel Viewshed

STOCKBRIDGE-MUNSEE

View from Route17 looking north toward hotel site from the west side of the Neversink River **1**

View from Route 17 looking northwest toward hotel site from the east side of the Neversink River **2**

Figure 2
Photographs

STOCKBRIDGE-MUNSEE CASINO

1-04

View from Edwards Road looking west toward hotel site **3**

View to the north from Edwards Road **4**

Figure 3
Photographs

View to the south toward hotel site from Fred Road **5**

View to the southwest toward hotel site from the intersection of Marsh and Goodwin Roads **6**

Figure 4
Photographs

STOCKBRIDGE-MUNSEE CASINO

1-04

View to the northeast toward hotel site from Heiden Road **7**

View to the northwest toward hotel site from the DEC Fishing Access **8**

Appendix O

DEIS Public Hearing Comments and Response

Appendix O

DEIS Public Hearing Transcript

O-1 Public Hearing Transcript

O-2 Transcript Index

O-3 Response to Comments

Appendix O-1

Public Hearing Transcript

TETRA TECH

COPY

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

- X

PUBLIC HEARING

For

STOCKBRIDGE-MUNSEE CASINO

DRAFT ENVIRONMENTAL IMPACT STATEMENT

- X

Monticello High School
March 10, 2005
7:00 P.M.

A P P E A R A N C E S :

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Indian Affairs
Regional Office
711 Stewarts Ferry Pike
Nashville, Tennessee 37214
BY: KURT CHANDLER, Consultant
CLIFFORD LEROY

ALSO PRESENT:

Robert Chicks - President

Amy Green - Engineer for Applicant

JERIC CORPORATION
Court Reporting Services
P.O. Box 385
Narrowsburg, New York 12764
(845) 252-3515

Reported By: Rosemary A. Meyer

(Stockbridge-Munsee Public Hearing)

MR. CHANDLER: If we could begin. My name is Kurt Chandler, the regional environmental scientist for the Bureau of Indian Affairs.

This is a public hearing to take comments on the Environmental Impact Statement for the Stockbridge-Munsee Casino here in Sullivan County.

Now, what we're going to do is I'll introduce President Chicks, then we'll have Amy Green make a short presentation and then we'll open it up for public comments. I'd like everyone to limit their comments to three minutes. Leroy Clifford, also from the Bureau of Indian Affairs, he will be timing those comments. We'll tell you when the time is up. If you have additional comments we'd like you to wait until everyone else has had a chance to speak and then we will open it up again if you have new comment. That way we will minimize the repetition of the same comments.

We have sign-up sheets. I'd like everyone to sign up who would like to comment, that way we can make sure we have your name written down there. And your comments will be compiled. They will be part of the public record.

Now, if you have written comments, please submit those to me at the Bureau of Indian Affairs. The address is on this Notice of Availability sheet. You're welcome to take a sheet with you. If you don't want to, it's the Bureau of Indian

(Stockbridge-Munsee Public Hearing)

Affairs, Regional Office, 711 Stewarts Ferry Pike, Nashville, Tennessee, 37214. Or you can fax it to us. Make sure you get the comments to us by March 28th. I'll take them by fax or by letter. You can bring it in if you want to, if you want to come all the way to Nashville for it. But you can fax it to us at 615-467-2939 or 1701. I prefer the 2939 because it will come directly to my office. Either way will work.

I want to note that the Stockbridge-Munsee Casino proposal is a different type than the Mohawk in that the property of the Stockbridge-Munsee would be entirely trust property and the EPA would have the sole jurisdiction over the environmental impact, where the Mohawk property was combined, be land and trust land, so part would be under state jurisdiction and the trust land would be under federal jurisdiction under the EPA.

If there is anyone who has not signed up yet please sign up now. When we go through the list, we'll have your name down there. And again, we will be making more time available at the end. After everyone who has signed up has had their three minutes to speak we'll make it open again to anyone else who has additional comments.

I'd like to introduce President Robert Chicks. He's the tribal president and the chairman of the Stockbridge-Munsee Band of Mohican Indians of Wisconsin.

(Introductions)

President Chicks.

MR. CHICKS: I just want to be really brief. Thank you for coming tonight on behalf of the Stockbridge-Munsee Tribe. I bring you greetings from my tribe to the Sullivan County area. We have been coming and meeting here for about four years now, both with the local governments, different community hearings. We did have a SEQRA hearing. We were here for that. We are always encouraged by the interrelationships that we have, not just with the local government officials, but with the citizens and with the business leaders in this community. They have treated us very well. The hospitality that you've shown the Stockbridge Tribe has been very, very warm, and we appreciate that.

I just want to introduce two members of my council who have traveled with me tonight. Dick Miller and Terry Terrio are with us. And, I also just want to note Glen Wallman who is here from Trading Cove who is the tribe's business partner and developer for this casino.

It's been a busy four years that we've been working on this project. We're nearing the end of it now with this hearing tonight. I'm sure everyone recognizes that we have signed our land claim agreement with the State of New York. We've been participating in the hearings. I was here just last week to provide testimony before the senate. Tomorrow

(Introductions)

I'll be up in Syracuse to provide testimony before the state assembly. We look forward to the approval by the State of New York, and then to congressional approval, as well.

So with that, again, thank you for inviting us into your community. Again, we appreciate that, and we look forward to hearing your comments and meeting you here tonight. Thank you.

MR. CHANDLER: Now Amy Green will make a brief presentation on the project, hopefully to help you understand everything about the project.

Remember, this is a public hearing for the environmental aspect of this. When you do comment make sure you try to keep your comments to the impacts of the casino. Thank you.

MS. GREEN: Good evening. Again, my name is Amy Green. I'm a senior project manager with Rizzo Associates who are the consultant who is doing the EIS for the bureau and for the tribe.

Just very briefly, the setting of the casino location is along Route 17 at Exit 107. It's just north of there, along County Highway 161. The proposal, the site right now is the site of an old auto salvage operation and mining operation. There will be an entranceway that will be through, on the existing road down there. The casino will be in the back with structured parking along it, proposed for 3,000 slots, retail

(Presentation)

and restaurants and supporting facilities in there. Most of the parking will be in structures to limit the footprint of the impact.

There will be upgrade to Exit 107 which will coordinate with DOT, as well as some upgrades along the short stretch of 161 that the traffic will be moving along.

Water and sewer is going to be provided through agreements we have with the town and village. And I think really that's just the main basics of the project we want to give to you tonight. Thanks.

MR. CHANDLER: Ed from Rizzo will be opening up the public comments.

MR. IONATA: I'm just a name keeper tonight. What I'll do is call the person who is about to speak and then call the next person. If you'd like to come down just get in the on deck seat here, that would be great.

The first speaker is Ira Steingart followed by Michael Edelstein.

And if you are interested in using a stopwatch to see how you're doing, although it makes a lot of people very nervous, I have one if you want to use it.

MR. I. STEINGART: Good evening, gentlemen. Thank you for the opportunity to speak this evening. My name is Ira Steingart. I'm president of Steingart Printing, a four

1 (By Steingart, Ira)
2 generation printing company in Sullivan County for almost 100
3 years. I'm also assistant chairman of the Town of Fallsburg
4 Planning Board and I've been on the board for over 15 years.
5 In fact, I'm going to make it kind of brief tonight because I
6 have a meeting which I think I'm bound to be late for.
7 My points, and the reason I'm here tonight, is I realized
8 how important this public hearing is. Obviously, after the
9 many scoping sessions you've had, the Applicant has submitted
10 the DEIS. I just wanted to be on record that as a resident of
11 the county I am in favor of this project as I am of the four
12 other casinos. I realize being on the planning board there
13 are many issues that come up through the scoping, and I'm sure
14 the main ones being water, sewer, traffic and the runoff into
15 the river.
16 I know the Applicant, first of all, has agreed to pay all
17 hookup charges for the water and the sewer. They have a
18 municipal letter agreeing to have municipal water and sewer so
19 that certainly is a major part of any project of this size.
20 As far as the runoff, I know they've submitted their
21 runoff plan. The engineers from the BIA I'm sure have
22 reviewed that. And they obviously have to meet all criteria
23 and mitigate all the impacts in their final EIS.
24 The other point I wanted to make as a businessman in the
25 community, how important a project like this, as the other

(By Steingart, Ira)

four casinos, are. Being in business for almost 100 years, we, at one point, had hundreds of resorts as clients and now we have less than a handful. The importance of that are twofold: First of all, trying to survive in business up here, and the additional business that would be generated. But more importantly is years ago, in the heyday of Sullivan County, there were hundreds of resorts. The infrastructure back then was nothing compared to what it is today. The police department, the fire, the water and sewer, the roads are far superior. And with the rooms that are being, and the traffic that's going to be generated from these five casinos is far less than what we had in the our heyday. I think that's important to realize, that we're in much better shape than we were many, many years ago. Thank you.

MR. IONATA: Next is Michael Edelstein followed by Marc Baez.

MR. M. EDELSTEIN: I'm president of Orange Environment Incorporated, a non-profit, tax exempt organization in Orange County that is concerned with the environment and the sustainability of our county.

The reference to a heyday back during the resort period in this county is interesting because at that point in time Orange County primarily was a farming community and we had lots of hay. But unfortunately, we've undergone an

1 (By Edelstein, Michael)
2 extraordinary growth dynamic. My concern today is to call
3 attention to the traffic issues along the Route 17 corridor
4 and the related secondary impacts, and particularly air
5 pollution. These received some comments in the Draft
6 Environmental Impact Statement. I will hand you, when I'm
7 done, an analysis of the shortfallings of that analysis in the
8 impact statement because what we have is a highway system that
9 already, at times of the week, has a level of service that
10 fails. We're now talking about a whole series of cumulative
11 projects, including five casinos, which will dramatically add
12 to the traffic, along with other factors, that will
13 dramatically change the traffic flow in that corridor. It
14 already is not working. And the idea of building Sullivan
15 County's economy on casinos that depend on Route 17 to get
16 most of the people here will fail just as will the service on
17 that road. So we don't have a sustainable concept right now.
18 The air pollution issue just adds to it. Orange County
19 is out of compliance with the Clean Air Act for both ozone and
20 now for particulate matter. The analysis in the impact
21 statement particularly focuses on Orange County with regard to
22 the precursors of ozone. The problem with that analysis is
23 that it concludes that the impacts are not significant. The
24 reason it does that is that there's already so many precursors
25 of ozone, NOX and VOX that you already have, you're

1 (By Edelstein, Michael)
2 contributing a relatively small amount to a large amount. But
3 the point I'm concerned with is that you already have a lot of
4 these contaminants there. The problem with how we address
5 ozone is that because there are regional effects as well as
6 local effects, it's easy to just pass the problem off and all
7 we say we can't deal with it. The fact of the matter is that
8 it's our obligation to not generate additional sources of
9 ozone. Particulate matter is a new concern for us, but it is
10 about to become an overriding concern. Having a large number
11 of vehicles stalled much of the time on the Route 17 corridor
12 will add dramatically to this problem in a way that we cannot
13 legally pass over because, in fact, it's our obligation to
14 address this. The impact statement will have to look at this
15 very closely. Other factors likes cardon monoxide are
16 addressed for the Monticello sites, the local sites here. But
17 you will have CO and other impacts also along the Route 17
18 corridor in Orange County because you will have so much
19 stalled traffic. So the nature of the analysis, as presented,
20 concludes that there is no significant impact. In reality,
21 the impact is extraordinarily significant. There is no effort
22 to mitigate that impact put forward. Unless it's mitigated
23 but something like rail, which would take a substantial amount
24 of the traffic off of the Route 17 corridor, I don't think you
25 can approve this project. Thank you.

(By Edelstein, Michael)

MR. CHANDLER: Would you like to present any more at the end of the comment period?

MR. M. EDELSTEIN: I'll stay if I can, but I have everything on paper in any case.

MR. CHANDLER: Okay. Mail it to me, please.

MR. M. EDELSTEIN: I can't give it to you?

MR. CHANDLER: I would prefer that you mail it to me, that way we can date stamp it when we receive it at the bureau.

MR. M. EDELSTEIN: Why don't I hand you a copy and I'll mail you a copy. How's that? That way I have lots of witnesses.

MR. IONATA: Next up is Marc Baez followed by Charles Cohen.

MR. M. BAEZ: Good evening. My name is Marc Baez. I'm president and CEO of the Sullivan County Partnership for Economic Development.

I would like to make some comments with respect to the good neighbor policy that the Stockbridge-Munsee Band of Mohicans and Trading Cove Associates have purported themselves in the last four years. At every turn, when asked to change their plan to address either environmental issues or taxing issues in the trust area, or working with the state to mitigate some concerns that they have, this group, this

1 (By Baez, Marc)
2 development group has been forthcoming. It has done that with
3 honor and dignity. They've showed that they've been good
4 neighbors to Sullivan County.
5 With respect to environmental impacts in terms of the
6 traffic flow, obviously the project is just off Exit 107.
7 You're not carrying it on a tertiary road that's very long by
8 any stretch of the imagination. The ingress and egress of
9 this particular site is going to be very easy.
10 The other point I would like to make is I can't think of
11 any better use of taking a property that was a junkyard, that
12 had oil spills, that had contamination on that most likely,
13 and taking it and rehabbing that property for this particular
14 use, making a pristine resort casino destination there, as
15 well.
16 With respect to the comments on the traffic with Orange
17 County in relation to Sullivan County, there's been a lot of
18 development in Orange County. There's been development at
19 Woodbury Commons, there's been development at Stewart Airport.
20 And I see that that's been created on their own without any
21 indication or without any input from Sullivan County with
22 respect to our comments and how that affects us. At this
23 point, I think that the roadways are adequate for this
24 particular project. I think that this is a boom for Sullivan
25 County, and if anything, will be positive impacts with respect

1 (By Baez, Marc)
2 to what it's going to bring in terms of jobs, investment and
3 auxiliary businesses.
4 And as a final comment, when you're taking a look at
5 environmental impacts one of the things that an industry like
6 this brings to Sullivan County is natural gas, infrastructure,
7 better systems in terms of sewer and water that are absolutely
8 going to mitigate any long-term effects to our environment,
9 actually clean up some of the septic systems and things that
10 are located there and tie more people into those systems. It
11 has an overall long-term positive effect. So if you consider
12 those items, I would appreciate it. Thank you.
13 MR. IONATA: Next up will be Charles Cohen followed by
14 Jeff Manzi.
15 MR. C. COHEN: Good evening, gentlemen. Thanks for
16 having me here. My name is Charles Cohen. I reside in
17 Woodbourne, New York. I'm chairman of the Board of Fire
18 Commissioners. I've lived in Sullivan County all my life. My
19 parents had a hotel here. We were one of the 500 hotels in
20 the county.
21 I can remember the heyday of Sullivan County and the
22 decline of Sullivan County. I remember when you'd go through
23 the streets of Monticello 1:00, 2:00 in the morning, all
24 packed. Now you go through, a ghost town.
25 I'm in favor of the Stockbridge-Munsee Casino for several

1 (By Cohen, Charles)
2 reasons. Located off of Route 107, they come right off the
3 route. And they agree to do any exit changes that are
4 necessary.
5 Experience, the group now runs a very fine casino in
6 Connecticut. I don't know if any of you have been there.
7 I've been there a couple of times. A very beautiful place.
8 They agree to pay 15 million a year. All sales tax will
9 be paid to the county and state. It's estimated at about 5
10 million dollars going to the county. Agreed to collect the
11 room tax that the county has and give it to the county. To
12 pay all need improvements: Water, sewer and roads. The main
13 thing: Agree to have a union shop, which all building will be
14 done by union people and all work in there by union. Agree to
15 a sovereignty immunity. This allows employees, patrons and
16 vendors to sue in court should there be a reason for that.
17 I don't know if many of you people know this, but there's
18 about 2 and a half million dollars that leaves this state that
19 goes to Connecticut and New Jersey as gambling. Why not let
20 that money stay here in the State of New York?
21 Now, the gentleman that was here before from Middletown,
22 I don't see them crying when the traffic goes eastbound into
23 Middletown, out of Sullivan County, to do the shopping. I
24 don't hear them say anything. I don't hear them saying
25 they'll give us 2 percent of the sales tax they collect.

1 (By Cohen, Charles)
2 There's no more gas or anything, any fumes from the cars out
3 that way, so I guess if they get some of this money there will
4 be nothing.
5 And then also with the traffic, you've got to realize
6 this is not Yankee Stadium where the game starts at 1:00, ends
7 at 5:00. There's a rush of traffic coming in at 1:00 and a
8 rush leaving out. This is a 24-hour experience and the people
9 just come and go at their leisure. So I can't see much of a
10 traffic.
11 MR. CHANDLER: Will you have any more comments at the
12 end?
13 MR. C. COHEN: No.
14 MR. CHANDLER: Thank you.
15 MR. IONATA: Next up is Jeff Manzi and after Jeff Manzi
16 will be Bruce Reynolds.
17 MR. J. MANZI: Good evening, gentlemen. Thank you for
18 the opportunity to speak. I'm Jeff Manzi from Manzi Building
19 Corp.
20 My family has had a business here in Sullivan County
21 since 1972. I've watch a sister and a brother and another
22 sister leave because there was not enough opportunity here in
23 this area. I opted to stay behind, take care of the family
24 business, and found my solace in the outdoors. I can only
25 tell you that what I've watched happen on the Neversink in the

1 (By Manzi, Jeff)
2 last four years, what Trading Cove and these people have done
3 with that river is just incredible. To trout fish there now
4 is just a pleasure with the cleanup and things that they've
5 done. If that's any indication of what's to come, I'm all for
6 this project.
7 MR. IONATA. Thanks. Next up will be Bruce Reynolds
8 followed by Amy Goodstein.
9 MR. B. REYNOLDS: My name is Bruce Reynolds. I'm
10 president and CEO of A.T. Reynolds and Sons, d/b/a Leisure
11 Time Spring Water.
12 As a Town of Thompson resident, a fourth generation
13 business owner of over 120 years, and a taxpayer of Sullivan
14 County I would like to voice my support for Governor Pataki's
15 legislation for five Native American resort casinos in
16 Sullivan County. Years ago the Catskills, and more
17 specifically Sullivan County, was host to several hundred
18 resort hotels with more than 20,000 rooms available for
19 tourists. Today, as part of the proposal for five resort
20 casinos, we estimate total rooms created in the amount of
21 4,500. This is just a fraction of what we had back in the
22 60's, '70's and early '80's. We can handle the impacts of
23 traffic. We need the economic engine that the casinos
24 provide. We should take advantage of the economic
25 possibilities for our future or places like the Poconos in

1 (By Reynolds, Bruce)
2 Pennsylvania will reap the benefits of our lost dreams. We
3 are so very fortunate to have been chosen as a destination for
4 these resort casinos, and it is up to you to make this happen.
5 Each project will undergo two environmental impact reviews.
6 Each project will take place at different times through
7 carefully planned time schedules which will involve phases.
8 In addition, the state has fully articulated to us that they
9 will support our projects with economic support so that the
10 impacts faced by our county will be minimal.
11 I also believe that the Stockbridge-Munsee Tribe will be
12 a good neighbor to our community. They have agreed to pay for
13 all infrastructures, impacts to roads, water and sewer that
14 their project will need. I know the county and the Town of
15 Thompson have had good experience dealing with them. Please
16 pass this important legislation as it is a source of economic
17 stimulation for our county. Our community is depending on
18 you. Thank you.
19 MR. CHANDLER: Thank you.
20 MR. IONATA: Thanks. Next is Amy Goodstein followed by
21 Josh Sommers Cohen.
22 MS. A. GOODSTEIN: Good evening. My name is Amy
23 Goodstein. I am a resident and homeowner of the Town of
24 Fallsburg. We are minutes from your proposed casino site in
25 Glen Wild. Our property borders the Neversink River.

1 (By Goodstein, Amy)

2 We've very excited about this opportunity for not only
3 myself but for other residents in Sullivan County. I was born
4 and raised in Liberty, New York, moved away for several years
5 and moved back to join my family's business. We are in the
6 business of real estate development and providing affordable
7 homes for current residents of Sullivan County and for folks
8 that plan on moving here when the opportunity arrives.

9 I'm here tonight to tell you that you have my full
10 support in this project. I can't think of another, excuse me,
11 a better opportunity for Sullivan County. We've been waiting
12 for something like this for years. I'm 29 years old. I
13 remember the days when my grandmother was a hostess at
14 Grossinger's, and walking through the kitchen, the cookie. It
15 was just a very exciting time that we've missed out on. My
16 generation has missed out on the opportunity to stay here,
17 live here, work here and thrive here. We ask that you please
18 accept our support, and thank you very much.

19 MR. CHANDLER: Thank you.

20 MR. IONATA: Josh Sommers Cohen will be followed by Marc
21 Hudes.

22 MR. J. SOMMERS COHEN: Hello. My name is Josh Sommers
23 Cohen, president of a Monticello based public relations firm,
24 Focus Media, and spokesman for the Catskill Casino Coalition.
25 The Coalition is comprised of resort developers, organized

1 (By Sommers Cohen, Josh)
2 labor of the Hudson Valley and Catskill region, the members of
3 the Sullivan County community. Our organization also
4 represents the 1,400 businesses included in the memberships of
5 the Sullivan County Chamber of Commerce and Industry, the
6 Sullivan County Partnership for Economic Development and the
7 Construction Contractors Association. The Catskill Casino
8 Coalition also boasts the over 100,000 workers of the 224
9 regional AFL-CIO unions.
10 We support the proposed Stockbridge-Munsee Casino Resort
11 to be built at Bridgeville. So does the County of Sullivan
12 which has entered into an agreement with the tribe to cover
13 impacts with payments of 15 million dollars per year. The
14 County of Sullivan recognizes this casino development as an
15 engine which will fuel economic comeback. The casino resort
16 plan for the Catskills, which recent legislation proposes five
17 casino resorts for Sullivan County, will create tens of
18 thousands of long-term construction jobs and 50,000 permanent
19 union resort jobs. In addition, the five casinos resorts are
20 expected to have a total annual payroll of 1 billion dollars
21 creating many economic benefits, including a demand for new
22 retail choices in a county that's very underserved.
23 Our coalition also strongly supports the impact fee
24 contract that is in place between the tribe and the County of
25 Sullivan. Within the county wide picture, five casino resort

1 (By Sommers Cohen, Josh)
2 projects will pay a total of 75 million dollars per year to
3 the county budget which would be a 41 percent increase with
4 180 million dollars being total, mitigating impacts.
5 Above and beyond these impact payments, a projection from
6 the Sullivan County funded Spectrum report estimates an
7 additional 9 million dollars more per year added to the
8 Sullivan County share of sales tax revenue. The coalition is
9 also excited about the additional 50 million dollars per year
10 proposed in the legislation to improve our roads and
11 transportation and protect open space. The impact fee
12 structure that Sullivan has negotiated is world class, and
13 it's precedent setting. Thus, the people of Sullivan County
14 will be well protected.
15 In addition, Sullivan County can handle this growth. We
16 have already been there. A New York Times article, which I'd
17 like to submit today, is evidence, or I can mail it, from
18 1953, identifies Sullivan County as having 538 hotels, 50,000
19 bungalows and 1,000 rooming houses. Back then our
20 infrastructure was nothing like it is today. Sullivan County,
21 just like Orange County, is entitled to grow.
22 In regards to recent claims that our schools will be
23 slammed with tens of thousands of new students, this is simply
24 untrue and unfortunately being used as a desperate scare
25 tactic. According to a recent Pathfinder's report quoted in

1 (By Sommers Cohen, Josh)
2 the Sullivan County Spectrum Gaming report, it concluded that
3 the regional underemployment and unemployment of the work
4 force would mean that most of the workers for the projects
5 would come from surrounding counties, therefore, minimal
6 impact of the schools will be felt. Thousands of workers will
7 not all of a sudden move to Sullivan County. In fact, there's
8 a major housing shortage here. This, together with planning
9 boards, will keep control of the growth. Thank you.
10 MR. IONATA: Marc Hudes is next followed by Tom
11 Wasserman.
12 DR. M. HUDES: Gentlemen, thank you for coming.
13 This is the second letter that I've written regarding the
14 legalization and implementation of have casino type gaming in
15 Sullivan County. I sincerely hope this is the last one. As a
16 founder and managing partner of one of the largest podiatry
17 practices in New York State I feel compelled to speak out on
18 the subject again.
19 Although I think that one to three casinos are enough,
20 let them approve four or five and the survival of the fittest
21 will prevail. You are not going to see five casinos built if
22 only three will survive. The persons that run these billion
23 dollar operations are not fools. Approximately seven years
24 ago I was asked to support this cause, and I have not changed
25 my mind. Although there does appear to be a resurgence of

1 (By Hudes, Marc)
2 growth in the Catskills over the past two years, there's still
3 a long way to go. I'm sure, as you drove through Monticello,
4 you saw that.
5 The catalyst in the past few years, well-known to you as
6 the 9-11 catastrophe, as well as the increase of property and
7 home values in metropolitan areas have forced an egress from
8 the city to the country. People are now coming here because
9 they want to, and in some cases need to, since they can get
10 affordable housing here and still have access to the
11 metropolitan area. Fraught with problems such as increases in
12 narcotics, crime, gambling, prostitution, one has to offset
13 them against the positive aspects that the increase in the
14 middle class of all year-round residents will bring to the
15 table.
16 When the demise of the hotel resort industry came about
17 over the past 30 years, which I have lived through, along with
18 it came a loss of the majority of the middle class which is a
19 section of the population, as you well know, that drives the
20 economy in any and all successful communities, the type of
21 communities that we all want to live in, the type that we all
22 want to raise our families in, the type that brings our
23 children back after college to start a family and a career.
24 The influx of more employable persons to build, work for the
25 finished product and raise their families here substantially

1 (By Hudes, Marc)
2 offsets the negativity of this endeavor. The state is short
3 of money, the locals can't afford the taxes now. In their
4 current state the schools need more money to upgrade the
5 teaching and our infrastructure is collapsing. What more can
6 I say? The clock is ticking and we must not delay anymore.
7 When every state in the northeast has legalized gambling it
8 will negate our benefit. We should work at this point to make
9 this happen. The Native Americans' corporate structure will
10 give our community 15 million dollars towards our increased
11 costs in having the casinos here in addition to paying for
12 their own infrastructure in the form of roads, sewers, et
13 cetera. Is that enough? I don't know. But I would hope that
14 our legislators would do their due diligence and as we say in
15 our rotary club, we're going to try to make it fair to all
16 concerned. Thank you.
17 MR. IONATA: Tom Wasserman is next, followed by Burt
18 Yust.
19 MR. T. WASSERMAN: Good evening.
20 I've been a resident of this county my entire life. In
21 that time I've seen a tremendous deterioration in our economy
22 and employment opportunities. I've been following the casino
23 issue for many years and I've done much research on the
24 subject, including reading environmental impact statements and
25 other documents, as well as attending various meetings on the

1 (By Wasserman, Tom)
2 issue. I felt the time was right to voice my opinion.
3 There have been concerns raised about the population of
4 the county increasing at an unreasonable rate. The county
5 director of planning, Bill Palmer, speculated there would be a
6 25 to 50 percent increase. Looking at the area around the
7 casinos in Connecticut, may I point out that the town of
8 Montville grew 11 percent from 1990 to 2000. Population in
9 the town of Ledyard actually declined and the population of
10 New London County grew 1 and a half percent. Certainly,
11 Sullivan County can handle this sort of growth.
12 Further support of this is a study done by Spectrum
13 Gaming, which Josh mentioned earlier, for the Sullivan County
14 Legislature. The study states that the Pathfinder report
15 found that due to underemployment and unemployment in the
16 county that a majority of casino employees will commute
17 approximately one hour to work and will not move to the areas
18 directly around the casinos, thereby controlling population
19 and growth. Lastly on this point, since population growth
20 will not be drastic, the issue of overcrowding of schools will
21 not be the problem some anticipate.
22 On the subject of air quality, David Church, who is the
23 Orange County planning commissioner, has spoken on the effects
24 of traffic emissions and stated that this issue had not been
25 addressed. The Stockbridge group has specifically studied

1 (By Wasserman, Tom)
2 this on a local and regional scale in their very thorough
3 Environmental Impact Statement and have shown that emissions
4 do not exceed National Ambient Air Quality Standards, and less
5 than a 2 percent increase in VOC, which is volatile organic
6 compounds, and nitrous oxide.
7 Pertaining to schools, Mr. Church used a number of 48,000
8 new jobs and 40,000 students while making the assumption that
9 50 percent of these would be new students. Studies by three
10 tribes in the Sullivan study were remarkably consistent in
11 agreeing that there would be approximately 18,000 new jobs in
12 the three casinos. If we project new jobs at five casinos
13 that's still only 30,000 new jobs in contrast to the 48,000
14 Mr. Church assumes. The highest estimate for new students in
15 Sullivan County from new population would likely be located,
16 was 4,914 according to the county's study. This is
17 significantly less than the number Mr. Church was using and
18 continues to discount that new population will be spread over
19 a wide area.
20 The Stockbridge project has agreed to the following
21 significant revenue stream which has been mentioned this
22 evening, but I would like to repeat them. 15 million dollars
23 per year to Sullivan County for us to distribute this to local
24 towns, villages and schools. Paying sales tax conservatively
25 estimated at 5 million dollars per year. Paying room tax.

(By Wasserman, Tom)

They will pay all infrastructure impacts around the casinos for roads, water and sewer so local municipalities do not have a cost for these impacts. They're agreed with the Town of Thompson to get sewer and water at their expense. These are significant streams of revenue, not to mention the increased employee spending and new business revenue to local business which creates the best tax revenue for the county and town. This is what we have been missing for decades.

These are some very important topics, and I thank you for your time.

MR. CHANDLER: Thank you.

MR. IONATA: Burt Yust is, next followed by Ray Nargizian.

MR. B. YUST: Good evening, gentlemen. Thank you for coming. It's long overdue. Thank you to our guests also.

Welcome to Monticello, New York. If you'd like to walk down Broadway, our main street here, you will find out what depression is about and what environmental impact really means. It's a mess. Drive down there, get out of your car, come on down and take a look at it if you're brave enough. Don't say I didn't warn you.

I look at this beautiful building here. There are people who have objected the building of this. There are people who object to a two garbage can Rubbermaid structure in my

1 (By Yust, Burt)
2 driveway if I put it up. There are people who object. You
3 have a tribe, tribes coming here basically, wanting to build
4 something that will give us jobs. 3,000 construction jobs,
5 4,000 to 5,000 permanent jobs, and people object to it. I
6 hear: "Well, the Native Americans here have done this, the
7 Native Americans in Turning Stone have done that. They've
8 done this. They're horrible." I don't see that. I've been
9 to Foxwood, I've been to Mohegan Sun. I've seen prosperity,
10 I've seen courteous people, I've been treated nicely. There
11 is nothing here for our youth. We have lost our children.
12 Environmentally, the Mohican Sun people have done
13 everything they can. They safeguard the Neversink River,
14 they've cleaned up the area. They have created an easement
15 for fishing there where local fishermen will be able to go
16 there. What more do people want? A junkyard with discarded
17 oil cans? We have everything here for us. This is a golden
18 chance. What is important here is we consider the bottom
19 line, that the greater good be served.
20 Five casinos are not going to be built immediately. You
21 may have the first two: Kutsher's and Mohican Sun, basically.
22 Mohican Sun is willing to put a shovel in the ground if the
23 state votes okay and congress goes along with it. They don't
24 care about the lawsuits. They're brave enough, pardon the
25 expression, to gamble on our community. Many others aren't.

(By Yust, Burt)

I fully support this casino. These also are good people doing good things for the greater good. It is our golden chance.

And those who object to it, Orange County will not object to it, I promise you, if there is money going their way. As the gentleman said before, they did not object when Sullivan County shoppers went down there, nor to any other store area. Rockland County now wants in. They smell money. It's the name of the game. We have nothing here now. We have a golden infrastructure, a beautiful environment safeguarded by the plans of these people. This is our great chance. If we give it away the other states will eat our lunch. We cannot do it.

I once saw a bumper sticker that said: "Only Sullivan County Can Screw It Up." This time we're not going to screw it up, we're going do it right, and I pray you will help us.

Thank you, gentlemen.

MR. IONATA: Ray Nargizian next, followed by Rich Benjamin.

MR. R. NARGIZIAN: Good evening. My name is Ray Nargizian. I've been a resident of Sullivan County for 34 years. For most of those years my neighbors and my family have heard the catchy phrase "Casinos means jobs" and "Success is a traffic jam." Some of us have waited patiently while other were forced to move elsewhere.

As a resident I've witnessed hotels closing, businesses

1 (By Nargizian, Ray)
2 going bankrupt and our best asset, our children, being
3 exported elsewhere. My two children are graduates of this
4 high school. Both live in another state.
5 The naysayers are perfectly content holding the progress
6 back under the guise of traffic jams, pollution, morality and
7 the environmental problems. Their facts and figures can be
8 manipulated to apply to any business or industry they feel is
9 a threat to their country lifestyle. It is your job as
10 government representatives to sift through all the rhetoric
11 and make your decision based upon what is in the best interest
12 of a majority of the people and the Indian nation. Our local
13 population consists of family people, business people, working
14 people, both union and non-union, retired people such as
15 myself, and people just looking to be part of a community
16 which has growth potential.
17 Just the hope of gaming coming to this town has
18 transformed Sullivan County. Store owners have poured
19 thousands of dollars into their properties in anticipation of
20 a better economy and a larger population to support this
21 economic growth. Property values have doubled and in some
22 instances tripled, all because of the potential of the gaming
23 industry coming to Sullivan County. Upscale restaurants have
24 been opened. Motel and hotel franchises have purchased land.
25 Countless residents and developers have purchased properties

1 (By Nargizian, Ray)
2 to build lower income and higher income developments. The
3 ball is rolling. It is picking up momentum. The people have
4 spoken. Our legislators have spoken. We welcome the Mohawks,
5 we welcome the Cayugas, we welcome the Wisconsin Oneida and we
6 welcome the Stockbridge-Munsee Band of Mohican Indians.
7 In closing, I salute the Bureau of Indian Affairs for all
8 your efforts, for doing your due diligence and hopefully for
9 supporting the dream that so many residents want by expediting
10 -- supporting Indian gaming in Sullivan County. Today the
11 ball is in your court. You have the opportunity to once again
12 ace the minority opposition. The majority of the people in
13 Sullivan County embrace the participating Indian nation with
14 gratitude, respect and brotherhood. I, my wife, my children,
15 my friends, my neighbors, anxiously await the power to forge
16 forward and pave the road to potential prosperity for the
17 citizens of Sullivan County, the State of New York and the
18 Indian nations who so rightfully deserve the opportunity to
19 better their people's causes.
20 Thank you for this opportunity to express myself.
21 MR. CHANDLER: Thank you.
22 MR. IONATA: Rich Benjamin is next, followed by Les
23 Kristt.
24 MR. R. BENJAMIN: Good evening, gentlemen. I'm Rich
25 Benjamin. I'm the Town of Thompson Superintendent of

1 (By Benjamin, Rich)
2 Highways.
3 UNIDENTIFIED SPEAKER: Can't hear you.
4 MR. R. BENJAMIN: I'm usually pretty loud.
5 I'm here tonight to provide information about the
6 proposed casino projects and their impact on the town highway
7 system.
8 The Town of Thompson is 84 square miles geographically,
9 and there are 150 miles of town roads. Unlike many rural
10 towns, Thompson is bisected north and south by State Route 17
11 and east and west by State Route 42. These major arteries,
12 combined with numerous county roads, make for easy travel in
13 our town. Easy access, the town's infrastructure makes
14 Sullivan County and the Town of Thompson attractive to
15 development.
16 Thompson has seen tremendous residential and commercial
17 growth over the last two years. New home construction imposes
18 the largest burden on the town roads with numerous heavy truck
19 trips required during construction. Each new residence also
20 increases truck trips for deliveries of heating products,
21 refuse collection and the like. Of course, each new family
22 increases automobile traffic. Through proper engineering,
23 planning, zoning and code enforcement procedures, the town has
24 doing been a great job in welcoming new homes in our community
25 and will continue to do so in the future.

1 (By Benjamin, Rich)

2 During the construction of the casinos and the opening of
3 the casinos themselves we will have minimal impact on the town
4 roads. The proposed projects are all located on county and
5 state highways. Visitors to the casino will use Route 17 and
6 county roads to come and go from each casino. These
7 facilities are in operation 24, 7, and experience a steady
8 flow of traffic. The peak traffic flows are minimal.
9 Experience has shown that the traffic at the new racino is
10 hardly noticeable. All of the upgrades to the state and
11 county infrastructure will be paid for by the casinos. In
12 particular, the Stockbridge-Munsee Tribe has agreed to pay for
13 all improvements to the roads surrounding the Bridgeville
14 location. They've also agreed to finalize the Environmental
15 Impact Statement to include all five casinos, and that will
16 also include analysis on the impacts on our town roads.

17 The supervisor has taken a very proactive approach in
18 educating town officials on the impacts of the casino
19 projects. Over the last three or four years there have been a
20 number of public hearings, some meetings with representatives
21 of involved parties and detailed presentations of all phases
22 of the projects, including environmental and traffic studies.

23 Town of Thompson officials have met with local and state
24 officials in Connecticut and discussed the impacts Mohegan Sun
25 Resort has had on their communities. Based on what we have

1 (By Benjamin, Rich)
2 learned, the town believes the greatest impact to its highway
3 system will be from new residents and the employees of the
4 casinos. Local people will tend to use the town roads for
5 shortcuts to bypass congestion. The present average of daily
6 traffic counts of many of the town roads are less than 1,000
7 vehicles per day. If the planned casinos for Thompson were to
8 have a total estimated number of 12,000 to 15,000 employees
9 coming to and going from work 24 hours a day, it is clear that
10 there will be a significant increase in traffic counts. As
11 population and traffic densities increase, the level of
12 service the highway department provides increases as well.
13 Some costs may be immediate, but most will be spread out over
14 time. The town has 6.95 miles of main road, 21 and a half
15 miles of through road that we have identified are needing
16 improvements and repaving in the first three years. It is
17 also anticipated that the town may have to upgrade our snow
18 removal on some of the roads leading to the casinos.
19 MR. CLIFFORD: Time is up.
20 MR. CHANDLER: Do you want to add any more comments at
21 the end?
22 MR. R. BENJAMIN: No. I have all the details and I'll be
23 glad to mail it to you. Thank you very much.
24 MR. IONATA: Les Kristt is next. Gary Tugender follows
25 Les Kristt.

1 (By Kristt, Les)

2 MR. L. KRISTT: Good evening. Thank you for allowing me
3 to be here and to speak. My name is Les Kristt. I've been a
4 resident of Sullivan County for 58 years. I'm a graduate of
5 Cornell University School of Electrical Engineering. I have
6 also been in business here for 36 years and have employed as
7 many as 50 persons at once. As a matter of fact, I won the
8 Business Person of the Year Award for 2002 from the Sullivan
9 County Chamber of Commerce. Therefore, even though I am not
10 an urban engineer, I feel that I am highly qualified to give
11 my opinion on what the impact of five casinos would be in
12 Sullivan County.

13 What would be the impact on the economy? We can see it
14 already. With just a hint of casinos, property values have
15 skyrocketed. Just think of what would happen if there was a
16 number of multi hundred million dollar casino structures going
17 up here. Those, along with your auxiliary businesses, i.e.,
18 hotels, restaurants, gas stations and the rest, would make for
19 an incredible influx of persons looking to develop our
20 county. Before the real push for casinos all one could hear
21 was how high our property tax is and how we need help from the
22 state to jump-start our economy. The advent of the casinos
23 would almost guarantee an economic boom.

24 What would be the impact on the crime rate? Well, look
25 at Monticello now. I've read how cab drivers have been

1 (By Kristt, Les)
2 mugged, crack houses have been raided, how businesses have
3 been broken into time after time, how patrons have been
4 stabbed in bars over the last few years. Just maybe if there
5 were more well paying jobs and less desperation here we could
6 see a mitigating trend to these nasty occurrences.
7 What would be the impact on the ecology? The antis say
8 that there would be so much traffic here that there would be
9 too many noxious fumes. That's a joke. I remember the good
10 old days when it took over an hour to get through South
11 Fallsburg in the summertime. No one complained of too much
12 fumes. Everyone prayed they would all come back next summer.
13 Well, someone didn't pray quite hard enough. Those nice
14 people in the Town of Wallkill down the road from us are
15 surely not beating down the doors of government to prevent all
16 those shoppers and those cars from the Route 211 corridor with
17 their fumes. And let's face it. It is literally impossible
18 for there to be anywhere near the number of cars of Route 17
19 here on the busiest day as there are on any of the major
20 highways in and around New York City. Fumes are just not an
21 issue.
22 What would be the impact on Uncle Barney who may have a
23 gambling habit? No impact. He will continue to bet on ball
24 games with his local bookie, and there have been many of those
25 here forever. He will also continue to bet on state run

1 (By Kristt, Les)
2 lottery, lotto and other games. He will also probably take
3 his two vacations a year to Las Vegas to get away so he can
4 gamble there. Let's face it, Barney is a gambler if there is
5 or is not casinos here in Sullivan County.
6 What would be the impact on our morals? I think
7 absolutely none. You cannot legislate morals. Mom and Dad
8 must instill morals. I've been to casinos in Las Vegas,
9 Lisbon, Portugal, Monte Carlo and Macau, the Far East. It
10 just does not make me a bad person. I have also been the
11 president of my local rotary club and the president of Temple
12 Shalom. I give back to my community as much or more than any
13 of those who are against casinos.
14 What will be the impact on the county's infrastructures?
15 The road system, schools, refuse collection, water
16 distribution, waste disposal systems and police will need to
17 be enhanced dramatically. It will be a lot of hard work to
18 make the needed improvements. I, and I know many, many others
19 in Sullivan County, are ready to go to work to do just that.
20 I simply ask the appropriate governmental agencies, please,
21 give me an opportunity to begin working on this project.
22 Please allow Indian gaming in Sullivan County. Thank you.
23 MR. CHANDLER: Thank you.
24 MR. IONATA: Gary Tugender followed, by David Rosenberg.
25 MR. G. TUGENDER: Thanks a lot, Les. You said my whole

1 (By Tugender, Gary)
2 speech.
3 Good evening. I'm Gary Tugender. I'm the president of
4 County Fountain Supplies. I wasn't born here but I chose to
5 live here in 1977 when I bought my business. Unfortunately,
6 it's been all downhill since then, to the point where in 1996,
7 after fighting for years and years to try to stay in business
8 with all the hotels closing, every one of them being one of my
9 customers, we had to actually change our name and shift gears
10 a little bit. We dropped the word "Sullivan" and became
11 County Fountain Supplies. And we had to go further and
12 further and do more and more just to try to stay and survive.
13 My kids also are graduates from Monticello High School.
14 Now they both live in Boston because there was actually
15 nothing here for them. So my comment would be the greatest
16 impact that this project will have is that we'll resurrect an
17 otherwise dying county. Thank you very much.
18 MR. IONATA: Dave Rosenberg, followed by Lori Rubenstein.
19 MR. D. ROSENBERG: Good evening. Thank you for the
20 opportunity to speak.
21 In the past I've had the privilege of being a trustee for
22 the Village of Monticello for 12 years. My last official day
23 in office last year I was instrumental in pushing through the
24 water agreement that the village and the town have to help
25 make this project a reality. The wonderful thing about that

1 (By Rosenberg, Dave)
2 was it was a truly win, win, win situation. It's good for the
3 village in the future, it's good for the town. And certainly
4 it's going to be wonderful for this project, to make a
5 potable, clean, secure, safe water for them without
6 threatening the watertable. I'm proud of my participation in
7 that.
8 A day doesn't go by that I don't get solicited to come
9 down to Atlantic City. I go a couple times a years overnight.
10 I have yet to receive any solicitation from any town or
11 community not to pass through there with my money when I spend
12 it on my way down. If I eat in Orange County or Paramus or
13 whatever, they seem to like me and my money. And anybody from
14 Orange County is welcome to come here and spend their money
15 here as well.
16 Years ago I traveled to lower Manhattan to testify before
17 the governor's task force investigating the possibility of
18 casinos coming to the Catskills. I prefaced my remarks by
19 noting that if those hearings were held in Monticello there
20 would be no need for additional comments. Quite clearly, the
21 resort industry was in dire trouble. Nine long years later
22 we're still talking, only now the patient is dying. For all
23 intents and purposes, the resort industry here is dead. There
24 is a graveyard three miles from here. It's the Concord Hotel.
25 As a lifelong resident it is heartbreaking to witness what has

1 (By Rosenberg, Dave)
2 become of the world's foremost resort. Coupled with the eerie
3 sight of the equally deceased Grossinger's in nearby Liberty,
4 our beloved Catskills is quickly receding from folklore status
5 into oblivion. For decades many mom and pop small businesses
6 in every town and hamlet of the county thrived during the
7 so-called season because of the large hotels, not in spite of
8 them: The Ritz Theater, Newman's Pharmacy, the Di Leo's,
9 Diaco's Restaurant, butcher shops, bakeries. In White Lake
10 alone the list is endless. There were many wonderful facets
11 to our diverse county but it was the resort industry who gave
12 us our unique sparkle. I believe that only a resurgent resort
13 industry can bring the luster back. To do so they must be
14 allowed to compete both nationally and internationally with
15 every possible inducement, and that must include casinos.
16 This area achieved great fame and renown years ago in the
17 summer season that at best lasted 12 weeks. The presence
18 casinos would create a 365-day a year season. We can mourn
19 the passing of an era or we can move forward to a bright
20 future that can trace its roots to storied and cherished past.
21 We can be special again.
22 Thank you very much for letting us speak. And once
23 again, let me just reiterate. Without casinos in the resort
24 industry today, it's like asking somebody to build a world
25 class golf course that has seven holes. It just doesn't

1 (By Rosenberg, Dave)
2 happen. The simple reality is without casinos the resort
3 industry can never come back. It's not good enough, again, to
4 say we have the best kishke, we have the best bundt cake. It
5 doesn't cut it anymore. We have to have these casinos. It's
6 going to be good for the Indians, it'll be good for us. We
7 can't wait to be their neighbors. Thank you.
8 MR. CHANDLER: Thank you.
9 MR. IONATA: Lori Rubenstein is next, followed by Charles
10 Mormon.
11 MS. L. RUBENSTEIN: Good evening. My name is Lori
12 Rubenstein. I'm a member of the Board of Directors of the
13 Sullivan County Chamber of Commerce and I also serve as their
14 public relations liaison. Our president, John Westerhaig
15 (ph.) couldn't be here tonight so I'm speaking on his behalf.
16 On a personal note, I have had the pleasure of working
17 with both Glen and Mark Walman and Robert Chicks of the
18 Stockbridge-Munsee Band of Mohicans through the Chamber of
19 Commerce's Catskill Casino conferences for two years. Their
20 work with us has always reflected incredibly high levels of
21 professionalism and a keen sensitivity to reaching out to the
22 community of Sullivan County.
23 The Chamber of Commerce is a member based organization
24 serving the interests of its member businesses and the
25 business community at large. We currently have about 1,000

1 (By Rubenstein, Lori)
2 members and we provide support and advocacy for our members.
3 We have member businesses that are on both sides of the casino
4 issue for varying reasons, but to be clear, the majority of
5 our members support casinos for economic reasons.
6 Presume for a moment that casinos are here and operating.
7 They will change the business landscape and have a significant
8 positive impact on small businesses. In simple terms, they'll
9 bring more customers. 50,000 jobs in the job the county and
10 50,000 more consumers and families. Equally, more jobs mean
11 more customers and more customers means more business, more
12 business for the existing businesses and opportunities for new
13 businesses. There will, with great projects like that of the
14 Stockbridge-Munsee Band and their partners, Trading Cove
15 Associates, be a number of other significant positive economic
16 impacts, including a capital infusion of up to 3 billion
17 dollars, assuming all five casinos are built, increased
18 tourism, as well as indirect capital investments.
19 Taking a look at what we mean by more customers in terms
20 dollars and cents and give you a review of the numbers that
21 are really quite impressive, total consumer expenditures in
22 Sullivan County in 2003 were just over 1 billion dollars.
23 With five casinos and 50,000 permanent jobs representing a 1
24 billion dollar payroll, apply the multiplier of $3.85 for
25 every dollar spent in our county, then consumer spending

1 (By Rubenstein, Lori)
2 becomes a very significant factor even if you assume only a
3 portion reside in Sullivan County initially. This example
4 best illustrates the direct impact the casinos will have in
5 creating jobs, and ultimately customers in Sullivan County.
6 Non-casino capital investments will further stimulate even
7 more economic activity related to further job creation and
8 investment, including casino construction, housing
9 developments, schools, commercial retail development and
10 related infrastructure improvements. Furthermore, taxes paid
11 by local businesses cover the shortfalls in providing services
12 to us, the residents of Sullivan County. This county needs a
13 strong and a growing base of businesses.
14 In conclusion, I'd like to quote one of the chamber
15 members. She once said: "Casinos bring jobs, jobs bring
16 people and people need places to live. Now you're talking my
17 business." This might only be the statement of one person
18 referring to the real estate arena but it conveys a sentiment
19 that's clearly shared across many businesses of varying
20 products and service in Sullivan County. If a strong economy
21 in Sullivan County is a priority then the direct and indirect
22 investments, jobs, customers and tourists that casinos will be
23 bring are needed and should be welcomed.
24 Thank you for your time.
25 MR. CHANDLER: Thank you.

(By Mormon, Charles)

MR. IONATA: Charles Mormon is up. John Wombacher next.

MR. C. MORMON: How you doing tonight.

Like a few people said, pretty much everybody said the same thing as I'm going to, but shorter. My name is Charles Mormon. I've owned a little honky-tonk tavern in Loch Sheldrake for over 30 years. And believe me, we've been suffering and going backwards ever since. Ever since I've been in business I've been going backwards.

We've been waiting for gambling for 30 years. I mean they throw the carrot in front of us and then they pull it away. We should be like the greyhounds chasing that thing. The bottom line is I want it, we need it, and we need it now. We need to stop the bleeding. We can't wait any longer. We just can't take it anymore.

And, you know, this tribe here, they came to us. They want to spend money. They're doing everything the proper way. I don't know why we're fighting them. We should be welcoming them. I personally would like to welcome them to Sullivan County because we need you. We need you. Thank you.

MR. IONATA: John Wombacher is up, followed by Chinmayi Gorzen.

MR. J. WOMBACHER: Thank you for allowing us this opportunity to speak to you. I respect the opinions of everyone here tonight and their right to speak. I feel that

1 (By Wombacher, John)
2 many people are not grasping the enormous consequences of this
3 proposal. Some people are being misled by the best of
4 marketing campaigns and people are deliberately choosing to
5 ignore the facts in a greedy pursuit of monetary gain. And
6 it's too bad that this proposal has so divided this community
7 because in effect, in reality, our opinions matter very
8 little.
9 The decisions that are going to count in this proposal
10 are being made in the back rooms of Washington power centers,
11 in the penthouse suites of five-star hotels and the opulence
12 of corporate jets. The plan is so ludicrous and ill-
13 conceived. It has prompted capable leaders such as John Mc
14 Kane to call for -- to urge federal gaming laws be enforced
15 and for such people to say that state leaders are being
16 blinded to the consequences of these type of plans allowing,
17 even encouraging, alien Indian tribes to saddle us by
18 conducting enterprises which are completely illegal at great
19 expense not only to the environment, local communities,
20 further burdening taxpayers and cannibalizing area businesses.
21 This plan is an appalling perversion of the Indian Gaming Act.
22 The tribal recognition process is a farce, so disturbingly
23 flawed as to be laughable.
24 To allow Sullivan County to suddenly be home to a massive
25 number of repugnant addiction centers is incomprehensible.

1 (By Wombacher, John)
2 Clogged highways, an estimated doubling of bankruptcies,
3 economic hardship, sociological damage, thousands of problem
4 gamblers, incalculable demands upon local schools, law
5 enforcement agencies, et cetera, et cetera. The DEIS has
6 somehow mysteriously accounted for very few of the serious
7 environmental and social impacts of these proposed money pits.
8 How can that be, Mr. Chandler? The people of this county
9 deserve, by law, a more accurate assessment of the effects
10 this proposal would have. And for you to say that nothing is
11 going to happen is blatantly untrue. It's a whitewash. This
12 area will be completely unrecognizably transformed by this
13 plan.
14 For whatever reason, the cheerleaders and the lap dogs of
15 the gaming industry hyped this sick and disgusting plan. Let
16 the truth be known, sir. Gambling ruins communities. It
17 promotes the disease of addiction, and if allowed to
18 proliferate it will dramatically reduce the quality of life
19 for the residents of this county. This area is not equipped
20 to handle the traffic, the crime, the congestion, the
21 pollution, the school children. And who's going to pick up
22 the tab? The taxpayers, the taxpayers who are already
23 overburdened with some of the highest taxes in this country.
24 Thank you very much for your time.
25 MR. IONATA: Next is Chinmayi Gorzen, followed by Tina

1 (By Gorzen, Chinmayi)
2 Nazarian.
3 MS. C. GORZEN: Hello. Hi. My name is Chinmayi Gorzen.
4 I've lived in Sullivan County for 25 years. I'm a business
5 owner. I'm also a therapist.
6 I was born in Michigan. When Windsor, Ontario opened the
7 first gambling casinos, I, at the time, was a substance abuse
8 counselor and I came to see the results of the first gambling
9 casino in our area. People who didn't think they were
10 addicted to gambling became addicted. I got a chance to see
11 the outcome of that, which was more drunkenness, more drunk
12 driving offenses, more crime, more brokenness, more
13 bankruptcy, more broken families. They all said the same
14 thing: "I didn't think I had a problem when I first started
15 going. I was just going with my friends to have fun."
16 Gambling is a hidden addiction and it doesn't come out until
17 the person is very well steeped in it.
18 I didn't want to come here tonight, but I can't believe
19 that this could possibly even be a thought, of having five
20 casinos in this small community of already sort of a -- we
21 have a lot of problems already with addictions. But gambling
22 is not an uplifting contribution to this environment. If
23 economics are the question, there's so many other choices.
24 That's basically what I have to say. I can't see how anyone
25 can think that we are such a poor community that that's the

1 (By Gorzen, Chinmayi)
2 only thing we have to offer our people, is gambling casinos
3 for upliftment in economics?
4 I would also like to ask that we extend the public
5 comment to this DEIS until May 12th. That's 45 days, I think.
6 But that's what I have to say. I think it's really a pretty
7 ludicrous idea and a very potentially fatal one.
8 Thank you for your time.
9 MR. IONATA: Tina Nazarian is next, followed by Dick
10 Riseling.
11 MS. T. NAZARIAN: Hi.
12 First let me say we don't know what the majority wants
13 since we haven't voted on it as residents of the county. I do
14 know that I do speak for many, many people like myself.
15 I grew up in New York City in tough neighborhoods where
16 you had to watch your back all the time, in New York City
17 where the snow turns to soot almost before it hits the ground.
18 Ever since I was a child, more than anything in the world I
19 dreamed of living in the country where the air was cleaner, it
20 was quieter, there was less crime and you were surrounded by
21 nature. Finally, 16 years ago, for the first time in my life
22 I had some money and was able to buy a home here. The air is
23 clean, the snow stays pristine and white, it's quiet and I
24 feel and have been safe.
25 I live within minutes of four of the proposed casinos, a

1 (By Nazarian, Tina)
2 half mile off of Route 42 and a couple of minutes from Exit
3 107. If these casinos are built I'm going to have to move.
4 Traffic will be a nightmare. Air pollution will be a health
5 hazard. I already had cancer. I can't afford to take chances
6 with my health. It's been shown over and over that the
7 proposed impact fees don't begin to cover the actual costs of
8 these casinos to the county so my taxes, which are already
9 almost $7,000 a year for a very, very modest house, are going
10 to go up. I won't be able to afford to live here. I'm not
11 retired. I have no pension plan, no Social Security. I have
12 to keep working. I work for myself and regularly use Route 17
13 to go to New York. What is that road going to be like with
14 millions of cars a year, 24 hours a day, 7 days a week?
15 If casinos open crime will inevitably and dramatically
16 increase, as we heard our own county sheriff and district
17 attorney testify at the senate hearing. My home will be
18 vulnerable to burglaries and robberies and I, myself, will be
19 vulnerable to violent assault. That's what I came here to get
20 away from.
21 I'm not opposed to the wonderful growth that's been
22 happening in the county, and I disagree that it's because of
23 the casinos. There are new homes everywhere. Businesses and
24 restaurants are open. A performing art center is coming with
25 all the spinoff businesses it will generate. That's great.

1 (By Nazarian, Tina)
2 Let the development be smart and planned and manageable and
3 occurring naturally. Five casinos will devastate the county.
4 These proposed casinos are the result of land claim
5 settlements with tribes that are not from Sullivan County and
6 have no land claims here. Almost all the casino workers will
7 be from outside the county. Is it fair for the governor to
8 settle these land claims in upstate New York by sacrificing
9 Sullivan County, turning it virtually overnight into a casino
10 town dominated by one industry?
11 Researching casinos and their impacts is not something I
12 want to be doing, yet for the past year I've had to do it.
13 What I've learned is that casinos do not help the economy of
14 any community they are in. The governor of Nevada, for one
15 example, announced that the state's relying on gambling
16 revenue has been a failure and the state is billions of
17 dollars in debt. The entire state of Connecticut, with only
18 two casinos that they are not happy with, passed a law so that
19 no more casinos can be built there. They have a huge budget
20 deficit, tourism has declined, property values near casino
21 routes have declined and property taxes have increased. How
22 are casinos going to work here when they haven't worked
23 anywhere else?
24 And just one more thing. In Monte Carlo, by the way,
25 which someone mentioned, the residents themselves are not

1 (By Nazarian, Tina)
2 permitted into the casinos because of the devastating social
3 impacts such as gambling addiction.
4 I request, also, an extension of the deadline for public
5 comment on the DEIS so that environmental groups such as NRDC
6 can do a proper review. And a review of all five casinos
7 needs to be done. Thank you.
8 MR. IONATA: Dick Riseling, followed by Neal Halloran.
9 MR. D. RISELING: Good evening. My comments will be
10 limited entirely to the EIS of the Stockbridge-Munsee Band of
11 Mohicans.
12 The EIS references that the 333 acre tract will have a
13 casino and certain ancillary buildings, such as a warehouse, a
14 hotel, service station and convenience store. And then it
15 says: "No other development is anticipated." I'm sorry, that
16 language is not acceptable. You take into land and trust the
17 entire 333 acre tract. No other casino project is proposing
18 anything like that. Most of this land must go into land in
19 fee. So we need a clarification of that. And many of us will
20 insist that most of that footprint at the casino be designated
21 as land in trust and everything else go land in fee so there
22 could be tax collected, like the other four projects.
23 I want to also talk about some of the things that are
24 missing in the EIS. We would like to see what a 15-story
25 hotel looks like. We need a visual impact. The EIS document

1 (By Riseling, Dick)
2 says that it's put into a depression so it will not have much
3 of a visual impact. We'd like to see it. We have some
4 pictures over here. We'd like to see the real thing.
5 We'd also like to see a rendering, a physical rendering
6 and a visual rendering of the electrical grid that's going to
7 take place here. We're talking here over 10 million, 10 and a
8 half million megavolts here. This is just one of a string of
9 casinos. NYSEG has not been forthcoming about this. Maybe
10 this tribe, maybe the EIS when you redo it again, as you must
11 because you know it's very incomplete. You have to do five.
12 This is just for three. I don't even know why we're having
13 this meeting when you have to do five. But since we're here
14 we're glad to get our points across as best we can. Let's get
15 an electrical grid. Let's get it shown, see what it does to
16 the highways, see what it does to visual impacts.
17 What about a study and a visual presentation of what
18 happens to night light pollution? We would like very much to
19 know what this casino and the other casinos do in this regard,
20 as well.
21 I also want to reference the fact that this EIS says that
22 you're using No. 2 fuel oil. This is one of the dirtiest
23 fuels there is except for coal. And you do this because
24 propane, a cleaner fuel, is not sufficiently available at this
25 site. Of course, it's not in the northeast in general. We

1 (By Riseling, Dick)
2 thank you for the candor there, but clearly, there's something
3 absolutely missing here when we talk about the particulates.
4 One percent increase in VOCs, I didn't know that engineers
5 were so susceptible to the delusion of many economists and
6 many illiads. But I am tired of wading through these EIS's.
7 We've looked at several. We've at them, several, in their
8 different incarnations. We are sick and tired of this
9 disingenuous, this actually false mendacious engineering
10 delusions. We need to understand clearly, folks, that lungs
11 and nerve tissue, these things are deeply traumatized. There
12 is no accounting for public health here.
13 So finally, please, take a look. When you do your EIS
14 for the five casinos, don't bring any factious EIS's. At
15 least show that you have the intelligence.
16 And one final challenge for all you who think you
17 understand economics. Let's have a debate about net export,
18 for crying out loud. Let's understand how the economics
19 really works. For every one dollar in you get three bucks
20 out. That's the whole plan, that's what they're planning on,
21 that's what you're going to get.
22 MR. CHANDLER: Would you like to add more at the end?
23 MR. D. RISELING: I will submit much more detailed
24 writings by mail.
25 MR. IONATA: Neal Halloran, followed by Evelyn Stern.

1 (By Halloran, Neal)

2 MR. N. HALLORAN: Thank you for the opportunity to speak
3 tonight. I'm a resident of Cochecton in Sullivan County and I
4 work in Orange County.

5 I guess there are many reasons why I think there should
6 be some concern or interpretation about these possibly five
7 casinos, but I'm going to be a little bit selfish tonight and
8 just talk about my personal concerns.

9 I, along with several thousand people from county and its
10 many businesses in the county, use 17 on a daily basis, to
11 commute to work and to conduct business. My concern was with
12 the traffic impact. There is no doubt there is going to be a
13 traffic impact on 17. And certainly, everybody will take that
14 during the summer. There is an impact already where it shuts
15 down, particularly Saturday -- Friday nights and Sundays. So
16 my concern is with those of us who happen to be on 17 and
17 those of us who are going to move into the county if there are
18 five casinos, what's going to happen to the traffic and what's
19 going to happen to us being able to commute. I'm probably
20 going to have to find another way to get home. The extra
21 mileage that it's going to cost me is somewhere between 3,000
22 and 6,000 dollars a year just because of the extra mileage.
23 Hopefully it's only 3,000 because I'll only have to do it in
24 the afternoon. I hope that 8:00 in the morning or 7:00 in the
25 morning there won't be that much traffic going to the casinos.

(By Halloran, Neal)

But if I do have to sit in the traffic, my concern is about the health of myself and others. My family has a history of asthma. And even though the overall air quality in the county may not be damaged that significantly, certainly sitting in traffic does make that impact.

Tonight we hear several different things that I hear. One person is saying there's only going to be 38,000 jobs. I hear the Chamber of Commerce saying there's going to be 50,000. The numbers here are phenomenal. The difference between them alone as to what that means in spinout traffic, we know we have the average, the visitors to the casinos. We also have increase in people. New houses have a trip generation of six to eight trips for each house. If we only had 20,000 new houses, that comes out to 120,000 to 160,000 trips a day as a result of the generation of these houses. There have been several studies submitted showing the possible impacts of traffic. I'm not sure. I'm have not a traffic engineer. I certain hope that you hire someone to do that and look at it more carefully.

Thank you.

MR. IONATA: Evelyn Stern is next, and then Ken Gorzen.

MS. E. STERN: Hello. I'm concerned about the traffic. I use Exit 107. And gee, it's only a two-lane highway and often in the summertime it's pretty well clogged. I notice

1 (By Stern, Evelyn)
2 that many people have said that during the heyday here of the
3 resorts they were very happy with the traffic that lined up
4 Monticello and on the roads and they felt that that would be
5 certainly sufficient for what's happening here. But what they
6 didn't talk about was the fact that during the heyday of the
7 resorts most of the traffic and all the people came by rail so
8 that there were very few cars here. And all those people who
9 were in the bungalow colonies and in the hotels, they didn't
10 have cars. So I think that there is something fallacious
11 about this story that we are able to handle the traffic.
12 That's a bit of my concern.
13 Also, knowing what the traffic is like in the summertime,
14 you know that insurance in Sullivan County for cars is as
15 expensive as in New York City because of the amount of
16 accidents that happen here. And surely, that's going to
17 increase tenfold by the resorts.
18 I come from a family who has relatives in Atlantic City.
19 I've been going there for all my life and I can certainly tell
20 you the deterioration of that city. Needless to say,
21 everybody knows about the violence and the drugs and the loss
22 of all the businesses, sound right that surely is going to
23 happen here.
24 People are talking about the fact that property values
25 are going to increase because of gaming. No, I don't believe

1 (By Stern, Evelyn)
2 that's true. Property values are increasing because people
3 are coming up here because land is cheaper and Orange County
4 and many other places are getting, you know, overpopulated.
5 This is close to New York City so it's great. But that's the
6 reason why property values are increasing and people are
7 building.
8 And I hear about something that don't sound right to me
9 -- what I'd like to do is ask for an extension of the written
10 public comment period to May 12th to give an opportunity for
11 the environmental groups, such as NRDC, to study the impact
12 statement. Thank you.
13 MR. IONATA: Ken Gorzen is next, and then Margaret Hazen.
14 MR. K. GORZEN: My name is Ken Gorzen and I live in the
15 Town of South Fallsburg.
16 I'm calling to request an extension of the public comment
17 so that the Natural Resources Defense Council can do a more
18 in-depth study. I don't really know that much about the whole
19 process with the casinos, but I hear a lot. Any time the
20 picture is painted to be so great it always makes me question
21 what's wrong, so I'd like to have that looked into.
22 MR. IONATA: Margaret Hazen, followed by Irene
23 Greenfield.
24 MS. M. HAZEN: Good evening. Thank you for having me.
25 My name is Margaret Hazen. I left Manhattan a few years

(By Hazen, Margaret)

ago to come up here, and I did open a successful restaurant and ran it for nine years. As I read here that you're going to have 5,000 new jobs and 15,000 full-time construction people working, I wish I was back in the restaurant business again. I can't tell you how much I welcome you and we look forward to what you're bringing to our county to help us grow.

A tough group to follow here. You had a nice group earlier that were kind of on my side and had said things that I was going to say. But I'm not going to be repetitive and repeat.

Again, I want to say thank you for coming and I hope everything goes well. I hope to see you soon in our county.

MR. IONATA: Irene Greenfield is next and then Jean Thursh, I believe.

MS. I. GREENFIELD: I'm a 47-year resident of Sullivan County and I choose to stay here. I hope you support the casinos and all the supporters before me. I would like to see Sullivan County shine again and I think this would be a great vehicle. Thank you.

MR. IONATA: Next, Jean Thursh and then Todd Diorio.

MS. J. THURSH: Good evening. My name is Joan Thursh and I live in Woodbourne.

The South Fallsburg and Bridgeville exit on 17, which is No. 107, is the one I use, which is the site of the proposed

1 (By Thursh, Joan)
2 Stockbridge-Munsee Casino. Many years ago, when I began
3 visiting here regularly, one of the first things I was told
4 was: "Don't take 107 in the winter. The hill can be
5 dangerous. Go down to Exit 105 instead." Yet that dangerous
6 hill in Bridgeville is where they want to put their casino.
7 The Bridgeville site is not land meaningful for the
8 Stockbridge-Munsees. Neither they nor their ancestors ever
9 called it home. In fact, none of the tribes seeking to
10 intrude into Sullivan County has any existing or claimed
11 territory here. Perhaps that's why none of their DEISs,
12 including the one presently under review, even considered the
13 devastating impact five enormous casinos will have on this one
14 county. It's not their problem. Why should they care? We
15 here are the ones who will have to bear the social,
16 environmental and financial consequences if casinos are forced
17 upon us. Traffic congestion, particularly in the three to
18 four month summer season, is already a major burden. There is
19 neither money or expansion room to remedy the unimaginable
20 congestion tens of thousands of additional vehicles every day
21 would bring. Air quality in this county is already poor. Our
22 neighbor, Orange County, which would also suffer massive
23 traffic gridlock on 17 and the local roads, presently has one
24 of the worse air pollution problems in the state.
25 In general, research has shown us that the consequences

1 (By Thursh, Joan)
2 of five casinos will be an overwhelming infrastructure for,
3 ballooning crime and addiction, financial and health failures,
4 the degrading of our way of life and the desecration of a
5 still beautiful county which many of us are working to grow in
6 a sustainable, attainable way that is in harmony with the
7 environment and with the emerging trend of the 21st Century.
8 Clearly, our state's only interest in this county is the
9 revenue they believe they can suck out of it. And the
10 ineptitude of local legislators in investigating casinos'
11 negative impacts on us has been well publicized so there's no
12 need to embarrass them further here. They've already
13 embarrassed themselves.
14 We look to you to, to Washington, to our federal
15 representatives, for relief, for justice, for attention to
16 these very real concerns. We who live in Sullivan County are
17 also American citizens who have the right to the consideration
18 and protection of our government. At the very least, the
19 people here deserve, and the law demands, a complete unbiased
20 assessment of accumulative impacts by off reservation casinos
21 will bring. We ask you to grant no approval to any of the
22 casinos until such an assessment is completed.
23 And I would also ask for an extension to make all the
24 comments on this EIS. Thank you very much.
25 MR. IONATA: Todd Diorio is up, followed by Sonja

1 (By Diorio, Todd)
2 Hedlund.
3 MR. T. DIORIO: I'm Todd Diorio, president of Hudson
4 Valley Building Construction Trades Council. I represent 30
5 local trade unions and approximately 25,000 members.
6 Being responsible for so many members, family and
7 friends, myself, as well as the officers of the building
8 trades, took the time to learn the impacts. We looked at the
9 studies that were done. We looked at the reports that they
10 had done. We had the opportunity with the tribe, and also the
11 developers, to get all this information and study it.
12 The traffic issues, we're sure there's going to be a
13 little bit of traffic. We understand, from what we see, the
14 road is going to absorb it. It did at the time when the
15 hotels were in existence. We feel that the traffic, there
16 will be a minimal traffic, but we're working on things with
17 I-86 currently, right now, and several other road projects.
18 I've personally been talking with the DOT and with some of our
19 congress people in reference to monies for I-86.
20 The economic part of this, for us it means jobs. I mean
21 this area has been a very slow area for the building trades.
22 At sometime in 2004 we reached, actually, the county itself
23 reached 7 percent total unemployment rates. Right now we're
24 currently at about 40 percent to 50 percent of the building
25 trades who are currently unemployed. So we looked at the

1 (By Diorio, Todd)
2 numbers. There's going to be about 3,000 construction jobs
3 created just with this one project with Stockbridge-Munsees,
4 and 4,500 permanent jobs once it gets started. This group has
5 made, both the tribe and developers, have made a commitment to
6 good wages with health and pension. They've made a commitment
7 for project labor agreements which means good wages in this
8 area, as well as the unions through the hotel workers, et
9 cetera.
10 Just a couple other comments that I wanted to hit on. A
11 couple comments that were hit on, they said there's no roots
12 here with this tribe. We've seen the history. I have
13 personally learned a lot about the Indian history in the last,
14 God, a year, being involved in all this. They do have
15 ancestral roots back here in Sullivan County, and there is
16 proof to prove that.
17 The EIS has identified and taken a hard look at the
18 following issues from the reports that I've seen. Traffic:
19 The infrastructure can handle it. Ambient air quality
20 standards will be met. It's right in the study if anybody has
21 taken the time to actually read it. They have done
22 presentations on the height of the hotel, 15 stories. And
23 there will be no visual impact with the road. I've seen their
24 presentation several times.
25 They have taken measurements to protect the quality of

1 (By Diorio, Todd)
2 the Neversink River. Many of my members, being in
3 construction, are hunters and fishermen. Before we went out
4 we surveyed a lot of our members to make sure it isn't just
5 construction jobs, it's quality of life in this area. We want
6 to make sure that what we do and the decisions we come out and
7 what we lobby for is the right thing to do. It's not just
8 about construction jobs, it's about quality of life and also
9 the environment.
10 We also feel there's no need to extend the open comment
11 period. It's been open. There's still until March 27th that
12 they can write in. So we feel there's been plenty of time.
13 Everybody had the opportunity to come here to speak today.
14 It's not like you limited the amount of speakers. So we can't
15 have this delay anymore. It's the whole object of some of the
16 antis out there, to continue to delay, to delay, to delay.
17 And I'll end with that.
18 MR. IONATA: Sonja Hedlund, followed by Neil Sapolsky.
19 MS. S. HEDLUND: It's always nice to go after Mr. Diorio
20 because we argue about unions. He's very concerned about
21 union workers getting the jobs. But it's the ones who work at
22 the casino after that aren't in the union because most
23 reservations are not union.
24 My name is Sonja Hedlund. I live in Callicoon Center.
25 For more than 25 years I was a civil, a public servant working

1 (By Hedlund, Sonja)
2 for the New York State Health Department. I ran the state's
3 cardiovascular disease prevention program. Heart disease is
4 the leading cause of death in our state.
5 The EIS that I looked through doesn't really talk about
6 one environmental impact sufficiently. The way it's written
7 now is that the workers who will work at this casino are being
8 put at risk of all kinds of illnesses, emphysema, lung cancer,
9 stroke, heart attack, because of secondhand smoke. There is
10 no provision, as I understand it, for workers to be kept safe
11 from these illnesses. In New York State in July, on the 24th,
12 of 2003, a law was passed that you can't smoke where people
13 are employed. Given that situation, I think you need to look
14 at that more carefully.
15 Secondly, the traffic and how it impacts me as a small
16 business owner, I run a guesthouse for people who want to have
17 vacations on farm. None of my customers will put up with the
18 waits that will be going on on Friday afternoons and Sunday to
19 visit my farm and have a nice weekend in the country.
20 Secondly on traffic, for local farmers, which I also am
21 raising sheep and goats, farms have a hard time in New York
22 State. We're trying to take advantage of the market in New
23 York City. We are going to have a new slaughterhouse here
24 within a year and we are going to be processing different
25 kinds of meat and selling produce to the best market where

1 (By Hedlund, Sonja)
2 we'll get the best price. That's in New York City. The
3 traffic on 17 will make that really impossible to get to in a
4 reasonable manner.
5 And finally, I don't think that the casino, this one and
6 all the others, will ever make it possible for us to see the
7 night sky again. There will be so much pollution that we
8 won't be able to enjoy it.
9 And my last question to you, just something I don't
10 understand. How is it that a group of people, a tribe, can
11 buy a piece of land, make it a reservation and then they can
12 have casino gambling there. Could they do that in Westchester
13 or Louisville or in Nashville? I just don't understand how
14 that is possible. Thank you.
15 MR. IONATA: Neil Sapolsky is up now, followed by Dave
16 Colavito.
17 MR. N. SAPOLSKY: Good evening. Thank you for coming. I
18 hope you made it through the traffic jam on 42.
19 Just a couple of things come to mind when I think about
20 the casinos that are coming. It's really a no brainer. You
21 hear about the environmental impacts and traffic. I've driven
22 to Atlantic City on a weekend and on the Atlantic City
23 Expressway, which is pretty comparable to 17. I don't see the
24 traffic jams that people are talking about. And also, as for
25 the traffic, this isn't the Meadowlands after a Jets game.

1 (By Sapolsky, Neil)
2 You don't have 75,000 people pouring out of one little
3 building, coming out of one little parking lot at the same
4 time.
5 I grew up in the city. I'm up here about three years
6 now. I always hear the story about the heyday when we would
7 come up here as a family when I was a kid. And, you know,
8 there were a thousand hotels. Here we're talking about five,
9 five different casino resorts. I'm sure we can handle it.
10 And they're paying for the infrastructure and they're giving
11 money to our county. All I know is when I go to small town
12 resorts at the Jersey shore they love us. I mean, you know,
13 they can't do enough for us. We really pour into their towns.
14 We take up all their parking spots. You know, we take up the
15 beach. They can't do enough for us. When we walk by the
16 houses, you know, giving the kids a drink, whatever. So I
17 don't think that will be a problem.
18 I know Las Vegas spent millions, hundreds of millions of
19 dollars in the '80's and '90's trying to make it a family
20 resort area. We have that right here. We have camping, we
21 have skiing, boating, mountain biking, Bethel Woods being
22 built up the road, and now gambling. It will be a real all
23 year resort.
24 And I just think it's -- also, you know, with the Orange
25 County, everybody is talking about this Orange County. I know

(By Sapolsky, Neil)

there's almost 500 employees over at Shop Rite that got laid off this week. I don't think they'll turn down jobs when it comes down to it, if they can get a job here.

I just think it's just time to just pull the trigger and make this happen. Thanks.

MR. IONATA: Thanks. Next is Dave Colavito who's followed by, I believe it is Jeffrey Moore. I may have the last name wrong.

MR. D. COLAVITO: I'll be sending you some more detailed written comments.

As somebody who chooses to live here, as somebody who has to cover quite a few miles each day traveling east on Route 17 to get to his job each day, and as somebody who hunts deer along this Neversink River, I'm well aware that this proposal for a casino is part of a larger proposal to put five casinos in this area and that casinos in this area will amount to wholesale makeover of the community character of this area and turn it into something that it never, ever was, not 30 years ago and not 50 years ago, regardless of how many hotels were here.

For this draft environmental impact statement to not fully consider the effect of five casinos only serves to foster the impression that the folks on the inside are not giving it to us straight. You know, you can polish up this

1 (By Colavito, Dave)
2 DEIS any way you like. You can have it tell us that there
3 won't be any unmitigated adverse impact of the Neversink
4 River, of the Delaware River watershed. You can tell us that
5 the millions of additional vehicles on our area roadways won't
6 cause health problems by significantly increasing the level of
7 pollution of the air that our families have to breathe and
8 that it won't cause our automobile insurance rates to rise and
9 that we won't have significant traffic problems. You can tell
10 us that the thousands of additional children in our area
11 schools won't cause our school taxes to rise. And you can
12 ignore, as this DEIS does, the effect of pricing pressures on
13 people who are forced to live on fixed income like the poor,
14 the elderly and disabled. You can relegate to some provision
15 in the state compact that doesn't even exist yet the
16 documented effects and the costs of increased rates of
17 bankruptcies and addiction, and increased costs associated
18 with rising crime that is sure to happen. You can do all of
19 that. And you know what? This casino dog, it still doesn't
20 hunt and I'm not buying what you're trying to sell. Thank
21 you.
22 MR. IONATA: Jeffrey Moore is next, followed by Lorraine
23 Halloran.
24 MR. J. MOORE: Thank you, gentlemen for being here and
25 taking comments.

1 (By Moore, Jeffrey)

2 The previous gentleman just made a few points that I was
3 going to make so I'll be fairly brief. But some of the other
4 people had already made some comments that I think need a
5 slight preface. Some of what you've heard distinguishes very,
6 very clearly, more than I even wrote down to say, but it's
7 required to say.

8 There's a massive difference between the rural segments
9 of this county: The river corridor along the Delaware, the
10 northern regions. There's a rural population here. And many
11 of us, many thousands of us are not dissatisfied with our
12 lifestyles the way so many people make it sound. I'm very
13 happy here. It's a question of conserving and protecting what
14 we really have here. I'll just repeat one or two of the items
15 just said, but it's worth repeating.

16 The EIS technically only covers cumulative on three, as
17 you know. And I assume that we will be back to see you again
18 when the corrected full EIS is done. I may not technically be
19 right about that, but this is not covering what we are going
20 to have here. The governor gave us five or none. The county
21 voted for five. We need to see what the cumulative impacts of
22 five are. I think that is crucial.

23 The county's web site, its print ads, its radio jingles,
24 the chamber's web site, print ads, almost every realtor that I
25 ran through in the last few days, their web sites, their print

1 (By Moore, Jeffrey)
2 ads, they're all stressing open space, crystal clear rivers,
3 pristine mountains, et cetera, cleanliness, all kinds of
4 lovely things that we have. The state of the county was two
5 weeks ago given by the chair of our legislature. We're doing
6 fairly fine, we're doing fairly well. There's nothing broken,
7 no ground to be broken one or two or three or five or ten
8 casinos. We're on the upswing. Everyone admits that. This
9 is not about one gaming complex but about five. The
10 cumulative impacts will be brought upon us way too fast for
11 this place to absorb. I've been here full-time since 1980.
12 That's 25 years. I'm on a farm. Life is not that bad for
13 many thousands of us. Absorbing what we're talking about, be
14 it 20,000 or 30,000 or 18,000 in school children, it makes no
15 sense. The ground hasn't been broken on the schools that will
16 have to be built. And those of us who live in the western
17 portion are just dealing with a massive nightmare on just one
18 new high school that was built called Sullivan West. I won't
19 even get into that discussion, there's no need to. But I'm
20 saying imagine starting seven, eight, nine more schools in the
21 next few years to accommodate the workers who would have to be
22 in the five that they want so badly. It's really quite a
23 nightmare.
24 We haven't talked about, in fact, I don't think I heard
25 the word yet tonight. It's called sprawl. There will be

1 (By Moore, Jeffrey)
2 major spillover effects. The subdividing and the housing that
3 will be required will sprawl over the open spaces. We'd still
4 have something called local home rule in this county and the
5 towns have the final say on housing developments and planning,
6 but there's no coordinated effort. There's very little
7 comprehensive planning. Those things are being worked on
8 right now. This is way soon. We're a few years ahead of
9 ourselves. There has to be a comprehensive plan. There has
10 to be areas set aside. This is not being done. It's being
11 worked on, it's not done.
12 We also have to realize, I'm probably running low on
13 time, but I think understating the impacts is not serving us
14 well.
15 MR. CHANDLER: Would you like to add any more at the end?
16 MR. J. MOORE: Yes, I will definitely. Thank you.
17 MR. CHANDLER: Thank you.
18 MR. IONATA: Lorraine Halloran is next, and then Jim
19 Halloran.
20 MS. L. HALLORAN: Hi. My name is Lorraine Halloran. I
21 moved here 18 years ago to get away from the congestion and
22 the fumes and everything of New Jersey. I have severe asthma
23 and I go to Middletown and Harris Hospital to get my
24 treatments. And if I get stuck in any traffic and have an
25 asthma attack there will be no way anyone can get me and help

1 (By Halloran, Lorraine)
2 me out. I carry a lot of inhalers but if I don't have the
3 help, I can't talk at those times so I won't be able to talk
4 to get the help to help me and I could die in those cases. I
5 heard no one talk tonight about asthma or lung problems, and I
6 think that's a big case.
7 And I also work at a day care. The children play
8 outside. The fumes of all the cars, they say, I got a report
9 from the lung association that said the fumes that are getting
10 the children at a young age to have asthma, it's because of
11 the fumes of the cars. And I know I'm losing my voice, but I
12 do that too. So this is all I want to say. I'm really
13 concerned about that. Thank you.
14 MR. IONATA: Jim Halloran and then Ms. Rosa Lee.
15 MR. J. HALLORAN: Hi. Thank you for letting me talk. My
16 name is Jim Halloran from Narrowsburg.
17 I guess we've heard an awful lot tonight about the social
18 effects of this, also the economic effect, traffic. I wanted
19 to concentrate on what the previous speaker you called had to
20 talk about, the effect on the quality of life up here, the
21 effect on we people don't like it the way it is.
22 You look into the fact that there will be an awful lot of
23 housing required. That's really true. To get that we're
24 going to be cutting down forests, cutting down fields. The
25 place isn't look like we don't even like.

1 (By Lee, Rosa)

2 We talk about other things going on. We talk about maybe
3 white water rafting or mountain biking, that sort of stuff.
4 If we get all of this crowd of people and this sprawl it just
5 isn't going to happen and we're not going to be able to
6 attract these people. We have Bethel Woods coming in, we have
7 stuff going in in Rock Hill. We have other ways of making
8 Sullivan County a good, growing entity. And growth is
9 necessary. I hope my grandchildren stay here. But I think
10 that the way it's going with casinos just isn't going to do
11 the trick. Please, please consider the effect on us. Thank
12 you very much.

13 MR. IONATA: Rosa Lee is next and then Mike Canazon.

14 MS. ROSA LEE: Good evening. Thank you for this
15 opportunity to speak. My name is Rosa Lee. I am a healer.
16 For the past 12 years I have operated a health retreat in my
17 home in Rock Hill, just off New York State 17.

18 My great-grandmother was a Cherokee Indian. She traveled
19 on the Trail of Tears when the white men drove her people out
20 of the southeast across to Oklahoma so I am forced to look at
21 both sides of this obscene, corrupt, vile vice the government
22 is plotting and planning to bring to this region and to
23 Sullivan County.

24 These casinos are not to benefit the Indians, they are to
25 benefit the greed heads who have lost all consciousness of

1 (By Lee, Rosa)
2 man's purpose on this earth, which in case you don't know it,
3 is to take care of the earth, which in turn takes care of us.
4 I hunted for four years in three states to find a
5 location on water so all the elements necessary for healing
6 could be present and that I could afford. Now it is
7 threatened because it's an eighth of a mile from Route 17. It
8 will no longer be a clean, quiet, peaceful place. It will be
9 contaminated by air and noise pollution. The foxes, raccoons,
10 bears, beavers and herons that are by my facility will all be
11 driven away. My clients who come from all over the country
12 will become contaminated instead of cleansed, and contaminated
13 again on the highway when they leave.
14 An aside, I read in the paper last week that greedy
15 developers are already buying up properties and turning
16 tenants out in mid winter when there's no place for them to
17 move to because there's no affordable housing to be had in
18 this county.
19 Your Indian Land Claim Settlement Act is not being
20 administered the way it was intended. The corrupt influences
21 of Las Vegas are using the poor Indians at the front to get
22 their casinos into any depressed counties they can bribe,
23 blackmail and corrupt their way into.
24 I saw the Indian tribal leaders at the New York State
25 hearings in Albany last week come up to the testimony table

1 (By Lee, Rosa)
2 with slick suits on each side of them. I heard one tribe
3 leader say they have spent 50 million dollars already before a
4 shovel has even been put into the earth. What, pray tell, are
5 they spending 50 millions dollars?
6 And the teamsters who are hoping to get construction jobs
7 are probably unaware that their pension funds are invested in
8 the gaming industry. Bad karma for their sons and daughters.
9 I was told, when I was 19 years old, by an elder that I
10 would one day have her powers. I asked what I must do to
11 prepare. She told me: "Nothing. When the time is right the
12 teachers will appear." And they did.
13 I am the daughter of a gambling addict from southern
14 California in the late '30's and early '40's, when Las Vegas
15 was just getting started. It took me 30 years of my life to
16 climb out of the insanity that was my early years. It would
17 cost, in today's dollars, approximately a quarter of a million
18 dollars for my rehabilitation.
19 In my mid 20's I lay in a hospital bed awaiting surgery,
20 terrified to move because I was told I was bleeding
21 internally. And I vowed that if God spared my life I would
22 dedicate the rest of it to his service, and I have. My
23 patients say: "God bless you." And I tell them: "He has."
24 It took 30 years to understand the causes and effects that
25 created my life. It took another 20 years to scrimp and save

1 (By Lee, Rosa)
2 to create my healing center. Now, at 67 years of age, I find
3 my life being consumed again by this vice called gaming. I
4 have earned the right to stand here and tell you that you will
5 be cursed and your children will be cursed if you continue to
6 pursue this instrument that will be the destruction of our
7 society.
8 Time Magazine reported in the January 31st issue of this
9 year on page 20 that 11 percent of the elderly are becoming
10 problem gamblers. The politicians are plotting to destroy the
11 middle class, trying to dismantle Medicare and Social
12 Security. Teens are conditioned from toddlerhood to look for
13 ways to get something the easy way. The government has
14 already destroyed the educational system and there's little
15 housing for the poor. So what's left? Sex on the internet,
16 hooking up drugs and gambling. If this is a parallel to
17 ancient Rome, I don't know what is. It is stupid to bring
18 people from areas outside this region and plunk them down
19 among strangers and allow them to destruct the lives of those
20 who have lived here for decades and stay here because they
21 appreciate life outside the fast lane.
22 MR. CHANDLER: Your time is up. Would you like to add
23 more at the end?
24 MS. ROSA LEE: Just a little bit.
25 It is an invasion and can only lead to trouble.

(By Canazon, Mike)

MR. CHANDLER: Ma'am. Time is up. You can do that at the end, after everyone else has talked. Thank you.

MR. IONATA: Mike Canazon, followed by Naomi Jaffe.

MR. M. CANAZON: Good evening.

MR. H. BRANTZ: Speak in the mic.

MR. M. CANAZON: Good evening. I've heard a lot of comments here tonight and most of them seem to have revolved around money and jobs, rising property values. So I hope I don't bore anybody, I just came to talk about water. Okay? It's probably our most precious resource that we have here in the Catskills.

MR. H. BRANTZ: Speak in the mic. We can't hear you.

MR. M. CANAZON: I'm going to refer to Appendix 5 of the DEIS. The casinos group says they plan to generate their own power. Okay? Someone else was wondering about the electric usage. Well, they plan to run 400 gallons of diesel fuel per hour on the site. They will generate their own electricity. And they will store over 100,000 gallons of diesel fuel right on the banks of the river. Okay? Besides the obvious danger of storing this fuel along the river, there's a more subtle danger.

Someone else asked about the amount of air pollution. Well, in their studies, which I'm going to use their charts, they show that they will produce 191 tons of nitrous oxide a

1 (By Canazon, Mike)
2 year, which I well know from my years of construction, that's
3 a known carcinogen; and 58 tons a year of sulfur dioxide that
4 will be released into the atmosphere. Now, what happens to
5 these gases when it rains, as it so often does here in the
6 Catskills? Well, I'll tell you what. It's going to combine
7 with water and that sulfur dioxide is going to drop right into
8 the river and have sulfuric acid. So whatever fish is there
9 and whatever forms of life we have in that river, they're
10 cursed from the day this project goes forward and will
11 absolutely devastate and kill that river.
12 Without detailing the New York State Department
13 Environmental Conservation concerns over the models the
14 developers used to construct water usage and waste loads,
15 again, I'll just take the simplistic approach that they
16 employed. They compared themselves favorably to Mohegan Sun
17 Casino in Connecticut. In the Environmental Impact Statement,
18 the water usage from the casino, the Sun Casino in August of
19 2002, was over a million gallons a day. This directly
20 contradicts the 534,000 gallons per day they have contracted
21 from the Village of Monticello, which at this point, the
22 Village of Monticello only has a 900,000 gallon per day
23 surplus. So that's going to use up all of the water that the
24 village has to offer. Okay? That's only one casino. If you
25 add three more, one of them twice the size of this casino,

(By Canazon, Mike)
you're talking about 4 to 5 million gallons of water a day being withdrawn from our aquifers. You know, that's just incredible. I'm not a hydrologist, but the amount of water we have here is not limitless. You know, I can see people's wells going dry, you know, in dry years.

Aside from that, all the wastewater from four casinos will go into the Town of Thompson treatment plant. At this point they have the capacity to treat 1.3 million gallons so there's no capacity for more casinos. If 80 to 90 percent of the water used is returned to the river it would increase the flow of effluent by almost 4 million gallons per year.

MR. CHANDLER: Your time is up. Would you like to speak more at the end?

MR. M. CANAZON: Yes, I would surely like to do that.

MR. CHANDLER: Thank you.

MR. M. CANAZON: I just wanted to say that I think that, you know, the period should be extended for these hearings and for comments because there's just too much to be considered here with the impacts on the flows to the Delaware and the Delaware Basin Commission. Thank you.

MR. IONATA: Naomi Jaffe is next, followed by Kim Pecor.

MS. N. JAFFE: My name is Naomi Jaffe. My family has lived in Glen Wild for 100 years. I was born there and grew up, Monticello High School, Class of 1961.

1 (By Jaffe, Naomi)

2 I have a couple of things to say from personal experience
3 about the so-called heyday. Like almost all the young people
4 that I grew up with, I left. I left because those resort
5 jobs, they're low paying, dead-end jobs. Most of us in the
6 heyday of the '60's and '70's left Sullivan County. I came
7 back, after looking around the world, to finally to be in a
8 place that I think is the most beautiful in natural beauty and
9 to take care of my old parents and try to save my family's
10 48-acre farm.

11 One other thing about the heyday, one that is it
12 definitely had its drawbacks for those of us, those many of us
13 who left. And the other thing is that I think it's misleading
14 to compare the scattering of small bungalow colonies and
15 hotels that operated for 12 weeks a year, which people came up
16 for some fresh mountain air and to swim in our beautiful
17 streams to the kinds of amenities and the kinds of impacts
18 that will be had by a concentration of even one casino, a
19 concentrated impact of the level of amenities that's required
20 for people that come to gamble as opposed to people who come
21 to breathe our mountain air. So I think that even one casino,
22 let alone five casinos, will unalterably and forever change
23 the rural character and natural beauty of our area.

24 And I want to just say from my own experience on the
25 ground something about those natural areas. My farm, which

1 (By Jaffe, Naomi)
2 I'm struggling to save now from developer pressure, is on the
3 ridge. The back of my farm is on the ridge facing that
4 proposed site of these casinos, separated from them by the
5 Neversink River. That area between Glen Wild and Bridgeville
6 is a six square mile area of pristine, forested classical
7 Catskills foothills, highlands, of hardwood, mixed hardwood
8 and kind of a forest of every imaginable kind of wildlife, and
9 fresh springs and streams and trails that are enjoyed by
10 people. This is the first line of defence against urban
11 sprawl. Sullivan County is unique in being the line of
12 defense against urban sprawl that is moving upward from
13 Westchester, Rockland and Orange counties. Sullivan County is
14 the first place you could come, the closest place you can come
15 from New York and get a breath of fresh air.
16 And the second natural area that I want to talk about
17 that I know on the ground, and intimately, is also incredibly
18 weak and incredibly threatened by this project, and that is
19 the Neversink River Gorge. It's a unique area which is a
20 10-mile wilderness gorge that begins just below this project
21 in Bridgeville and extends down to Cuddebackville. It's an
22 area of rolling natural wild wilderness beauty, a deep river
23 gorge. Again, the refuge of all kinds of wildlife, natural
24 wildlife and forest, flora and fauna, not comparable really to
25 anything else within 100 miles. Those who haven't seen it

1 (By Jaffe, Naomi)
2 really should go take a hike down there. It's an incredibly
3 beautiful, precious area through which the Neversink River
4 flows just after it goes through Bridgeville, the Neversink
5 Gorge Natural area.
6 I guess those two natural areas I think are -- there's no
7 way that they're not seriously threatened by light pollution,
8 development pressure, air and water quality and visual impact,
9 wind and sprawl.
10 And one last thing that I want to say is that I am a very
11 strong supporter of the rights of Native people and their land
12 claims. I believe that we, New York State, have an obligation
13 to restitution for the injustices that have been done to
14 Native people, that New York State and Sullivan County should
15 bear our share of it. I can't think of a more inappropriate
16 way for us to do that than to split up all this natural
17 beauty.
18 MR. IONATA: We'll take a short break while the
19 stenographer changes paper.
20 Kim Pecor is not going to speak. The next speaker will
21 be Jack Hirschfeld.
22 (A short recess was taken.)
23 MR. CHANDLER: We will continue now.
24 MR. IONATA: This is Jack Hirschfeld and then it will be
25 D.J. Vogel.

(By Hirshfeld, Jack)

MR. J. HIRSCHFELD: My name is Jack Hirschfeld. My address is in Forestburgh but I live just over the line in the Town of Thompson.

I'm going to skip some stuff that I have written down here. I'll probably send it on to you to save some time.

I wasn't born in the U.S. In Germany, where I was born, I was not permitted to be a citizen for ethnic reasons. Eventually the German government deprived my family of its livelihood, it expropriated its property, so I am somewhat sympathetic to efforts to reclaim some of what has been lost to broken promises and broken treaties.

I'm aware that this building was erected on red man's land and that the soil is soaked with red man's blood. And yet nevertheless, I have no confidence that the solution to centuries old claims lies in despoiling the land, fouling the environment and creating an economy of risk for those who live here and elsewhere. You have heard a lot about those issues, and I don't intend to go on about them. But I know that there is one aspect of the environment that the DEIS does not address. I'm speaking of the sociopolitical environment. I believe it's possible that over time the residents of this county might be persuaded to experiment with casino gambling by permitting a casino resort to be built here. As more business development of a traditional nature finds its way

1 (By Hirshfeld, Jack)
2 here and unemployment continues to decline, however, the level
3 of opposition has grown. Yet still, this area is still
4 somewhat depressed. And despite my conclusion that the
5 benefits of casino gambling are a losery, almost half the
6 population here would probably favor some kind of casino
7 gambling. But the imposition of five casinos simply presented
8 by the governor as an all or nothing proposition can only
9 increase distrust of government and public servants.
10 In addition, I believe that the bad feeling created by
11 this proposition could be placed at the feet of the Native
12 Americans who administer these casinos. And I fear a backlash
13 as an unintended outcome of the governor's plan. Both of
14 these effects are visible at some other locations of Indian
15 gambling. But at least in those communities the Native
16 American population was already present and the people in the
17 community had some current history with them and not only
18 ancient claims. I am appalled that government at any level
19 finds it more important to assure the gambling interests that
20 there will be no referendum than to assure our citizens the
21 right to determine their own destiny.
22 I want to continue to live in this community. I work
23 with organizations that try bringing our people together and
24 to create projects of sustainable development. The
25 establishment of this casino, and especially the establishment

1 (By Hirshfeld, Jack)
2 of five casinos, is an obstacle to such unity and such
3 development and is detrimental to the social and political
4 climate of Sullivan County.
5 I know that protecting the democratic rights of the
6 people of this county is neither the mission of your office
7 nor the scope of this hearing. But I earnestly request that
8 you not join the conspiracy to deny the people of Sullivan
9 County the opportunity to decide for themselves on a issue so
10 vital to their lives and their future. Thank you.
11 MR. IONATA: D.J. Vogel is next, followed by Hal
12 Teitelbaum.
13 MS. D.J. VOGEL: Hi. My name is D.J. Vogel. I'm a
14 resident of Glen Wild.
15 I just have to kind of laugh about the irony of talking
16 about an environmental impact statement. I think the
17 operative word here is "impact." The impact of the
18 Stockbridge-Munsee casino is not about short-term
19 inconveniences, it's about issues of ongoing traffic, air
20 pollution and placing infinite demands on finite resources
21 such as clean water. The casinos are about thousands of
22 gallons of sewer and waste disposal and adding tons of garbage
23 to our already strained county landfill.
24 The promoters and money-changers investing in casinos are
25 quick to insist that the casinos will spend big bucks up front

1 (By Vogel, D.J.)
2 to mitigate the impact on the environment. But what about
3 cumulative effects of any casino over a period of 5 years or
4 10 years or 20 years? What about the rural community we will
5 lose? I suggest that any casino in Sullivan County is not
6 about the long-term welfare of Sullivan County. Casinos are
7 not about controlled, thoughtful planning or environmental
8 foresight. The Stockbridge-Munsee Casino and all proposed
9 casinos are really about quick fixes for old land disputes and
10 for long-term challenges. They're about quick profits for a
11 few at our expense, the residents of Sullivan County, and at
12 the expense of our environment and health.
13 MR. IONATA: Hal Teitelbaum is next, followed by Phil
14 Chase.
15 DR. H. TEITELBAUM: Hello. My name is Hal Teitelbaum. I
16 am a resident of Sullivan County, and I'm the managing partner
17 of Crystal Run Health Care, a group medical practice employing
18 over 700 people in Orange and Sullivan counties.
19 As a physician I understand the issues of the uninsured
20 and the impact that the lack of insurance has on the health
21 care of our residents. The Stockbridge-Munsee project has the
22 ability to significantly improve access to health care in this
23 region by providing significant numbers of new jobs with
24 health care benefits. Financial well-being may not be
25 sufficient for improved health care and a better environment,

1 (By Teitelbaum, Hal)
2 but experience has repeatedly shown that it is an essential
3 component.
4 I would also like to comment as someone whose family has
5 owned property and owned businesses in Sullivan County for
6 greater than 60 years, although I, myself, was not born here.
7 We have witnessed the good times in Sullivan County and have
8 seen what Sullivan County has become more recently. I've
9 listened with interest to the comments about the visual impact
10 of casinos. Nobody seems to be considering the visual impact
11 of crumbling buildings, of abandoned tractor trailers rusting
12 on the side of the road and rusting junk. Nobody has talked
13 about the failed septic systems which we see throughout
14 Sullivan County, polluting our waterways, our streams, our
15 lakes, our rivers. These problems continue to plague Sullivan
16 County despite the best efforts of our citizens over the past
17 several decades. Those who attack the casino plans are
18 failing to propose and implement plans to rectify the
19 situation. They have had decades to do so. While there is a
20 new more positive attitude in Sullivan County, much of this
21 improvement stems from the belief that Sullivan County will
22 soon again take its place as a premier resort destination.
23 Overall, however, New York State is in a very bleak financial
24 situation. Should casinos not come, I feel that the malaise
25 of recent decades will intensify and the economy of the region

1 (By Chase, Phil)
2 will stall. I strongly support, and respectfully urge that
3 you support the Stockbridge-Munsee Trading Cove project and
4 the other proposed casinos. Thank you.
5 MR. IONATA: Phil Chase is next, followed by Larry
6 Solomon.
7 MR. P. CHASE: I'm from Deerpark. That's the lowest part
8 of the Neversink River, below the Neversink Gorge. I'm the
9 representative from Deerpark for the Upper Delaware Council.
10 I've gone to the Delaware River Basin Commission meetings in
11 Trenton since 1994. They are working on a plan at the present
12 time with trying to get better releases for the Neversink
13 River to improve it.
14 To tell you how important good trout fishing is, in 1996
15 at Hancock a study was done, professional economic study was
16 done, and it showed trout fishing alone, only on the New York
17 side, not even the Pennsylvania side, only in the County of
18 Delaware, represented 17.7 million dollars for only a
19 three-month period. The kickback from that, actually the
20 spinoff I should say, the spinoff actually was 30 million
21 dollars.
22 Now, the Neversink River, I've been involved in trying to
23 get better releases since the 60's with very little luck. We
24 have had a coalition, a Catskill Waters Coalition, that got
25 state legislation passed in 1976 that took control away from

1 (By Chase, Phil)
2 New York City with their own releases, the reservoir releases
3 which we alway try to get improved, and put them in the hands
4 of the DEC, the New York State DEC. At the end of fours years
5 the New York City DEP sued the New York State DEC and came up
6 with a stipulation of discontinuance. One of the stipulations
7 was if you get any more water you're going to have to pay for
8 the loss of the electricity, because there was a generator on
9 the Neversink at the time. So since 1980 the State of New
10 York has paid $250,000 per year to New York City because we
11 got a trickling of releases. Now a trickling of nothing is
12 still nothing. You don't have enough water in that river.
13 It must take cold water for a good trout fishery. The
14 one problem that can be seen in the future is that if you have
15 three casinos with their effluent going into the Neversink
16 River, even though it might be clean, the temperature of that
17 effluent can't compare to releases. The releases are in the
18 low 40's. That's what trout need. So if there's a flow
19 target at Bridgeville, which the DRBC is looking at, whatever
20 volume that comes out of those sewage plants will decrease our
21 releases from the reservoir. I've gone to the politicians in
22 Sullivan County asking for help to get more and better
23 releases and the first question I get is: "Where is the
24 Neversink River?" They don't know, they don't care. The only
25 thing they worry about is the immediate dollar. And we never

1 (By Chase, Phil)
2 get any help from Sullivan County politicians with the fight
3 against New York City. Only the sportsmen and the DEC have
4 been able to do that. So please consider this effluent that
5 is going to be warm. It will be like rainwater. And it does
6 not add to the trout fishery which could be a multi, multi
7 million dollar industry. Thank you.
8 MR. IONATA: Larry Solomon is next, followed by Ephraim
9 Sher.
10 MR. L. SOLOMON: My name is Larry Solomon. I'm
11 representing the Peter Gordon Fly Fishermen, about 600 members
12 and probably thousand of other individuals that can't be here.
13 I can appreciate -- I live in Orange County and I've
14 spent 40 years coming up here and enjoying the natural
15 environment. And having a lot of people who are in business
16 up here, I can appreciate the change that has occurred with
17 some people's businesses. When it was called the heyday, and
18 there were resorts that operated sometimes all year long, and
19 the bungalows part-time, the people came up here, as was
20 mentioned before, to get into a beautiful environment, to get
21 away from the humdrum, to get away from the cities and enjoy
22 what was there. Now, when you have these casinos, the people
23 who come to casinos, they don't care whether it's the middle
24 of the desert, which was Las Vegas. That's what Las Vegas
25 did. They took a place that nobody wanted to be in and they

1 (By Solomon, Larry)
2 made it habitable, because people will go to gambling. They
3 don't care where it is. They don't care what's around it.
4 They don't care about the environment for the most part.
5 You'll get an element up here that's coming up here for booze,
6 for gambling, for drugs, for prostitution and take advantage
7 of all of it without caring about what the environment is. We
8 try to preserve what we have. This particular river, just
9 looking at this river, will suffer dramatically.
10 And saying that there is, I don't know how many gallons
11 of storage on the banks, of the No. 2, I remember a stream in
12 Westchester that had the storage and everybody promised:
13 Don't worry about it. And then they had an accident and the
14 river died. Well, you know, I wish we could make new rivers
15 like they can make new casinos, but Mom Nature hasn't found a
16 way to that. And there have been so many rivers that have
17 been destroyed and so many people that have stopped coming to
18 where those rivers were.
19 The area of Roscoe not too far from here, the Delaware,
20 they thrive from the dollars that the fishermen and the
21 hunters and people who want to be in a beautiful environment
22 bring there. The river dies, they won't come. The hunters
23 aren't coming up so much anymore. The past couple of years
24 the deer are disappearing. Forget about the reasons,
25 whatever. But you've got something here that is beautiful and

1 (By Solomon, Larry)
2 people want to take advantage of it. And, you know, I forgot
3 who sang the song but: You don't know what you got until it's
4 gone. You paved paradise and put up a parking lot. I tell
5 you all no matter what you're promised, and I do empathize, it
6 is always a lot worse than it is. This is almost like a gold
7 rush. People are looking at this opportunity to make a big
8 dollar. And dollars will be made, but at the sacrifice you
9 have absolutely no clue to what you will lose because it can't
10 be told and they wouldn't tell you.
11 MR. IONATA: Ephraim Sher.
12 (No verbal response.)
13 MR. IONATA: How about Ann Finneran? Ann Finneran will
14 be followed by Vince Sanborn.
15 MS. A. FINNERAN: I was going to primarily speak about
16 policy.
17 As a real estate agent I am familiar with why real estate
18 prices go up, and I guarantee you, it is not because of casino
19 speculation. And I just want to reiterate. That is said not
20 why real estate values are going up, why property values in
21 Sullivan County are going up. It has to do with sprawl, which
22 is a problem that has already been addressed. Really, there
23 is going to be a real major problem with housing. It's
24 already been said. But if we're going to see 20,000
25 additional workers, even if one-quarter of them, even if 5,000

1 (By Finneran, Ann)
2 had an income of $30,000, they could obtain a mortgage of
3 houses of about $85,000. There are about 50 houses in the
4 whole Multiple Listing Service database that they can afford.
5 If they have double income, if they have double income maybe
6 they could afford 150,000, 160,000. There are maybe a few
7 hundred houses in the entire Multiple Listing Service database
8 in Sullivan County which could accommodate these people. We
9 would be vastly overwhelmed.
10 What are the solutions? The rental market is even worse.
11 It would be a push to qualify someone out of a casino for an
12 apartment at $800 rent. That's the rent of a two-bedroom
13 apartment. Double income families could afford to rent
14 houses, but how many houses are there for rent? Very few.
15 How many residential units all together are there available to
16 rent in Sullivan County at this time? Certainly not more than
17 a few hundred at the very best. Large apartment complexes
18 will tell you that they have waiting lists and occasionally a
19 vacancy or two. So what is the answer? Perhaps mobile home
20 parks will alleviate the problem. There are so many lovely
21 acres just begging to be scattered with them. Or maybe
22 high-rise apartment buildings, also known as projects, are a
23 viable solution, since should the casinos fail, which probably
24 will happen. As someone said, they want to get the casinos
25 here before they get them all over the states. Well, if we

1 (By Finneran, Ann)
2 have ours here then by the time they have them all over the
3 states the casinos will fail and then maybe those projects
4 could maybe be used for the burgeoning welfare population or
5 maybe our fire departments could use the buildings for
6 practice fires. We could also consider the type of housing
7 which I understand the Borscht belt based resort provided for
8 their service personnel, essentially housing that might be
9 considered substandard today, I'm not really sure, I've been
10 told such, but if they were set on Native sovereign land,
11 which I guess isn't an option because I understand that
12 there's no development up to that point, but it wouldn't be a
13 legal issue but maybe that would be a best solution.
14 Another thing I want to address, because just listening
15 to all these people who were just looking with this glamorous
16 cloud over their head, at this glorious heyday, and they just
17 have to have that heyday back. Well, I just don't get it. I
18 really don't get it. I don't understand the value of resorts
19 in an area like Sullivan County which has so much more to
20 offer, with its environment, with agriculture which the state
21 really does want to develop more. They want to get
22 agriculture back. We've got those means. We've got the trout
23 fishing. There is just so much that Sullivan County has to
24 offer. And the Performing Arts Center. These are the reasons
25 why real estate values are going up. This is the reason why

1 (By Sanborn, Vince)
2 Sullivan County has value. And just get over the past. The
3 past is gone.
4 MR. CHANDLER: Your time is up.
5 MS. A. FINNERAN: Thank you very much.
6 MR. IONATA: Vince Sanborn, followed by Terry Murphy.
7 MR. V. SANBORN: Good evening. Thank you for being here.
8 I'm a little distressed because I've heard a lot of
9 numbers expressed, a lot of pie in the sky numbers I could
10 say, because there's no firm commitment to these numbers. I
11 can say that because what if, because as businesses come and
12 go as all businesses have, and especially the ones in Sullivan
13 County who just say how horrible it's been for the past 30
14 years. Well, when they opened business did they say that
15 business was going to be excellent for them? Well, I'm sure
16 they did. They had great high hopes. I'm sure that the
17 casinos are also saying this. This is going to be one of the
18 greatest things since sliced bread. We're going to give you
19 15 million dollars, guaranteed. Well, what if the casinos
20 don't take in the money? What if the earnings are not what
21 they projected and they can't cover the cost, then they start
22 saying: "Well, we can't pay this, we can't pay that. We
23 can't afford this, we can't afford that." Look at the racino
24 today. There was great promises there. What happened to the
25 racino? The people didn't come, employees laid off, wages are

1 (By Sanborn, Vince)
2 cut, hours are cut. It's one of those classic situations of
3 projected numbers.
4 Now we have, in this county, at this time, businesses and
5 individuals who are working for a true sustainable growth.
6 Sustainable means that it has the impact and it has the way of
7 providing the future and it doesn't have the withdrawals and
8 the negative sides of things. Look at the fisheries here, the
9 people, the farmers and the industry that is existing, where
10 people do come for the clean air. These are the things that
11 we should be projecting on and putting our money into. Not
12 into 50 million dollars of projected into a hole. That is
13 going to be like the Concord in 20 years. Now, what are we
14 going to do with the Concord now? What are we going to do
15 with this casino when it does bottom out? Look at Las Vegas
16 now, who's now saying: Well, no, it's a hole. It's falling
17 down. It's costing them more than they can deal with. This
18 is being the problem. This is the projection. I'm saying
19 that we need to really start to invest in our future, into the
20 think tanks, coming up with the ideas, the innovations, not
21 the let's how can we get the money the easiest.
22 I'm here for the long-term. I've lived in the Hudson
23 Valley for 20 years, 20 years in this area, and I have seen
24 what happens to sprawl. I've seen what the unions can do with
25 their building emphasis. Oh, we can make a lot of money.

1 (By Sanborn, Vince)
2 Well, yeah, sure we can. You can make a lot of money. And
3 then but do you see the guys that live up here as union
4 members living down in Orange County where the sprawl is? You
5 know, they're saying: We live up here. Why? Well, for the
6 reasons that we all live up here. We like the clean air, we
7 like the open space. We don't like the way it's been
8 developed in Orange County or Ulster County. These are the
9 problems.
10 And we're not seeing the effect, the effect of time given
11 to the examinations and to the testimonies. The records are.
12 Look at the casinos that have failed in the past and the
13 studies that have been proven and the testimonies to congress
14 on these things. These are the issues that need to be
15 examined, not the numbers projected into the sky.
16 And I thank you very much for the time. I really do
17 think you need to have more hearings and more studies done,
18 firm studies. Let's get the news out. Thank you.
19 MR. IONATA: Terry Murray is next. Is Terry Murray here?
20 (No verbal response.)
21 MR. IONATA: How about Gina Molinet? After, the next
22 person is a name I can't read but they live on 17 Pinewood in
23 South Fallsburg. Could you say your first name, please?
24 MS. SPEAKER: Denny.
25 MR. IONATA: Denny. Thanks.

(By Molinet, Gina)

MS. G. MOLINET: I didn't come prepared to speak tonight but I was motivated by some of the speakers who spoke earlier.

I am a member of the rotary, I'm a member of the Chamber of Commerce. I'm disappointed that the Chamber of Commerce has looked at this issue with such superficiality and not really been concerned about the long-run effects of what gambling will do to this county.

I own a 270-acre farm in the western part of the county and I am a realtor. So I have every reason to think that this gambling issue might be of advantage to me but I can only see what has happened in other communities like Atlantic City, like Las Vegas. Those are not places where I want to spend any time, nor do I want my children to have jobs in places like that. And I can't understand why people would want that in this beautiful county that is growing inexorably in a very positive direction with a prospect of a performing arts center.

I spoke today with some clients who bought a property from me a few years ago. We were talking about the gambling issue. They said that they would leave if, in fact, we would get five casinos, and they're not the only people who have told me that. There is a real depression about the idea of this county being turned into a zoo of development. I think it's a mistake for any area to be totally dependent on one

1 (By Molinet, Gina)
2 form of economic well-being. Look what happened to
3 Poughkeepsie when IBM moved out. Look what happened to
4 Sullivan County when the resort industry folded. We don't
5 need to be dominated by one major industry. We have a lot of
6 statistics that have been brought forward by people who are
7 better informed about details than I. But emotionally, I
8 think it's a big mistake and I hope that the people from BIA
9 will see that it's not really an advantage to us.
10 Thank you for your time.
11 MR. IONATA: Thanks. Next is Denny Pratt followed by
12 Robert Macedonio.
13 MS. D. PRATT: My name is Denny Pratt and I'm a realtor.
14 Thank you very much for being here tonight and thank you very
15 much for hearing me.
16 I keep looking at those pictures over there and they're
17 very beautiful. They're very unreal looking and they're kind
18 of like figures that keep coming out. They're very sort of
19 unreal about what will happen with gambling. You don't really
20 get the feel or the texture of it when you listen to everybody
21 talk about the pros of it.
22 Now, I came here from Vermont 25 years ago. In Vermont I
23 actually was on some planning boards there. They had a very
24 thoughtful approach. Actually, most of the people there
25 really wanted to make Vermont work and the way they did that

1 (By Pratt, Denny)
2 was to support each other, to listen to each other, to have
3 meetings and to really talk about the issues in-depth. When
4 an outside force came in or some other interest came in, we
5 talked about it and we thought about the impact that that
6 would have and we shared that information, and it was
7 important to listen to it. So I'm very grateful for this
8 meeting. I hope there will be a lot more. I think they're
9 very important. And I think you'll be quite satisfied.
10 Incidentally, where I lived, and lived in a very exciting
11 environment, has five bookstores in a community of 8,000
12 people. It was written up in the New York Times. And they're
13 all supported. That's what we're talking about. We're
14 talking about supporting each other, supporting each other's
15 businesses, thinking about each other. Now we're thinking
16 about casinos. We don't even know these people. Who are
17 these people coming in? I'm all for supporting Indians. I'm
18 part Indian myself. But the fact of the matter is here we are
19 here, with all of us here, responsible for each other. You
20 must think about that. It's something to really think about.
21 That's all I really have to say.
22 MR. IONATA: Robert Macedonio will be followed by Robert
23 Ewald.
24 MR. R. MACEDONIO: My name is Robert Macedonio.
25 MR. H. BRANTZ: Speak in the mic.

1 (By Macedonio, Robert)

2 MR. R. MACEDONIO: I'm a senior here at Monticello High

3 School, as a matter of fact.

4 I'm going to be leaving for college this year and one of

5 the first concerns I had was in five years down the line when

6 I come back from school I want to know exactly where my

7 community is going be at. Are the roads going to be fixed?

8 You know, is the school going to be in better condition?

9 Because here there is nothing. Believe it or not, there is

10 nothing here. There's nothing for your teenagers to do.

11 There is nothing for anybody to do, really. And I was just

12 wondering what's going to happen with that. I mean if these

13 casinos come in are they going to bring us some sort of

14 recreational services? Because after this fall semester I

15 know perfectly well I'm moving to Texas because of this very

16 reason. That was the biggest concern I had, by far.

17 As long as the local government keeps on top of the

18 casinos I don't see any problem in terms of the environment or

19 the economical influences.

20 And earlier tonight I heard somebody mention something

21 about monetary gain and it just really, really peaked my

22 interest because I don't know about any of you people here,

23 but if the casino comes in, the value of my family's house

24 goes up, which means they can sell it and pay off their debts

25 and move out somewhere where it's more peaceful and quiet.

1 (By Macedonio, Robert)
2 Now, would any of you complain if somebody came up and offered
3 you $500,000 for a house that's really only worth $100,000?
4 UNIDENTIFIED SPEAKER: Yes.
5 MR. R. MACEDONIO: You know you're lying.
6 And somebody said something about the congestion on the
7 roads. First of all, roads can be expanded. 17, if it's only
8 four lanes on both sides, they can make it six, they can make
9 it, eight, whatever is needed.
10 UNIDENTIFIED SPEAKERS: Sky wars.
11 MR. R. MACEDONIO: Sky wars? Is that what you said?
12 When it comes to sky wars, okay, if a hotel comes in here and
13 it's 15 stories high, be glad they're not taking up 138 acres
14 to build that hotel instead of 10 acres. What do you care
15 about sky wars? Are you flying?
16 And one concern that also somebody mentioned earlier was
17 the local landfill. Now, I know many people who live Rock
18 Hill way. The wind does blow, and I've smelled it too. The
19 landfill does kind of stink. When the casinos do come in they
20 are going to bring more population, which is a good thing
21 because like somebody said earlier, population brings money,
22 brings jobs. Okay? So I mean what's going to happen with
23 that? That's one thing I need to know because why would we
24 want to live in a place that smells like New Jersey? Sorry
25 for anybody who lives there. You know, it's all little things

1 (By Macedonio, Robert)
2 that add up to be one thing.
3 Somebody said earlier, working in the casino and smoking.
4 Okay? If you go in to apply at a place like that you have to
5 know perfectly well that there's going to be smoking. And
6 it's a work at your own risk environment, first of all. All
7 right?
8 And somebody had also said we're doing fairly well. The
9 last time I checked I wasn't doing fairly well. I don't even
10 have a job around here. I have to travel an hour away to
11 Montgomery just to work, and I'm only 18. All right? I don't
12 know how far any of you have to travel to work.
13 UNIDENTIFIED SPEAKER: An hour.
14 MR. R. MACEDONIO: An hour away. All right? Wouldn't
15 you like to work a lot closer to home?
16 UNIDENTIFIED SPEAKER: Not for the trade-off; no.
17 MR. R. MACEDONIO: I don't know about you, but I'd like
18 to save gas. $2.30 a gallon doesn't work for me. You know, I
19 only make 8 dollars an hour and that's seasonal work. Not
20 enough to cover cell phone bills, car insurance and any other
21 bills I might have, you know.
22 That's pretty much what I got. I'm all in favor of the
23 casino, let me first say, because it's going to take care of
24 my pockets very well. And when it comes down to it, I'm the
25 one worrying about me. So you got to think what's best for

1 (By Ewald, Robert)
2 you, what's best for your kids, what's best for the actual
3 community around you. That's what I've got.
4 MR. CHANDLER: Thank you.
5 MR. IONATA: Robert Ewald, followed by Frank Carbone.
6 MR. R. EWALD: My name is Robert Ewald. I am chairman of
7 the Delaware River Defense Coalition. We are a successful
8 coalition of local regional, national and international groups
9 and agencies. We have supported every effort to protect and
10 enhance the streams and rivers of the Delaware River
11 watershed. Our legal resources are experienced and
12 successfully challenging the effectors who which to take
13 personal, social and economic gains by compromising the
14 natural environment factors or overlooking them completely.
15 We are entering the casino era and it brings to each of
16 us new responsibilities, to look carefully and entirely at all
17 the effects of these planned developments. The guardians of
18 the natural resources and its environments of the Catskills
19 have their baskets filled to the brim with concerns and need
20 lots of extra help with this enormous task. Needless to say,
21 every legal means is needed to be taken now to leave the later
22 generations with a better natural environment to enjoy.
23 Presently, the Catskill region is being jammed with a
24 thousand dirty needles of development. Each is not fatal, but
25 the total is a slow and painful death of our natural

1 (By Ewald, Robert)
2 resources. We wish to state that these initial measured
3 remarks are serious concerns to us.
4 One: The recommended reclassification of the lower
5 Neversink River much be abandoned. City, state and interstate
6 water needs can be met without degradation of our good
7 Neversink River water.
8 This is 2 now. The allowable values of sewage discharge
9 into the Neversink River should be set much higher. We
10 recommend 300 percent higher. Biological filter beds and
11 lagooning should be used to reduce the phosphates and nitrates
12 and lower the temperatures of the sewage discharge into the
13 Neversink River. Fines and consent orders are okay. Greater
14 penalties for violations of the limits established for
15 allowable sewage discharge are needed. Try to find a legal
16 answer, or legal answers, to this question. Can Native
17 Americans operating casinos in Sullivan County be held
18 financially responsible for environmental violations or are
19 they exempt?
20 Our coalition is prepared to take any and all legal
21 actions needed to see that all developments that degrade the
22 natural environment of the Delaware River watershed are
23 stopped dead in their tracks. Only when these needs have been
24 fully met will we be satisfied. Thank you.
25 MR. IONATA: Next is Frank Carbone, followed by Harry

1 (By Cardone, Frank)
2 Brantz.
3 MR. F. CARBONE: Thank you. Thank you for listening
4 tonight.
5 Unfortunately, our New York State party bosses aren't
6 listening to the people. I mentioned before one time at one
7 of these meetings that when I hear the term "party boss" it
8 reminds me of crime boss.
9 There was a commercial years ago on TV, some of you might
10 remember, of a Native American, supposedly a Native American,
11 standing with a bunch of garbage blowing around his feet and
12 you saw a tear come down his eye. I got a feeling there's
13 going to be a lot more debris and garbage of all kinds coming
14 here to this whole region if five casinos are permitted, along
15 with a lot of smog in the valleys and from the heavy traffic.
16 I'm wondering how that new commercial might look. Who is
17 going to pay for the infrastructure upgrades that are needed
18 after all this mess starts? And you can expect that you'll
19 see millions upon millions of gallons of polluted storm water
20 entering into the pristine streams and lakes that we have here
21 in Sullivan County after a rain. I did a quick calculation.
22 For about 100 acres of blacktop and buildings, maybe 2 to 3
23 inches of rain, it comes out to over 5 million gallons of
24 water that's going to hit these streams that never hit them
25 before, but they'll hit them now.

1 (By Cardone, Frank)

2 I've got here a letter that I wrote to my senator.
3 Hopefully, it's going to make the different publications in
4 the region. My senator is Larkin, by the way, Bill Larkin. I
5 call this Senator Larkin's gamble because what they're doing
6 is gambling with other people's money, other people's tax
7 money, other people's hard earned tax money. So this is more
8 or less an open letter for other senators and other elected
9 officials who support these casinos, saying: I've been
10 reading many articles lately about New York State's Senator
11 William Larkin's public support for New York's five planned
12 casinos in Sullivan County and the proposed VLT, video lottery
13 terminal facility, in the Town of Newburgh in Orange County.
14 I'm from Orange County. Reports say it's the same developer
15 for all of them so I and many other's would really like to
16 know how anyone can openly support such projects without
17 knowing the full impacts that they have on our towns, counties
18 and state. It's becoming apparent that Senator Larkin and
19 anybody like him either doesn't care about the numerous
20 negative impacts that casinos are known to bring with them, or
21 he is receiving poor advice. Since he's chairman of the, my
22 own senator, Senator Larkin is chairman of the New York State
23 Racing Gaming and Wagering Committee, I prefer that he just
24 closely oversee what's going on with the existing New York
25 State racetracks and other gambling interests to make sure

1 (By Cardone, Frank)
2 that corruption doesn't creep in like it already has. Within
3 the past year there was announcements that there was
4 corruption already sneaking and creeping in.
5 MR. F. CARBONE: Most citizens don't appreciate public
6 servants in high offices promote out of control societal bad
7 habits that do nothing except promote more bad habits and
8 burden our society and ever burdening New York State
9 government and spending. Pataki seems to be doing more to
10 promote the casinos than the casino owners themselves and
11 Senator Larkin appears to be not that far behind. The
12 important question is how can Senator Larkin or any other
13 elected official openly, passively promote all these casinos
14 without first learning all of the societal and environmental
15 impacts they'll create?
16 Thank you very much. Good night.
17 MR. IONATA: Harry Brantz is up now, followed by John
18 Barone and then Rocky Aguirre, and that's the end of it.
19 MR. H. BRANTZ: The main problem is dollars. I'm working
20 in two fields, mental health -- I mean the mental health law
21 and I'm a law enforcement officer way back.
22 You think you're going to have the security man on the
23 highway. That's against the law. We have to hire people from
24 the state, county, town, village. That's going to cost them
25 money.

(By Brantz, Harry)

Referring to mental health, we're going to have to hire more people to make sure people who got disease, the compulsive gambler, is taken care of. That's going to cost money too.

But what we got today, we got a shortage of schools, classrooms in closets. We got to remove them all. We've got to build new schools today. The workers will have children in their future, in the casinos. We have a shortage of doctors, lawyers, nurses and teachers. The lowest paid doctor in the country, $176. The casinos going to pay that?

MR. IONATA: John Barone and then Rocky Aguirre.

MR. J. BARONE: Good evening. My name is John Barone. I'm an attorney and member with Peter Gordon Fly Fishers.

I'm here today to express TGF's objection not to a casino in Sullivan County, but to this casino located on the banks of the Neversink River in Bridgeville. Tonight I've heard about transforming Sullivan County. We don't object. But why the Neversink? The DEIS, which has not been discussed tonight in-depth, does not adequately address many impacts, including detriments to water supply, water quality, storm water runoff and drinking water. The DEIS does not adequately analyze the environmental impacts to the Neversink River, the Neversink Gorge and the Delaware Watershed. The Neversink River and Delaware River Watershed support the most famous trout fishery

(By Barone, John)

in the eastern U.S. The DEIS does not properly consider the effects to this watershed from turbidity and from pollution. The current DEIS does not support an environmentally sound development. We object to this casino's proposed location. We request a detailed and complete hydrologic and geomorphic study.

And finally, we request an extension of time to study this DEIS and submit written comments. Thank you.

MR. IONATA: The last speaker I have on the list is Rocky Aguirre. Then I guess we'll go to people who wanted to made additional comments?

MR. CHANDLER: Yes.

MR. R. AGUIRRE: Good evening. I guess I'm taking up the end here. I'll try and make this brief.

My name is Rocky Aguirre. I'm the Catskill coordinator for Trout Unlimited. Trout Unlimited is an organization with over 140,000 members across the country. We've got 8,000 in New York. Our mission is to preserve, conserve and restore North America's cold water fisheries and their watersheds. That last part of our mission statement is critical in this case.

The Neversink Watershed is a priority watershed for Trout Unlimited. It has been for years. As John so eloquently stated, the Neversink is home to one of the most historic and

1 (By Aguirre, Rocky)
2 famed fisheries on the east coast. Trout Unlimited has worked
3 hard to ensure that its ecological integrity has been improved
4 and maintained over the last 15 to 20 years, if not longer.
5 I would like to make a point that Trout Unlimited is not
6 against growth. We support and work towards smart,
7 ecologically based and green development, not development that
8 underscores or looks to an easy way out. Essentially what
9 we've looked for tonight was to come and give comments on a
10 DEIS that specifically addresses this casino and the impacts
11 that this casino would have on the Neversink River. We have
12 found that to be lacking. The DEIS, in general, has been
13 significantly weak in terms of addressing most of the
14 hydrologic or geomorphic concerns that we would have as an
15 organization. For a casino this large, a 1,000 page DEIS, as
16 large as that may seem, does not adequately address the
17 impacts for a casino that will be built that close to a major
18 significant river.
19 In closing, we would also formally request the comment
20 period to be extended. And we will be submitting written,
21 in-depth rebuttals to major portions of the DEIS. Thank you.
22 MR. IONATA: Thanks. Is there anyone who thinks they may
23 have signed up that I've missed?
24 (No verbal response.)
25 MR. IONATA: Good.

1 (By Moore, Jeffrey)

2 I have three people. I wrote down three people that

3 indicated that they wanted to continue finishing up their

4 comments. I have Jeffrey Moore, Rosa Lee and Mike Canazon.

5 Is there anyone else?

6 (No verbal response.)

7 MR. IONATA: Do those people still want to continue

8 making their comments?

9 MS. ROSA LEE: Yes.

10 MR. IONATA: We'll go in the order I read them. Jeffrey

11 Moore.

12 MR. J. MOORE: Thank you for taking me back again.

13 I had left off one comment I wanted to make for the

14 record, pretty much. Regarding the land claims, I'm not

15 intimately familiar with the process and the procedure and the

16 point at which the governor of New York State feels he has to

17 give casino licenses in exchange for settlement of land claims

18 up in various parts of New York State, but it's always

19 surprised me that a claim judgment of some number, some dollar

20 value, I've not just not heard established anywhere. It

21 surprises me that if they're talking about some tribal claim

22 to pieces of upstate New York that there would be a dollar

23 value of those land claims, and why a judgment like that is

24 frightening. I mean if it's a question of something like 250

25 million or 500 million when you have these four or five

(By Moore, Jeffrey)

claims, there's a dollar amount to this, be it a billion and a half or 2 billion or something. Well, you pay that out over 30 or 40 years. Like even lottery is paid out over 20, I think. You're talking about 50 to maybe 100 billion a year. It's just simple math. I'm wondering why we don't go through that litigation process. It sounds to me like 57, 70, 100 million a year, a check written to the five tribal claims is actually less than the impacts that we're going to be facing here. It's actually less than them first coming to build hundreds of millions of dollars of infrastructure, paying out 15 million a year times the five tribes, 75 million a year to the county, and also the aesthetic effects that aren't even measured yet. So I'm just wondering, I just want it in the record that I question why this doesn't come down to a dollar settlement and pay it out over a 30 or 40 year period like so many other things were paid out. And that State of New York check would be from all of the citizens of New York State and not just we in Sullivan who will have impacts and effects that will be long remembered and that are detrimental. Thank you.

MR. IONATA: I have Rosa Lee, then Mike Canazon and Dave Colavito.

MS. ROSA LEE: If you go along the Palisades Parkway you'll see the tops of the trees dying from the air pollution.

Are there any Indian people here? No people from the

(By Lee, Rosa)

Indian tribe here? You are here? May I ask you a question? What is more important, a tree or a man?

(No verbal response.)

MS. ROSA LEE: You don't know?

UNIDENTIFIED SPEAKER: I'm not an Indian.

MS. ROSA LEE: I recently had a conversation with the chief of the tribe that has the Tamarack Lodge in Ulster County where they're doing hydroponic agriculture. He put that question to me. I didn't know the answer either. The answer he gave me was a tree is more important that a man because man can't live without a tree but a tree can live without man. Thank you.

MR. IONATA: Mike Canazon and then Dave Colavito.

MR. M. CANAZON: I just want to reiterate again that I think that the review period or comment period should be extended. There are a lot of issues here. I notice that the DEC has been strangely absent from making any comments or having anything to say about this. In the original DEIS that was submitted a few years ago there were a lot of problems that the New York State DEC had with the numbers that the casino group was using as far as water flows and VOCs and a lot of other things that haven't been addressed at all. And it hasn't changed from the original numbers they put out there. So it's just like this has kind of been -- nobody's

1 (By Canazon, Mike)
2 even bothered to change the numbers. I think that a really
3 in-depth scoping process needs to be done here by hydrologists
4 like the Peter Gordon Fly Fishers and Rocky had proposed. And
5 the impacts of any increased flows in the Neversink will
6 affect the entire Delaware River Basin and it affects people
7 in Pennsylvania, Jersey, Delaware and New York. Unless all of
8 these people have a chance to review this and see what the
9 impact is going to be on them, I don't think that we can
10 really go forward. Thank you.
11 MR. IONATA: Dave Colavito.
12 MR. D. COLAVITO: First, I do appreciate you coming out.
13 And say hello to Jim Cardatia (ph.) and tell him thanks
14 because you guys helped me quite a bit with getting some of
15 the information I needed. So again, we appreciate that.
16 A couple of good points, though. I noticed in the DEIS
17 that the 8-hour ozone levels are already failing the proposed
18 levels from 1997 so I just want to highlight that now. I know
19 they're not ready or adopted yet by the BIA, but I think some
20 of the statements that were made earlier about air quality not
21 being a factor, I'd like to kind of try to reconcile those
22 numbers in the DEIS for the 8-hour ozone, which if you look at
23 the document again, you'll see that they are failing in NAQS
24 standards already.
25 The other request, I guess, would be for you to look at

1 (By Colavito, Dave)
2 the Department of Health of New York State for the death rates
3 in Sullivan County for lower chronic respiratory disease. You
4 will see already that Sullivan County leads the seven county,
5 Mid Hudson Valley area for lower chronic respiratory disease
6 death rates. It leads all seven by 50 percent and it leads
7 the entire state of New York as a whole by 65 percent. So I
8 think that needs to be considered when we go ahead and flesh
9 out some of this air quality business.
10 The other point, you guys are the Lead Agency, not just
11 for this project but also for the St. Regis Mohawk. There are
12 some similar threads and concerns that I see in both of the
13 documents. I know the record decision hasn't come out yet for
14 the St. Regis Mohawk, but I'm wondering if, I think you're the
15 lead person for both of these, both the Final Environmental
16 Impact Statement and this DEIS? Do you take sort of a
17 holistic view of both these documents and try to reconcile
18 some of the comments that went in on the St. Regis Mohawk?
19 For example, with the employment, some very similar
20 discrepancy with some of the data in this DEIS with respect to
21 New York State's Department of Labor data and some of the very
22 similar inconsistencies here, that they were in the St. Regis
23 Mohawk one. So hopefully you guys will look at both of these
24 things and where you see common threads address them
25 appropriately.

(By Finneran, Ann)

I guess that's all I'll say for now. Thank you.

MR. IONATA: Is there anyone else who wishes to add comments?

(No verbal response.)

MS. A. FINNERAN: I just want to add that I'd like to --

MR. IONATA: Could you come up to the microphone just so we can get you on the transcript, please.

MS. A. FINNERAN: I just wanted to say I'd also like to put my voice in that I'd like to see the study extended to May 12th.

MR. IONATA: That's all the people we have. Thanks.

MR. CHANDLER: I would like to thank everybody for coming. Your comments are part of the public record for the project. Thank you, and have a good night.

(Time noted: 10:08 p.m.)

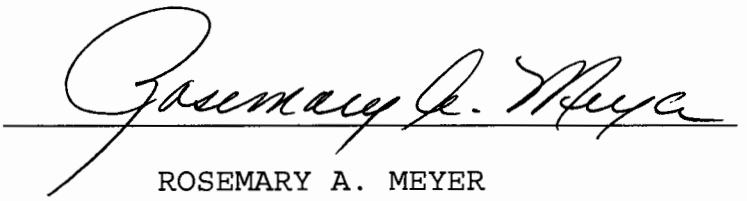
* * *

REPORTER'S CERTIFICATION

I, ROSEMARY A. MEYER, a Shorthand Reporter and Notary Public in and for the State of New York, do hereby certify:

That the foregoing transcript is an accurate record of the proceedings herein, to the best of my knowledge and belief, having been stenographically recorded by me and transcribed under my supervision.

I further certify that I am in no way related to any of the parties to this action and that I have no personal interest whatsoever in the outcome thereof.



ROSEMARY A. MEYER

Date Transcribed: March 30, 2005

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Appendix O-3

Response to Comments

Public Hearing Response to Comments

Fifty-three people provided comment on the DEIS. Twenty-four of these were comments of support, re-iterating some of the project commitments and/or indicating the need and potential benefit of the project. These included comments from Steingert, Baez, C. Cohen, Manzi, Reynolds, Goodstein, J.S. Cohen, Hudes, Wasserman, Yust, Nargizian, Benjamin, Kristt, Tugender, Rosenberg, Rubenstein, Mormon, Hazen, Greenfield, Dioirio, Sapolsky, Teitelbaum, Pratt and Macedonio. The remaining twenty-nine commenters expressed their concerns. These included comments from Edelstein, Wombacher, Gorzen, Nazarian, Riseling, N. Halloran, Stern, Gorzen, Thursh, Hedlund, Colavito, Moore, L. Halloran, J. Halloran, Lee, Canazon, Jaffe, Hirschfeld, Vogel, Chase, Solomon, Finneran, Sanborn, Molinet, Ewald, Carbone, Brantz, Barone and Aguirre. Comments expressed are summarized below. The transcript of the hearing follows. Many of the commenters below also provided written comment (see Appendix P).

Comment: Several comments expressed concern over an analysis of five casinos.

Response: Many comments received by the BIA on the Draft of this EIS, including comments from Region 2 of the Environmental Protection Agency and the New York Governor's Office, requested a five-casino impact analysis for Sullivan County. The BIA Eastern Regional Office's initial response to these requests was that it would include a narrative in the Final version of this EIS that would generally address the environmental impacts reasonably assumed to result from the construction and operation of five casinos, but that the narrative would not include any quantitative analysis of the assumed impacts. However, the BIA has since determined that including a non-quantitative analysis in a Final EIS to address environmental impacts that may result from speculative future actions would be improper under NEPA. Specifically, future actions that are not "reasonably foreseeable" are excluded from review in an EIS. Accordingly, this Final EIS does not analyze the environmental impacts of the development and operation of five casinos in the Sullivan County area. See specifically Section 6.0 of the EIS.

Comment: Air quality issues in Orange County were raised.

Response: A regional mesoscale air quality analysis was performed to calculate the potential regional air quality effects of the traffic generated by the Casino Project and, cumulatively, other proposed casinos on Orange County, using as a measure, the total daily emissions of VOCs and NO_x on major highways. Thirty-five roadways were included in the analysis. The analysis shows that motor vehicle traffic in Orange County related to the proposed Casino Project(s) will result in an insignificant (less than one percent) increase in total VOCs and NO_x emissions in Orange County. See Sections 5.8 and 6.8 of the FEIS.

Comment: Requests to extend the comment period were made.

Response: The Bureau of Indian Affairs determined that an extension of the comment period was not warranted.

Comment: A comment was made on how much of the land should be placed into trust. This should be minimized in order to minimize tax impacts.

Response: The proposed action is not only to provide economic development through the establishment of a casino, but to also settle the Tribe's land claim with the State. As such, the land placed into trust is not limited to the footprint of the casino.

Comment: Concern was raised over changes to community character.

Response: Analysis was added to the FEIS to address this. See, for example, Section 5.13.

Comment: Concern was raised over an increase in crime, drug abuse, and gaming addiction problems.

Response: The Stockbridge-Munsee Tribe and Sullivan County have acknowledged, however, that issues associated with gaming related addiction and pathological gambling behavior may need to be addressed, and anticipate that it will be included in their Tribal-State Compact. However, to the extent that this is not addressed, the Stockbridge-Munsee Tribe has agreed to enter into a supplemental agreement with local governments to ensure the provision of services relating to the prevention and treatment of gambling addiction in the Local Government Agreement. It is reasonable to assume that other tribes would take similar measures, or may coordinate efforts, to prevent and treat gambling addiction.

Comment: Requested a visual impact.

Response: A visual impact analysis is provided in Section 5.13 and Appendix N of the FEIS.

Comment: What will the effects of lighting be?

Response: Outdoor lighting will be designed to minimize spillover to adjacent areas. See Section 5.13 of the FEIS.

Comment: What will the electrical grid be?

Response: Electricity for the proposed casino will be provided by NYSEG. NYSEG has indicated that they will need to upgrade their transmission lines in the area. These will likely use the existing poles in the roadways.

Comment: Will there be smoking?

Response: There will be no-smoking customer and employee areas. It should be noted that state laws, such as the NY state smoking ban, do not apply to the Tribe.

Comment: There will be induced growth impacts/sprawl.

Response: The operation of one or more casinos will generate secondary growth. Employees who move to the region will require housing, which will likely result in new construction. Although the specifics of all the casinos are unknown, a qualitative analysis was done on the effects of induced growth on community character and other issues (see Sections 6.0 and 7.0). In particular it should be noted that the possibility of casinos have been recognized by Sullivan County and neighboring municipalities for years. Sullivan County in particular has taken steps to control and manage growth, as reported in Section 7.3.

Comment: Schools will not be able to handle the new students.

Response: The effects of new school age children have been addressed for multiple casinos (see specifically Section 6.0 and 7.0. Each of the casinos will have an agreement with Sullivan County which will mitigate these impacts. For example, the Stockbridge-Munsee have a Local Government Agreement annual payments of $15 million. Each of the other casino is expected to have a similar agreement.

Comment: Air pollutants from the casino will create acid rain and harm the Neversink River.

Response: Acid rain is not considered a potential project impact. Acid rain is formed from sulfur dioxide and nitrogen oxides discharged to the air. Locally, the only discharge of this type would be potentially from the stationary sources from the casino itself. The U.S. Environmental Protection Agency has jurisdiction over these emissions, and the emissions will be required to meet their standards.

Comment: The EIS says that Mohegan Sun used a million gallons of water a day in August 2002. This contradicts the 534,000 gpd the EIS says the casino will need.

Response: The million gpd for the Mohegan Sun was after their expansion and, as such, reflects water usage for a casino considerably larger than that proposed in Sullivan County.

Comment: This casino will use all of the Village's water supply capacity, and five casinos will make that even worse.

Response: Only the proposed Stockbridge-Munsee and Cayuga casinos are expected to use the Village water supply system. The Stockbridge-Munsee have agreed to provide additional wells to the Village system so that the existing municipal capacity will not be impacted. See Section 5.12.1 and 6.12.

Comment: Four casinos will be using the Town of Thompson treatment plant and the plant's 1.3 million gallon capacity is not enough.

Response: Neither the Mohawk Mountain Resort and Casino (on-site disposal) nor the Oneida Tribe of Indians of Wisconsin (located in Mamakating) will use the Thompson plant. The Seneca-Cayuga, who were initially proposing to go to the Concord Hotel, are now proposing to go to Ulster County. As such, only the Stockbridge-Munsee and Cayuga Tribe would use the plant. This has been

considered by the Town in their agreements and in the FEIS, and there is adequate capacity. See Section 5.12 and 6.12.

Comment: Effluent from the casino(s) will increase flows to the Neversink which will increase temperatures

Response: The proposed casino will not be directly discharging treated wastewater to the Neversink River. The casino will be connecting to the Thompson facility, which has approved capacity for the expected flows.

Comment: Neversink River Gorge is threatened by the project.

Response: The Neversink River Gorge is located several miles downstream of the project site. Controls of stormwater runoff from the site will be applied before the runoff leaves the site. As such, the project should not impact this area. It should be noted that the National Park Service noted in their comment letter dated April 11, 2005 that the project would not effect the downstream segment of the Nationwide Rivers Inventory relative to the National Wild and Scenic Rivers System.

Comment: Housing for workers for multiple casinos will be an impact.

Response: The cumulative demand for housing generated by multiple casino projects, and their subsequent effect on the housing market, would depend in large part on the amount of in-migration of new residents to Sullivan County and surrounding counties. A Pathfinders report suggests that it would be theoretically possible for the five casinos and other new employers in Sullivan County to fill most of the new jobs from the labor-shed and that these new employees could commute from where they now live, thus creating little new housing demand. This, however, was not the operating assumption of the DEIS or FEIS (see Section 6.0). The FEIS estimates direct and indirect employment generated by multiple casinos. The cumulative pressure exerted on the housing market would occur over a period of many years as the casinos are approved and constructed, enabling the market to adjust to demand, and enabling local municipalities to plan for growth in a proactive manner. Overall, given the estimated scale of the housing demand and the over 10-year time frame in which this demand would be generated, significant adverse socioeconomic impacts are not expected due to casino-generated housing demand. Based on data collected as part of the EIS for the proposed Stockbridge-Munsee Casino, there are over 8,000 housing units planned for development in the study area, 4,447 of which would be located in Sullivan County.

Comment: The streams and rivers will get millions of gallons of polluted runoff water from the casinos.

Response: All of the casinos will have to meet state and/or federal requirements for controlling runoff. The Stockbridge-Munsee design includes a comprehensive stormwater management system. This system will control stormwater quantity so that flows will be stored and released slowly so that downstream flooding will not

occur. This system will also pretreat stormwater before it is released into adjacent wetlands or waterways to improve water quality.

Comment: Local governments are going to have to hire more staff and build more schools to provide services – who will pay for that?

Response: Each of the casinos will be required to have a Local Government Agreement to address these issues. The agreements are expected to include provision for $15 million annual payments by each casino to address issues such as education costs.

Comment: The New York State Department of Environmental Conservation raised many questions early in the process that have never been answered.

Response: Several meetings have occurred with NYSDEC over the years, and their issues have been resolved. Substantial changes have been made to the environmental documents, including addition of background information on water and wastewater projections and stormwater management. New studies were added, such as the review of the Neversink River bank stability and the use of reference wetlands in the wetland creation design.

Appendix P

DEIS Written Comments

ENV.

United States Department of the Interior

NATIONAL PARK SERVICE
Northeast Region
United States Custom House
200 Chestnut Street
Philadelphia, PA 19106

IN REPLY REFER TO:

APR 11 2005

04-18-05P01:28 RCVD

L-7619 NER-RP&C-Boston
DES 05/0009 (BIA)

Franklin Keel
Regional Director
Eastern Regional Office
Bureau of Indian Affairs
711 Stewart Ferry Pike
Nashville, Tennessee 37214

Dear Mr. Keel:

This responds to your bureau's request to our Department of the Interior, Office of Environmental Policy and Compliance, which has referred it to the National Park Service (NPS) for review and comment on the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsse Casino, Town of Thompson, Sullivan County, New York.

We note the casino development is to be contained within a Gildick Parcel along the west side of the Neversink River, in the immediate northwest quadrant of where the high standard State Route 17 crosses over that river. We also note that a lengthy segment of the Nationwide Rivers Inventory (NRI) relative to the National Wild and Scenic Rivers System, runs south down stream, from the vicinity of the Route 17 bridge over that river. However, the casino project as described within the Gildick Parcel would not appear to diminish the quality of that segment of its qualification for listing on the NRI and its potential for study to become a management unit of the National Wild and Scenic River System.

The compact disc-documented DEIS review materials concerning cultural resource preservation of surface and subsurface structures, objects and artifacts, and our recent contact with the State Historic Preservations Officer's (SHPO) staff indicate little or no likelihood for damage or loss of such resource values by the project's physical work in the area of the Gildick Parcel, provided such work is conducted with caution, and consultation with the SHPO upon any unexpected physical cultural resource discovery or finding after the work as presently described commences. Further, we understand that any construction work to connect the casino development, in its two sequential phases, to municipal systems of the Village of Monticello (for water supply) and to the Town of Thompson (for waste water disposal) will be done within the physical space of existing roadway prisms, and with similar cautionary constraints as for the work within the Gildick Parcel.

Our review did not find potential for concern of other of our NPS interests, whereupon we close our commentary with appreciation for the opportunity to review this DEIS.

Sincerely,

for Mary A. Bomar
Acting Regional Director
Northeast Region

cc:
Jacob Hoogland, Ch, EQD, WASO 2310
Dale Morlock, EQD, WASO 2310
Keith Everett, NER-A/R/D, Philadelphia
Shaun Eyring, NER-RP&C, Philadelphia
David Clark, NER-RP&C-Boston

Note: This DES 05/0009 (BIA) review response was drafted by D.Clark, Boston from review of selected prints outs including SHPO-NY correspondence of 2001 and 2003 from the DEIS-CD and telephone contact with Kathleen LaFrank (SHPO-NY, surface resources) 3/16/05, and Doug Mackie (SHPO-NY, subsurface resources) 3/24/05.

DClark:bd:3/30/05:617-223-5141:DES050009

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Ms. Mary A. Bomar
Acting Regional Director
National Park Service
Northwest Region
United States Custom House
200 Chestnut Street
Philadelphia, PA 19106

Dear Ms. Bomar:

Thank you for reviewing the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You note that the project would not appear to diminish the quality of the adjacent Neversink River in its qualification for the Nationwide Rivers Inventory and its potential for study to become a management unit of the National Wild and Scenic River System. You also note that you did not find potential for concern over other National Park Service interests.

We appreciate your review. With the proposed project being located adjacent to a cold water trout stream we required the DEIS contractor to include detailed stormwater control information in the DEIS to minimize thermal and other stormwater impacts on the Neversink River. We are pleased to learn that the project would not impact the Neversink River's qualification for National Parks System classification programs. We also appreciate your concurrence with the cultural resource clearance. The site had previously been severely impacted by use as a surface mine and automobile salvage yard, so the potential for new cultural resource discoveries would appear to be very remote. The Tribe had previously received clearance from the State Historic Preservation Office, and will consult with them if any discoveries are made during the construction.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

-- 29 05 11:24 RCVD

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March 28; 2005

By Facsimile (615 467-2939) and U. S. Mail

Kurt G. Chandler
Regional Environmental Scientist
United States Department of Interior
Bureau of Indian Affairs
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Re: Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino; EIS No. 050047

Dear Mr. Chandler:

On behalf of our client, the Natural Resources Defense Council, Inc. ("NRDC"), we submit the following comments on the Draft Environmental Impact Statement ("DEIS") prepared under the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321-4347, for the proposed Stockbridge-Munsee Casino and ancillary facilities (the "Project") proposed to be constructed in the Town of Thompson, Sullivan County, New York.

The BIA Has Provided an Inadequate Public Comment Period and Has Failed to Distribute the DEIS Appendices.

By letter dated March 9, 2005, we requested an extension of the public comment period on the DEIS. By letter dated March 17, 2005, we requested a complete copy of the appendices to the DEIS, including Appendices A-J to Appendix B (Traffic Impact Study) of the DEIS. The Bureau of Indian Affairs responded to our March 9th letter by

letter dated March 18, 2005, stating that upon the recommendation of the BIA central office the public comment period would not be extended. Inexplicably, BIA never responded to our March 17, 2005 letter requesting a complete copy of the appendices to the DEIS. Not only has NRDC and the public been deprived of an adequate period of time within which to review the more than 1000 page DEIS, but BIA failed to distribute the complete appendices to the DEIS, even when we specifically requested them, in violation of the regulations promulgated by the Council on Environmental Quality ("CEQ") for the implementation of NEPA. *See* 40 C.F.R § 1502.18(d).

The DEIS Fails to Disclose BIA's Role in its Preparation.

Although the DEIS includes a list of the organizations and individuals contributing to its preparation, it does not discuss or disclose the role of BIA or its staff in the preparation of the DEIS or the relationship between the organizations and persons contributing to the preparation of the DEIS and BIA. The DEIS should disclose the role of BIA and its staff in the preparation of the DEIS; whether the organizations and individuals contributing to the DEIS were retained by BIA or someone else to prepare the DEIS; and whether and to what extent BIA independently verified that the correct methodologies and procedures were followed and the complete facts were presented to insure that the DEIS presented an unbiased analysis of the environmental impacts of the Project, as required by NEPA and the CEQ regulations. *See* 40 C.F.R. § 1506.5.

The DEIS Fails to Present the Cumulative Adverse Environmental Impacts of Five Casino Projects Proposed in Sullivan County.

The DEIS candidly acknowledges that it fails to analyze the cumulative impacts of the five casino projects planned to be constructed and operated in Sullivan County. Indeed, the DEIS concedes that it considered the cumulative impacts of only three casinos in Sullivan County—the Stockbridge-Munsee casino Project, the proposed St. Regis-Mohawk Mountain Casino (also proposed to be constructed in the Town of Thompson, Sullivan County), and the proposed Cayuga Monticello Raceway casino project (proposed to be constructed in the Village of Monticello, Sullivan County). *See* DEIS p. 229. While the DEIS expressly acknowledges that Governor Pataki has "proposed five casinos in the Sullivan County area as part of land claim settlement agreements," it contends that the impacts of the additional two casinos (the proposed Wisconsin Oneida and Seneca-Cayuga of Oklahoma casinos) are "too remote and speculative to analyze at this time," and that because the land claim settlements are subject to Congressional approval, "they are not reasonably foreseeable at this time." Finally, the DEIS states that by the time the FEIS is prepared, "the status of the number of casinos and their potential locations, sizes and timing will be better known and reasonably foreseeable, allowing for possible analysis at that time." *See* DEIS p. 229.

In fact, contrary to the contentions in the DEIS, sufficient detail regarding all five casinos has been publicly available since at least mid-December 2004. *See* "Our Own

Little Las Vegas," *Times Herald-Record*, Dec. 12, 2004, a copy of which is attached hereto, and which provides the proposed location and scope of all five of the proposed Sullivan County casinos. Since all five casinos will be roughly comparable in size, even if some of the details about one or more casino projects are not currently known, it clearly would have been possible to provide at least a preliminary assessment of the cumulative effects that all five casinos will have on the environment and the surrounding communities, as NEPA and the CEQ regulations require. When information relevant to reasonably foreseeable significant adverse effects is incomplete or unavailable, an agency must, at a minimum, evaluate such impacts "based upon theoretical approaches or research methods generally accepted in the scientific community." 40 C.F.R. § 1502.22(b)(4). Moreover, where the costs of obtaining the incomplete information are not exorbitant, an agency must "include the information in the [EIS]." 40 C.F.R. § 1502.22(a). Because the tribes and developers of all the casinos are known, the BIA was required by the CEQ regulations to gather and assess any available information on the cumulative impacts of the proposed casino projects, even if such information is preliminary.

The assertion in the DEIS that because the additional casinos are subject to Congressional approval, "they are not reasonably foreseeable at this time" is simply ridiculous. As BIA well knows, the Stockbridge-Munsee Project is also the subject of an agreement with Governor Pataki which not only requires approval by Congress, but also requires approval by the New York State legislature, as well as BIA. Moreover, the Agreement with the Stockbridge-Munsee is inextricably intertwined with a similar Agreement between Governor Pataki and the Wisconsin Oneida, since both Agreements together purport to "settle" the land claim of the Oneida Indian Nation of New York. In fact, Governor Pataki's counsel has described the five casinos as an "all-or-nothing package deal." *See* "State to Sullivan: 5 Casinos or Nothing" and "Indian Land Deal Driving Pataki?" *Times Herald-Record*, Jan. 8, 2005, at 1-3; "A Five Casino Plan Part of Bigger Picture," *The Towne Crier*, Jan. 12-18, 2005, at 8-9.

Thus, as BIA well knows, the proposed Wisconsin Oneida casino cannot possibly be any more speculative than the Stockbridge-Munsee casino Project and the failure of the DEIS to consider the cumulative impacts of the proposed Wisconsin Oneida casino is a clear violation of NEPA and the CEQ regulations.

The same is true of the failure of the DEIS to consider the cumulative impacts of the proposed Seneca-Cayuga of Oklahoma casino proposed to be constructed in the nearby Town of Mamakating, Sullivan County. The Agreement between Governor Pataki and the Seneca-Cayuga of Oklahoma requires the same approvals as the Agreements with the Stockbridge-Munsee and the Wisconsin Oneida—and is part of the same "package deal" described by Governor Pataki's staff.

Not only did the DEIS fail to consider the cumulative impacts of five casinos, but it also failed to consider the cumulative impact of the Sullivan County Performing Arts Center, now under construction in the Town of Bethel, Sullivan County, contending that events at that facility would be "sporadic and inconsistent." (DEIS p. 29). However, the

Sullivan County Performing Arts Center is expected to host classical music concerts featuring the New York Philharmonic and other music events, much like the Tanglewood Music Festival (Lenox, Massachusetts), which runs every weekend from late June to the end of August, and the Saratoga Performing Arts Center (Saratoga Springs, New York), which hosts events every weekend from the end of June until at least the first week of September. Clearly, the Sullivan County Performing Arts Center can be reasonably expected to be generate additional traffic on the same road system used by expected casino patrons on most, if not all, summer weekends, which the DEIS simply chooses to ignore.

The CEQ regulations require an agency to consider the cumulative impacts of a proposed action and "other past, present, and reasonably foreseeable future actions." 40 C.F.R. § 1508.7. Reasonable foreseeability under NEPA means that "the impact is sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision." *DuBois v. U.S. Dep't of Agriculture*, 102 F.3d 1273, 1286 (1st Cir. 1996). Because the proposed Wisconsin Oneida and Seneca-Cayuga of Oklahoma casinos are no more or less foreseeable than the Stockbridge-Munsee Project, any person of reasonable prudence would have considered their cumulative impacts as NEPA and the CEQ regulations clearly require.

Moreover, even Governor Pataki recognizes the legal requirement of a cumulative impact analysis. In a February 25, 2005 letter to the BIA commenting in part on the Stockbridge-Munsee casino Project, the Governor requested that "appropriate consideration is given to the cumulative impacts that five casinos in the Catskill region may have on the community's local resources and that an analysis of any such impacts be included within the environmental impact statements prepared for each of the casino projects." A copy of the Governor's letter is attached. (We note that the Governor's letter requests that the cumulative review be included in each EIS prepared for a casino project—requiring the preparation of a Supplemental DEIS for the Project, but does not address the requirement for an assessment of cumulative impacts under SEQRA. As noted below, BIA should undertake the cumulative review requested by the Governor in conjunction with NYS Department of Environmental Conservation and local government agencies to assure that a single, comprehensive, cumulative EIS satisfies the requirements of both NEPA and SEQRA.)

The clustering of five casinos in Sullivan County will have serious adverse cumulative impacts on the roadways, air quality, infrastructure, and community character of Sullivan County and the Catskill region. Among the most obvious impacts will be the increased traffic on Route 17, a vital transportation corridor that all the casinos will rely on for bringing patrons from the New York City metropolitan area. As demonstrated in the attached report of Sam Schwartz Engineering PLLC, the traffic generated by the five proposed casinos will simply exceed the capacity of Route 17—not only inconveniencing (and seriously delaying) the general public, but threatening the ability of emergency and law enforcement personnel from responding to crime, medical emergencies, fires or other threats to the public. The additional traffic generated by five casinos will simply bring Rt. 17 to a standstill, backing up traffic to the New York State

Thruway and all other entrances to Rt. 17. Orange County, New York—which Rt. 17 traverses—is already a non-attainment area for ozone under the federal Clean Air Act. Because the traffic conditions presented in the DEIS represent only a fraction of the increased traffic on Rt. 17 that will be created by the cumulative effect of five casinos, the air quality analysis in the DEIS substantially understates the deterioration of air quality that will result, in violation of the federal Clean Air Act.

Without a comprehensive analysis of the impacts of all five casinos, the BIA cannot be said to have taken the required "hard look" at the relevant areas of environmental concern. *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976).

The failure of the DEIS to fully account for the cumulative impacts of the five casinos is a clear violation of NEPA. *See Town of Huntington v. Marsh*, 859 F.2d 1134, 1140-41 (2d Cir. 1988) (holding that EIS for dumping of dredge spoil in Long Island Sound was insufficient for failing to analyze the cumulative impacts of other similar dredging and dumping projects); *Natural Resources Defense Council, Inc. v. Callaway*, 524 F.2d 79, 87-88 (2d Cir. 1975) (same); *see also Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 812 (9th Cir. 1999) (holding that proposed land exchange was reasonably foreseeable and thus not "too speculative" to be analyzed in the EIS for a similar nearby land exchange). Because of this gross deficiency in the cumulative impact analysis of the DEIS, the BIA must prepare a supplemental DEIS.

The Cumulative Impacts of Five Casinos Must be Presented in a Supplemental DEIS Subject to Public Comment.

The BIA must prepare a supplemental DEIS that provides a thorough and comprehensive cumulative impact review of all five casinos proposed in Sullivan County. Federal agencies are required to prepare a supplemental EIS if "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9(c)(1)(ii). The U.S. Supreme Court has further held that a "rule of reason" applies to an agency's obligation to prepare a supplemental EIS. "If there remains major federal action to occur, and if the new information is sufficient to show that the remaining action will affect the quality of the human environment in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared." *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 374 (1989) (citations and internal quotations omitted). The BIA cannot seriously contend that the added effects of two Las Vegas-style casinos do not constitute significant new information warranting a supplemental DEIS. Because two additional casinos alone represent a 67% increase in the number of casinos purportedly analyzed in the DEIS, the increased effects of these casinos on the roadways, air quality, and other regional resources clearly represent a significant change to the cumulative impact review of the Project. In order for the public and State and local agencies to have a meaningful opportunity to comment on a revised cumulative impact analysis, such analysis must be contained in a supplemental DEIS.

Presenting a complete cumulative impact analysis only in the FEIS, as the DEIS suggests will be done (*see* DEIS p. 229), would deprive the public of any opportunity to comment on the cumulative impact analysis of the five casinos, in clear violation of NEPA and the CEQ regulations. A full and fair opportunity for the public to comment on a DEIS is required by the CEQ regulations. *See* 40 C.F.R. § 1503.1.

The DEIS Fails to Disclose that the Stockbridge-Munsee Casino Project Will Require Issuance of a New York State Water Supply Permit, Which Will Require the Preparation of an Environmental Impact Statement under the State Environmental Quality Review Act ("SEQRA").

The DEIS states that the 430,000 gallon per day water demand for the Stockbridge-Munsee casino Project will be supplied by the existing Village of Monticello water supply system which has excess capacity. In addition, "the Tribe has committed to developing additional supply capacity in the Village's current wellfield to off-set usage by the Casino Project." DEIS p. 243. Pursuant to the Water Supply Agreement between the Village and the Stockbridge-Munsee, the Village agrees to "allocate and provide" to the Stockbridge-Munsee up to 440,000 gallons per day of water supply for the Project. However, contrary to the impression created by the text of the DEIS, the Water Supply Agreement provides, in relevant part, as follows:

> The parties understand and agree that this capacity is allocated by the Village from ***the new water source developed by the Tribe solely for the use of the Tribe*** . . . .

Water Supply Agreement § 2002(b), DEIS App. D (emphasis added.)

Other sections of the Water Supply Agreement obligate the Stockbridge-Munsee to construct new water supply wells and associated water treatment facilities for the Village and to transfer title of these improvements to the Village upon completion. *See, e.g.*, § 2008-2009.

Clearly, pursuant to the Water Supply Agreement, the Stockbridge-Munsee have agreed to install additional groundwater well capacity and related facilities on Village property which, upon completion of construction, will become the property of the Village. Moreover, the completion of these facilities is a condition of the Village supplying potable water to the Stockbridge-Munsee casino Project. What the DEIS fails to mention, however, is that the Stockbridge-Munsee may not install this additional groundwater well capacity on Village property without first applying for and receiving a water supply permit issued by the NYS Department of Environmental Conservation ("NYSDEC") pursuant to Article 15, Title 15 of the New York State Environmental Conservation Law ("ECL"). The issuance of such a permit by NYSDEC would be an "action" subject to SEQRA (Article 8 of the ECL) and, given that BIA has already concluded that the Project may have a significant adverse effect on the environment, will

require the preparation of an environmental impact statement and compliance with the procedural requirements under SEQRA.

The CEQ regulations require that federal agencies "cooperate with State and local agencies to the fullest extent possible to reduce duplication with NEPA and comparable State and local requirements . . . . Such cooperation shall include joint environmental impact statements . . . so that one document will comply with all applicable laws." 40 C.F.R. § 1506.2(c). Since the State water supply permit is a necessary component of the Project, the DEIS should have been prepared jointly by BIA and NYSDEC to satisfy the requirements of both NEPA and SEQRA.

The Traffic Impact Study Grossly Understates the Traffic Conditions from Three Casinos and Completely Fails to Disclose the Extent of Traffic that Will Be Created by Five Casinos

Attached to this letter is the memorandum prepared by Sam Schwartz Engineering PLLC ("SSC") regarding the Traffic Impact Study contained in the DEIS. SSC's review of the DEIS has found that it contains a number of errors and omissions as well as inconsistencies with the data and conclusions contained in the traffic impact analysis of the proposed St. Regis Mohawk Mountain Casino. Most importantly, however, SSC has found that the DEIS fails to fully address the traffic impacts of the proposed Stockbridge-Munsee Casino in light of the other casinos proposed in Sullivan County, induced growth and additional traffic from other projects in the region. This results in a serious underestimation of impacts on New York State Route 17 as well as the entire region. SSC has previously noted in its comments on the St. Regis Mohawk Mountain Casino that traffic from the five proposed casinos may result in a back-up of 6.7 miles onto Route 17 from the New York Thruway interchange. SSC's comments on the DEIS indicate that the traffic delays may be even worse—near standstill traffic and heavy delays over extended periods due to the combination of existing traffic and traffic generated by the five proposed Sullivan County casinos.

The DEIS Fails to Adequately Assess the Impacts on the Catskill Park, the Shawangunk Mountain Region, and the Neversink River

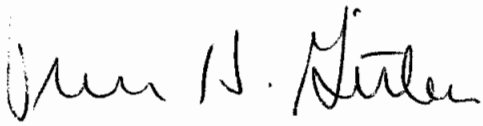
Also attached to this letter is a preliminary report prepared by James R. Strittholt, Ph.D., of the Conservation Biology Institute, which comments on the failure of the DEIS to assess the impact of the Project, the other casino projects and the projected regional induced growth on the nearby Catskill Park (including the New York City watershed) and Shawangunk Mountain Region. This area of New York, including the Hudson Valley, is a critical New York State resource containing over 83% of the state's terrestrial species diversity and over 86% of the land cover diversity. In addition, this report documents the failure of the DEIS to adequately assess the impact of the Project on the Neversink River, the river where American fly fishing was born and which is widely recognized as one of the most important rivers in North America (World Wildlife Fund and The Nature

Conservancy), from elevated stream temperatures which will result from clearing and impervious surfaces constructed as part of the Project.

Conclusion

BIA (together with NYSDEC and local governments) should, as Governor Pataki has requested, undertake a comprehensive, cumulative environmental impact statement assessing the impacts from all five proposed casinos, including their induced growth, as well as all other projects under construction or proposed for the Sullivan County region, which meets the requirements of both NEPA and SEQRA before any critical government agency decisions are made on any of the five proposed casinos.

Very truly yours,



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TIMES HERALD

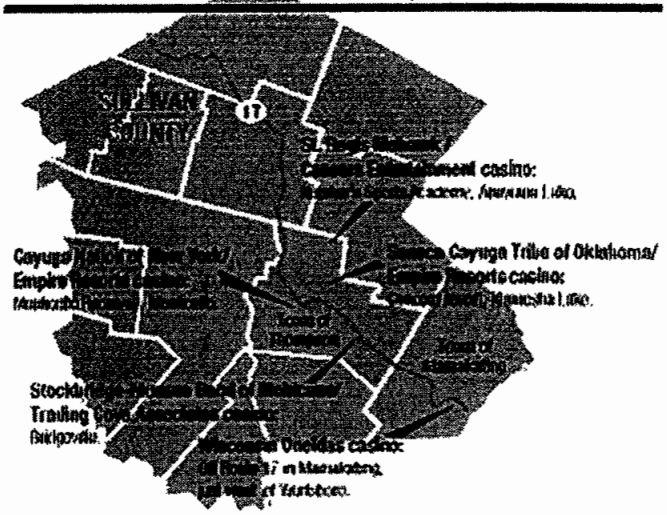
December 12, 2004

Our own little Las Vegas?

Impact of 5 local casinos would be felt

By Steve Israel
Times Herald-Record
sisrael@th-record.com

The five possible Catskill casinos and their Sullivan County locations:



The world has never seen anything like this:

Five of the biggest casinos on the planet.

In our back yard.

In two years.

This is what Gov. Pataki's new indian casino plan could mean for us.

"You're going to be the next Las Vegas, if Pataki has his way," says indian law professor Robert Odawi Porter of Syracuse University.

"There's really no precedent for anything like this, anywhere," says Indian casino expert Robert Batton of the Albany Law School.

"The closest would be Atlantic City, where in 40 months nine casinos opened," says Michael Pollack, the director of Spectrum Gaming, a casino consulting group that prepared an impact study for Sullivan County.

Congress could get the casino ball rolling in two months.

"It would be over and done with once it's signed into law," says the chief of staff for Rep. Maurice Hinchey.

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Twenty thousand new students.
More than 10 million cars and buses heading to the Catskill casinos per year.
How can this happen?
Why so soon?
And what, if anything, can stop it?

What's new?
Gov. Pataki said this week he wants a new law permitting five indian casinos in Sullivan and/or Ulster counties, not the three currently allowed. He also signed deals with two more tribes for casinos in Sullivan County. This comes a month after similar deals with two other tribes. The St. Regis Mohawks already have a deal with the state waiting to be signed.

Who are the players?
- The Mohawks, with their development partner Caesars Entertainment, at Kutsher's Sports Academy.
- The Oneida Tribe of Wisconsin, with the Cordish Company, on 88 acres off Route 17 in Mamakating.
- The Stockbridge-Munsee Band of Mohicans with Trading Cove Associates on 333 acres in Bridgeville.
- The Seneca Cayuga Tribe of Oklahoma, with Empire Resorts, at the Concord resort.
- The Cayuga Nation of New York, with Empire Resorts, at Monticello Raceway.

How can casinos open so fast?
Unlike the lengthy Bureau of Indian Affairs reviews of the past, Pataki's proposal requires Congress to pass a law settling the land claims of the five tribes in exchange for casinos. The state Legislature must also approve. While the law will require environmental reviews, they're not the lengthy ones of the past.

When will this happen?
Congress and the Legislature won't reconvene until January. A high-ranking state official says the target date for congressional action on all five casinos is early February, when the Interior Department appropriations bill may be proposed.

Doesn't the Interior Department have to sign off on the casino deal?
Yes. But even though Interior Secretary Gale Norton has said she frowned on off-reservation casinos – as all of these would be – Interior officials told the state they're OK with them if they're part of land-claim settlements.

When would they build?
A few months after Congress and the state Legislature give their approvals. That means construction could start in the spring or summer of

2005. It would take 12-18 months.

Does Sullivan County have a say?

Sort of. Yesterday, Pataki issued a statement to the Record saying his bill for five casinos would "require each of the tribes to enter into an agreement with the county before they can develop a casino."

Sullivan already has casino agreements with the Mohawks and Stockbridge-Munsee. It has two pending deals with the Cayugas and Seneca Cayugas. That makes four casino agreements. The fifth tribe, the Wisconsin Oneidas, owns land in the eastern Sullivan Town of Mamakating, where it plans a casino.

Still, state Sen. John Bonacic says he won't introduce the bill if the county isn't behind it. And Congress is unlikely to act without a say-so from the state.

But upstate lawmakers could apply pressure to settle the land claims. Their counties, which are home to the disputed land, would get millions of dollars and the assurance they could keep some 300,000 acres of land the Indians say is theirs.

Is this a five-or-nothing deal?

No, although the congressional bill would be for five casinos. But even if that stalls, three tribes with land claim settlements could open casinos in about two years: The Mohawks at Kutsher's, the Stockbridge-Munsee in Bridgeville and the Cayuga Nation of New York at Monticello Raceway.

What could stop five casinos?

Two main things:

A lawsuit challenging the law allowing indian casinos in New York. It's failed two state tests but faces one more.

And/or strong New York opposition, although Republican Pataki will use his party connections to push hard for the bill. It settles land claims that could cost the state hundreds of millions and pumps billions into a state desperate for cash, including the $23 billion it must spend on New York City schools.

Casinos by the numbers:

3: Indian casinos New York state has approved for the Catskills

5: Indian casinos Gov. Pataki has proposed for the Catskills

49: Percentage of Sullivan residents in a 2004 Sunday Record poll who favor casinos in the county

62: Percentage of Sullivan residents in a 2001 Sunday Record poll who favor casinos in the county

- 2,025: New problem gamblers with three casinos, based on national averages

20,000: New students in Sullivan school districts with five casinos

30,000: New jobs with five casinos
359,091: Buses to Atlantic City casinos per year
2.7 million: More cars on local roads to visit three casinos per year
53.4 million: Americans who went to casinos in 2003
$75: Average lost in a two-hour visit at Mohegan Sun
$27,000: Average casino salary in the country
$41,000: Median income of average casino player
$65 million: Cost to Sullivan County communities (education, county and local services) from three casinos
$75 million: Revenue per year to Sullivan County from five tribes (not including new jobs and taxes from commercial growth)
$1 billion: Revenues per year of indian casinos in Connecticut (an unofficial number, since indian casinos don't report income or pay taxes).
$27 billion: Money Americans spend in commercial casinos per year (more than they spend on cable TV, coffee or videos)
Sources: Spectrum Gaming, Sullivan County, U.S. News and World Report, American Gaming Association

Coming tomorrow
Columnist Doug Cunningham on gambling our way to prosperity

Join Steve Israel at 11 a.m. tomorrow for a live chat session on this story. Log onto recordonline.com to ask your questions.

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STATE OF NEW YORK
EXECUTIVE CHAMBER
ALBANY 12224

GEORGE E. PATAKI
GOVERNOR

February 25, 2005

Dear Mr. Keel:

I write to provide certain information to assist the Secretary of the Interior in determining that the Class III gaming facility proposed by the Stockbridge-Munsee Community ("Tribe") in the Town of Thompson, Sullivan County would not be detrimental to the surrounding community pursuant to 25 U.S.C. §2719(b)(1)(A).

I strongly support Class III gaming in the Catskill region – and Sullivan County in particular – as an important element in the economic revitalization of the region. In furtherance of this goal, I signed into law Chapter 383 of the Laws of 2001, which authorized up to three Class III gaming facilities in the counties of Sullivan and Ulster. These facilities are expected to create thousands of new jobs and generate millions of dollars in new investments in this historic resort community. More recently, I have proposed legislation to increase the number of authorized Class III gaming facilities in the Catskill region from three to five. This legislation would also ratify the land claim settlement agreement that the State and Tribe entered into on December 7, 2004 as part of a comprehensive package that would resolve each of the pending Indian land claims in Central and Northern New York, including the Cayuga, Oneida, Stockbridge and Mohawk land claims.

The Tribe's proposal appears to be comprehensive and carefully considered. The project site for this world-class resort and casino is located adjacent to Exit 107 of State Route 17, which is scheduled to become Interstate 86. The project will accommodate a projected 10 million visitors per year, spur economic development in the region and create approximately 5,000 new jobs. The Tribe has already executed an agreement with Sullivan County to mitigate the impacts of the project on the surrounding area.

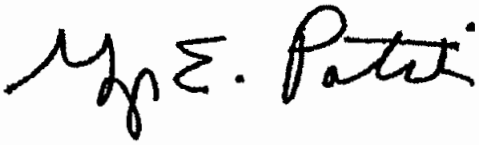
I am advised that the Tribe has prepared a draft environmental impact statement to analyze the potential environmental impacts related to the project. Among other things, the environmental review process requires that the public and involved agencies be given an opportunity to provide substantive comment on a project. I am confident that any environmental issues raised during this process will be addressed to the Secretary's satisfaction.

In assessing the environmental impacts relating to the project, there may be issues arising from the cumulative impacts of locating five casinos in the Catskill region. Therefore, I urge the Bureau of Indian Affairs (as lead agency under the National Environmental Policy Act) to ensure that appropriate consideration is given to the cumulative impacts that five casinos in the Catskill region may have on the community's local resources and that an analysis of any such impacts be included within the environmental impact statements prepared for each of the casino projects. It is my understanding that the Tribe is currently developing such an analysis. Once complete, the Tribe's cumulative impact analysis will provide an assessment of the cumulative impacts associated with five casinos, which may then be incorporated into the analysis prepared for each of the other casino projects and supplemented as appropriate.

The Tribe's project will have far reaching positive economic impacts in the Catskill region. In addition, this project represents a significant benefit to the State and the residents of Madison and Oneida Counties insofar as this process is furthering the settlement of a long-standing Indian land claim. Overall, I am confident that this project will further an ongoing, cooperative relationship between the State and Tribe.

In sum, I believe that the Tribe's proposed casino has tremendous potential to benefit the Tribe and the local community. Assuming that the Secretary determines that the proposed casino would be in the Tribe's best interest and would not be detrimental to the surrounding community, I look forward to my review of that determination in accordance with 25 U.S.C. § 2719(b)(1).

Very truly yours,



Mr. Franklin Keel
Director, Eastern Region
United States Department of the Interior
Bureau of Indian Affairs
711 Stewarts Ferry Pike
Nashville, Tennessee 37214

SAM SCHWARTZ PLLC

MEMORANDUM

Privileged and Confidential
Prepared at the Request of Legal Counsel

To: Philip Gitlen, Esq.

From: Erich Arcement, P.E., PTOE

Date: March 28, 2005

RE: Stockbridge-Munsee Casino DEIS Comments

Project: WO-05-012

Introduction

At the request of Whiteman Osterman & Hanna LLP and the Natural Resources Defense Council, Sam Schwartz Engineering PLLC (SSC) performed a technical review of the traffic portions of the Stockbridge-Munsee Draft Environmental Impact Statement (DEIS). Specifically, SSC focused on Appendix B (Traffic Impact Study), which details the traffic analysis for this project. The DEIS traffic analysis assesses the traffic impacts of the Stockbridge-Munsee Casino on roads in the vicinity of the proposed casino at New York State Route 17 (Exit 107). Because SSC was unable to obtain the appendices to the Traffic Impact Study, despite your request to the Bureau of Indian Affairs (BIA), we were not able to review much of the technical data on which the Traffic Impact Study is based. Accordingly, these comments should be considered preliminary.

SSC reviewed the DEIS to determine the accuracy of its traffic analysis while also being mindful of other similar analyses for planned casinos in other parts of the Catskills region. To this end, SSC also compared the DEIS conclusions and assumptions with the Regional Traffic Impact Analysis (RTIA) prepared as a supplement to St. Regis Mohawk Tribe Mohawk Mountain Casino Resort FEIS. The BIA was the co-lead agency (with the Town of Thompson) for that FEIS.

SSC's review of the DEIS has found that it contains a number of errors and omissions as well as inconsistencies with the data and conclusions contained in the RTIA. Most importantly, however, the DEIS fails to fully address the traffic impacts of the proposed Stockbridge-Munsee Casino. This results in an underestimation of impacts on New York State Route 17 as well as the entire region. Our key findings are the following:

1. The DEIS fails to account for the increased traffic that will be generated by the 5 Catskill casinos of which the Stockbridge-Munsee Casino will be a part;
2. The DEIS neglects to perform a full regional study of the proposed Catskill casinos' traffic impacts, instead relying on an ongoing New York State study that by its own admission does not account for any casinos;

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3. Despite the fact that the BIA is the co-lead agency for the proposed St. Regis Mohawk Mountain Casino and is the lead agency for the Stockbridge-Munsee casino, the DEIS assumes a different capacity for State Route 17 than that reported in the RTIA;
4. The Stockbridge-Munsee DEIS uses the wrong highway classification for State Route 17 (a multilane highway with intersections instead of a freeway with interchanges);
5. The DEIS traffic analysis counted trucks and buses the same as cars. Standard traffic engineering practice requires that trucks and buses equate to between 2 and 3 cars;
6. The DEIS overestimates the trip reduction for travel between Catskill casinos and the Stockbridge-Munsee Casino. In fact, the report contradicts itself;
7. The DEIS fails to include trips between casinos in the Catskill region in its traffic projections;
8. Existing traffic volumes are based on projections from a dissimilar land use (a beach) located more than 350 miles from the project site;
9. With no explanation, the peak month for the Stockbridge-Munsee Casino (June) is different from the peak month assumed for the proposed St. Regis Mohawk Mountain Casino (July);
10. The DEIS ignores the traffic generated by the Sullivan County Performing Arts Center (with a capacity of 17,500 people and a parking lot for 10,000 vehicles), thus underestimating future traffic conditions;
11. The DEIS consistently minimizes the future traffic conditions and the impacts of the Stockbridge-Munsee Casino on State Route 17; and
12. The assumptions and analyses presented in the DEIS and the RTIA cannot be professionally analyzed without the preparation of a comprehensive environmental impact statement that accounts for all planned casino development in the Catskills using consistent verifiable data and consistent reasonable assumptions.

Comment 1 – The DEIS fails to account for the increased traffic that will be generated by the 5 Catskill casinos of which the Stockbridge-Munsee Casino will be a part.

As stated on Page 43 of the DEIS, the traffic analysis only accounts for the "*traffic volumes associated with construction of a third casino in the vicinity of the proposed project.*" This assumption contradicts the Governor's plan to construct a total of five casinos in the Catskills region. By not analyzing the traffic impacts of a fourth and fifth Catskill casino, the DEIS traffic analysis grossly underestimates traffic volumes in the study area, especially on State Route 17.

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Comment 2 – Instead of performing a full regional study of the proposed casino's traffic impacts, the DEIS relies on an ongoing New York State Department of Transportation (NYSDOT) study that by its own admission does not account for any casinos.

According to the DEIS, State Route 17 traffic was only studied at Exit 107 since "*a full regional study is not necessary as it would duplicate NYSDOT efforts. NYSDOT is already looking at regional improvements along State Route 17 as part of [its] Route 17 (Future Interstate 86) Interchange Spacing and Geometrics Study, Delaware, Sullivan, and Orange Counties*"(DEIS, App. B, P.2). This NYSDOT study, however, "*did not specifically include the impacts of one or more casinos in this area*"(DEIS, App. B, P.2). The DEIS acknowledges the limitation of the NYSDOT study when it further states that, "*The Casino Project is proposing some broader scale design solutions because of the increased volumes* ***which NYSDOT did not consider in their design***"(DEIS, P.172, emphasis added). Therefore, the study on which the DEIS depends for the analysis of regional traffic impacts does not analyze the proposed Stockbridge-Munsee Casino or any other Catskill casinos for that matter. Failure to adequately study all casino impacts to the region is a tremendous oversight.

Comment 3 – Despite the fact that the BIA was the co-lead agency for the proposed St. Regis-Mohawk Mountain Casino and is the lead agency for the Stockbridge-Munsee Casino, the DEIS assumes a different capacity for State Route 17 than that reported in the RTIA.

State Route 17 is a four-lane limited access highway that would be the major route to and from the proposed Stockbridge-Munsee Casino as well as all other proposed Catskill casinos. The DEIS estimates the capacity of this roadway as 8,000 vehicles per hour (vph) or 4,000 vehicles per hour per direction (DEIS, P.89). This is very different from the capacity stated in the RTIA, which is 9,000 vph or 4,500 vehicles per hour per direction (RTIA, P.18). This discrepancy indicates that one (or both) of the studies is incorrect. It is likely that both studies are incorrect, since both assume an exaggerated capacity that could only be attained under ideal (no trucks or buses, flat terrain) conditions. Since the area is mountainous and is traveled by trucks and buses (and will be even more so in the future), such capacities are highly unlikely.

Comment 4 – The Stockbridge-Munsee DEIS uses the wrong highway classification for State Route 17 (a multilane highway with intersections instead of a freeway with interchanges).

The Stockbridge-Munsee DEIS analyzes State Route 17 as a multilane highway (DEIS, App. B, P.43). The 2000 *Highway Capacity Manual (HCM)* definition of a multilane highway as a roadway that "is typically located in suburban communities, leading into central cities, or along high-volume rural corridors connecting two cities or two

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significant activities that generate a substantial number of daily trips. Such highways often have traffic signals...Multilane highways are not completely access controlled – they can have at-grade intersections and occasional traffic signals"(HCM, P.12-1,12-2). This definition does not describe State Route 17 between Exit 107 and the New York State Thruway. State Route 17 has no at-grade intersections or traffic signals in this area. It is a limited access-highway with grade-separated interchanges. This section of State Route 17 should instead be classified as a freeway, which is defined as a "divided highway with full control of access and two or more lanes for the exclusive use of traffic in each direction. Freeways provide uninterrupted flow. There are no signalized or stop-controlled at-grade intersections, and direct access to and from adjacent property is not permitted. Access to and from the freeway is limited to ramp locations"(HCM, P.13-1). The DEIS analysis is based on an incorrect assumption that this critical section of State Route 17 is a multilane highway.

Comment 5 – The DEIS traffic analysis counted trucks and buses the same as cars. Standard traffic engineering practice requires that trucks and buses equate to between 2 and 3 cars.

Traffic engineers measure the capacity of a highway in terms of passenger car equivalents (pce). Due to their large size and slower acceleration, one truck or bus is equivalent to approximately 2.5 pces and one RV is equivalent to 2.0 pces (HCM Exhibit 23-8). The DEIS consistently states the capacity of State Route 17 in vehicles per hour (vph). By using vph instead of pces, the DEIS underestimates the volumes and overestimates the capacity on State Route 17. The proposed St. Regis Mohawk Mountain Casino FEIS states that approximately 2 percent of the vehicles using State Route 17 are trucks, buses, or RV's (Mohawk Mountain Casino FEIS, P. 265). Further, it is known and stated that the casinos will generate bus activity.

Passenger cars (or passenger car equivalents) are different from vehicles. The latter assumes a mix of different types of vehicles and the former assumes only passenger cars. 8,000 vehicles per hour are therefore different from 8,000 passenger cars per hour, the units by which capacity and traffic volume are measured in the *HCM* for a facility such as State Route 17. This discrepancy should be addressed since the proposed Stockbridge-Munsee Casino alone would generate up to 30 bus trips during weekend peak hours (DEIS, App. B, P.33) and the other four proposed casinos can be expected to generate similar bus trips during peak weekend hours. In addition, standard traffic engineering practice requires that trucks and buses be counted as between two and three passenger cars.

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Comment 6 – The DEIS overestimates the trip reduction for travel between Catskill casinos and the Stockbridge-Munsee Casino. In fact, as described below, the report contradicts itself.

The DEIS claims that a large amount of the traffic generated by the Stockbridge-Munsee Casino would be shared with the other Catskill casinos. In stating that these "shared trips" would result in Atlantic City-level reductions of "*30 percent for two casinos and 50 percent for three casinos*" (DEIS, App. B, P.34 & 44), the DEIS contradicts the findings of the Catskill Gaming Visitation Analysis (CGVA), on which much of the RTIA was based. The CGVA states that the "*Monticello market will have fewer casinos and a greater distance between casinos and thus [is] expected to be closer in attribute to Connecticut than Atlantic City*"(CGVA, P.5). The Connecticut shared trip reduction is 30 percent, not 50 percent (DEIS, App. B, P.34). With 2,300 peak hour trips (DEIS, App. B, P.59), a 50 percent (Atlantic City) reduction equates to a 1,150-trip reduction while a 30 percent (Connecticut) reduction equals to a reduction of 690 trips. The difference between the Atlantic City and Connecticut reduction is therefore 460 trips. This large discrepancy means that the DEIS is taking too generous a reduction by using Atlantic City as its model.

Further, it should be noted that while the DEIS consistently states that the Traffic Impact Study is a conservative analysis, comparison of Tables 5-16 and 5-17 (DEIS, P.176 & 177), raise questions as to how conservative the analysis really is. Table 5-16 shows that 87% of peak hour trips would utilize State Route 17. With a Sunday afternoon peak of 2,264 vehicles, 1,970 vehicles (87% of 2,264) should therefore be added to State Route 17 during the Sunday peak. However, Table 5-17 states that 365 and 570 vehicles (a total of 935 vehicles) west and east, respectively, are added to State Route 17 at Interchange 107 during the Sunday peak. This is only 41% of the total volume, contradicting what is stated in Table 5-16.

These findings are troubling since both the RTIA and the Stockbridge-Munsee DEIS point to State Route 17 exceeding capacity with only three casinos. According to the DEIS, "*over 75 percent of the traffic generated by the project will be oriented to the east, primarily on State Route 17 to and from New York City and the surrounding metropolitan area*"(DEIS, App. B, P.35). Therefore, more than 75 percent of Stockbridge-Munsee Casino traffic would likely pass through the State Route 17-New York State Thruway interchange (Exit 130) at Harriman in Orange County. Tables 1 and 2 summarize traffic conditions at Exits 130 and 116 in Orange County under existing conditions and in the future with three and five casinos (of which the proposed Stockbridge-Munsee Casino will be a part). These projections are based on State Route 17 traffic data provided as part of the RTIA. Since Exit 116 is closer to the proposed casinos, more traffic will have converged on State Route 17 here and traffic will be heavier than at Exit 130. Proper estimation of the Casino traffic that will be added to this roadway will no doubt worsen conditions on State Route 17. When the five casinos proposed by the Agreements that

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the Governor entered into are in operation, State Route 17 will be far beyond capacity causing miles of queuing and hours of delay. Comment 11 describes the details of a highway that fails due to lack of capacity.

In our review of the RTIA, projections of volumes in that analysis of a five-casino scenario indicated approximately 6.7 miles of queuing approaching the I-87 interchange on a Sunday peak. We are concerned that when the omissions in the DEIS are corrected, traffic conditions may actually be much worse. The entire section of State Route 17 between the New York State Thruway and Exit 107 will likely be characterized by near standstill traffic and heavy delays over extended periods due to the combination of heavy existing traffic and the large amount of traffic generated by the Catskill casinos.

Table 1
State Route 17 Traffic Conditions at Exit 130 (Projected from the RTIA)

	Friday (Westbound)	Sunday (Eastbound)
Existing Condition (RTIA)	3,500	3,000
Three-Casino Condition	4,257	3,910
Five-Casino Condition	4,764	4,520

Table 2
State Route 17 Traffic Conditions at Exit 116 (Projected from the RTIA)

	Friday (Westbound)	Sunday (Eastbound)
Existing Condition (RTIA)	2,900	2,900
Three-Casino Condition	4,414	4,414
Five-Casino Condition	5,428	5,428

Comment 7 – The DEIS fails to include trips between casinos in the Catskill region in its traffic projections.

While taking credit for reduced trips on State Route 17 due to patron trips to more than one casino, the traffic projections used in the Stockbridge-Munsee DEIS do not account for the vehicles that would then have to circulate between casinos in the Catskill region. Despite acknowledging that "*a portion of the proposed project trips may be shared with trips to and from other planned projects in the area*"(DEIS, P.33), the DEIS does not include the circulating, inter-casino traffic in its estimates. Since the large volume of trips shared between these casinos would also use State Route 17 to travel from one casino to another, the result of this oversight is to underestimate traffic on the major regional highway in the Catskills. As seen in Comment #6, this underestimation indicates that the exceeded capacity of State Route 17 may be even greater than reported in the DEIS.

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Comment 8 – Existing traffic volumes are based on projections from a dissimilar land use (a beach) located more than 350 miles from the project site.

The DEIS' adjustment of traffic counts from late August/early September were factored to reflect Friday afternoon mid-summer (July/August) conditions (DEIS, App. B, P.8). This was based on traffic count data collected at a beach in Quincy, Massachusetts. This projection is dubious for two reasons: first, a waterfront resort area and a mountainous rural region have different travel patterns and second, the Quincy site is located more than 350 miles from the proposed Stockbridge-Munsee Casino. Instead of adjusting late summer/early fall counts, the traffic analysis should have used actual July/August data.

Comment 9 – With no explanation, the peak month for the Stockbridge-Munsee Casino (June) is different from the peak month assumed for the proposed St. Regis Mohawk Mountain Casino (July).

The DEIS trip generation is "*based on counts collected on a typical summer weekend (Friday, June 25, through Sunday, June 27, 1999) at the Mohegan Sun Facility. The traffic volumes during these three days represent ninety-fifth percentile volumes for the existing Mohegan Sun facility*" (DEIS, App. B, P.31). This peak month (June) is different from the peak month (July) reported in the RTIA. The CGVA (prepared as part of the RTIA), states "*peak demand for the Mohawk Mountain Casino would be expected to occur on a Saturday evening during the month of July and coincide with the peak summer tourism season of the region*" (CGVA, P.10). Both casinos, being located in the same region, should have identical peak months. If both studies assessed traffic impacts during the same month, higher traffic volumes would likely be reported.

Comment 10 – The DEIS ignores the traffic generated by the Sullivan County Performing Arts Center (with a capacity of 17,500 people and a parking lot for 10,000 vehicles), thus underestimating future traffic conditions.

The traffic projections did not account for the high peak hour traffic volumes (assumed by the DEIS to be 5,000 peak hour trips on event days, although it will likely be higher since 10,000 cars are expected to visit the facility) that will be generated by the Sullivan County Performing Arts Center (now under construction in Bethel, New York), which includes parking for 10,000 vehicles. The DEIS states that this is "*because scheduled events at the Performing Arts Center would be sporadic and inconsistent*"(DEIS, P.17). However, as noted in the DEIS, Appendix B, Table 4, the master plan for the Performing Arts Center includes components (retail, visitors center, exhibition space, and museum) whose use is not "*sporadic and inconsistent*" at all. In addition, the likelihood of a performance being held on a summer weekend (during which the Catskill casinos would generated most of their traffic) is very high. The Tanglewood Music Center in Massachusetts' Berkshire Mountains holds an event on every summer weekend from

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June 24 to the end of August. By ignoring the traffic that would likely be generated by this development, the DEIS further underestimates traffic volumes on State Route 17.

Comment 11 – The DEIS consistently minimizes the future traffic conditions and the impacts of the Stockbridge-Munsee Casino on State Route 17.

The local and regional traffic impacts of the proposed Stockbridge-Munsee and other Catskill casino developments are consistently diminished and obfuscated throughout the DEIS. Page 50 of DEIS Appendix B states that "*under the future Cumulative Build Condition, State Route 17 in this vicinity begins to approach capacity*"(DEIS, App. B, P.50). This is a gross understatement. In fact, as shown in DEIS, Appendix B, Figure 14 and stated on Page 50 in Appendix B of the DEIS, "*summer weekend peak hour volumes could reach 8,100 vph.*" This traffic volume is greater than the 8,000 vph capacity of State Route 17 as stated in the DEIS. Under this heavy demand, State Route 17 would not be able to handle the future traffic demand associated with three casinos (let alone five and the Sullivan County Performing Arts Center) and traffic on the highway would be at a standstill. The road's two lanes would be taxed even by three casinos, which would generate enough demand to occupy more than 100 percent of its capacity during peak periods. When a roadway is above capacity, it operates at Level of Service (LOS) F. The freeway chapter of the *HCM* describes traffic flow at LOS F as a "breakdown" condition that results in queues that "have the potential to extend upstream for significant distances" (HCM, P. 13-10). The complete *HCM* definition of LOS F is as follows:

> LOS F describes breakdowns in vehicular flow. Such conditions generally exist within queues forming behind breakdown points. Breakdowns occur for a number of reasons:
>
> - Traffic incidents can cause a temporary reduction in the capacity of a short segment, so that the number of vehicles arriving at the point is greater than the number of vehicles that can move through it.
> - Points of recurring congestion, such as merge or weaving segments and lane drops, experience very high demand in which the number of vehicles arriving is greater than the number of vehicles discharged.
> - In forecasting situations, the projected peak-hour (or other) flow rate can exceed the estimated capacity of the location.
>
> Note that in all cases, breakdown occurs when the ratio of existing demand to actual capacity or of forecast demand to estimated capacity exceeds 1.00. Operations immediately downstream of such a point, however, are generally at or near capacity, and downstream operations improve (assuming that there are no additional downstream bottlenecks) as discharging vehicles move away from the bottleneck.
>
> LOS F operations within a queue are the result of a breakdown or bottleneck at a downstream point. LOS F is also used to describe conditions at the point of the breakdown or bottleneck and the queue discharge flow that occurs at speeds lower than the lowest speed for LOS E, as well as the operations within the queue that forms upstream. Whenever LOS F conditions exist, they have the potential to extend upstream for significant distances (HCM, P. 13-10).

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The DEIS's conclusion that "*adequate roadway capacity is available to accommodate a third casino in this area, but with heightened delays*"(DEIS, App. B, P.62) is therefore drastically understating the conditions that would exist.

In addition, whereas some sections of the DEIS measure traffic volumes in terms of peak hour traffic, others use daily traffic. The former is the standard means of assessing traffic impacts. However, in Section 3.2.6, which addressed future Build traffic volumes, and Section 3.4, which deals with regional impacts, the measurement of traffic volumes is shifted to vehicles per day (vpd). In this way, the DEIS makes it difficult to assess the true impacts of the proposed project. For instance, if 24,000 cars were evenly distributed throughout the day, then 1,000 cars would pass each hour. However, casino visitors do not arrive evenly throughout the day (just as a highway is not evenly traveled throughout the day). Project-generated traffic volumes would rise and fall throughout the day based on visitor and background travel patterns. The peak hour traffic generated by the Stockbridge-Munsee Casino would be 2,300 vehicles per hour (DEIS, App. B, P.59). For this reason the DEIS should report the hourly traffic volumes for State Route 17 in the future with the proposed project.

It should also be noted that nowhere in the DEIS are peak hour existing volumes on State Route 17 provided. This further complicates the comparison of existing, no build and build conditions. It does not allow for a true assessment of all impacts due to the proposed casinos.

Comment 12 – The assumptions and analyses presented in the DEIS and the RTIA cannot be professionally analyzed without the preparation of a comprehensive environmental impact statement that accounts for all planned casino development in the Catskills using consistent verifiable data and consistent reasonable assumptions.

SSC's review of Appendix B of the Proposed Stockbridge-Munsee DEIS has found that its omissions and errors as well as the discrepancies between its assumptions, analyses, and projections and those of the St. Regis-Mohawk Mountain Casino FEIS are sufficient to warrant the preparation of a comprehensive traffic assessment. This comprehensive assessment would include verifiable data regarding existing traffic volumes and reasonable projections of increased traffic generated by five casinos, the Sullivan County Performing Arts Center and the induced regional growth that is projected for the region. It would also rectify the differences between the RTIA and the DEIS Traffic Impact Study, which include a different calculation for the capacity of State Route 17, different projections regarding shared trips between casinos, and different study area intersections and highways. In their current forms, the Stockbridge-Munsee DEIS and St. Regis-Mohawk Mountain Casino Resort FEIS are insufficient to disclose the full traffic impacts of casino development in the Catskills.

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STOCKBRIDGE-MUNSEE DEIS COMMENTS

Prepared by James R. Strittholt, Ph.D.
March 25, 2005

Importance of Considering the Regional Ecological Context

The Stockbridge-Munsee DEIS fails to address the regional ecological context adequately, which is a serious omission, as well as some pertinent ecological concerns (see some examples at the end of this comment letter). Simply stated, there are many more biological and ecological issues of concern in this region besides wetlands and threatened and endangered species, which the development could impact in spite of the authors' claims (see next section). Additional assessments, especially with regard to cumulative impacts and induced development, are warranted based on the relative ecological importance of the region and the magnitude of this and other casino developments.

Below are some facts that help set the ecological context for any major proposed development for this region.

1. Since the establishment of the Catskills Park in 1904, the amount of conservation lands has grown making this region one of the most successful conservation stories in U.S. history. In spite of this success, most of the native species present in New York are inadequately represented in the existing protected areas network.
2. The Hudson Valley region and neighboring Catskills contains over 83% of the state's terrestrial species diversity and over 86% of the land cover diversity. The region where the casinos are being proposed is particularly important for

mammals, forest birds, reptiles, and amphibians (especially salamanders). From the standpoint of species richness, the Catskills region is one of the most important areas in New York and the northeastern U.S.

3. In a national forest fragmentation assessment, the Catskills region was identified as having exemplary occurrences of unfragmented mature second-growth forests and an important regional node of high forest landscape intactness – the only such node connecting the Central Appalachians and New England.
4. The relatively unfragmented forest communities within the region are of tremendous regional conservation value. Fragmentation of natural habitats throughout the region (especially at low elevations) and continued isolation of the Park (see below) will impact the long-term viability of several important species of vertebrates including black bears, bobcats, and fishers and will significantly impair ecosystem function and services.
5. The Catskill Park is nearly surrounded by developed landscapes that are becoming increasingly hostile to native species and natural processes. The more pronounced the encircling development pressures become, the greater the likelihood of serious and long lasting degradation to many of the ecological values that currently exist. Isolating the Catskills from other regional natural areas has serious ecological consequences.
6. The best remaining opportunity to connect the Catskills to other significantly large natural areas in Sullivan and southeastern Ulster Counties is along the Shawangunk Ridge and associated valleys, which is of global ecological significance. The DEIS does not even mention the Shawangunks, and casino developments would have a direct impact on the Shawangunks with regard to traffic, air quality, fish and wildlife, and functioning natural communities.
7. The numerous freshwater aquatic systems (rivers, streams, lakes, and wetlands) in the region are of global significance and provide a number of important recreational opportunities and ecosystem services (e.g., clean drinking water) to the residents of New York and elsewhere.
8. The induced growth effects of the proposed casino projects will undoubtedly extend into the Catskill Park, including areas of the Park which are part of the New York City watershed; the impact of this growth on that watershed is not considered in the DEIS.
9. The Neversink River, the river where American fly fishing was born, is widely recognized as one of the most important rivers in North America (World Wildlife Fund and The Nature Conservancy).
10. The Neversink River is home to the world's healthiest population of the globally imperiled dwarf wedgemussel as well as 29 other globally rare species. Elevated water temperatures and sedimentation, exacerbated by development, could threaten these as well as more common species.
11. The Neversink River is no longer in a pristine state, but it still maintains most of its biological values. Continuing degradation of the Neversink and other waterways could easily result in irreparable damage to this world class aquatic resource and trout fishery, which has both ecological and economic consequences to the region.

Impacts to the Neversink River

The Stockbridge-Munsee DEIS discusses the various measures that would be employed to minimize direct impacts to the Neversink River particularly with regard to minimizing sediment loading during construction, eliminating untreated wastewater and stormwater to the river both during and after construction, and the maintenance of riparian vegetation. Because of these measures, the DEIS states there will not be any direct impact on the Neversink River and therefore no detailed analysis of the Neversink River is required. The two direct impacts to the Neversink of particular concern include increasing water temperatures and increased sedimentation. With regard to the increased water temperatures, the DEIS fails to take into account research from the Pacific Northwest that clearly demonstrates stream temperatures are not only impacted by water loading and direct solar heating but also ambient air temperature. In fact in some studied systems, ambient air temperature, elevated by even modest levels of forest clearing and routine heating of impervious surfaces, was the most important driver of stream temperatures. Therefore, controlling warmed wastewater from reaching the river and keeping the riverbank somewhat shaded by riparian vegetation is inadequate. The proposed casino development will include a large area of impervious surface in close proximity to numerous feeder streams to the Neversink River, and the DEIS does not consider this potentially very important factor in contributing to increased water temperatures. To assess this issue properly, the EIS will need to conduct a basin-wide, multifaceted subwatershed assessment of the Neversink with regard to the proposed development, especially as it applies to cumulative impacts and induced growth. Components to the spatially explicit hydrologic model should include - (1) stream cover, (2) natural and man-made water flows, (3) subwatershed cover, (4) amount of impervious surface, and (5) roads. Existing subwatershed condition should be determined and relative sensitivity to further development assessed. The tools and methodologies exist to conduct these assessments and, although time consuming and costly, these assessments are warranted under the circumstances.

Cumulative Impacts

The potential for serious cumulative impacts is significant with regard to many of the issues addressed by the DEIS including but not limited to air pollution, traffic, water use, and vegetation and wildlife. There are other issues that should be addressed such as direct impacts on the Neversink River discussed above as well as some of the regional ecological issues not even acknowledged in the report (see list of examples at the end of this comment letter). For the issues addressed by the DEIS, the authors summarily dismiss most of them as having little or no potential for resulting in cumulative impacts on the environmental quality of the region. Few details are provided for any of these, and where some cumulative impacts are deemed possible, the assumption is made that the impacts would be diffused over such a large region rendering them inconsequential and benign. Not only is this last sentiment totally false – diffused developments can have profound impacts on ecosystems – but the lack of scientific rigor in addressing this extremely important EIS requirement is totally unacceptable. The most significant

ecological and environmental impacts to the region will come as the result of cumulative impacts of currently planned developments and even more importantly as the result of the induced growth catalyzed by the casinos.

Induced Growth

There is no debate whether or not there will be induced growth as the result of the casino developments. The DEIS discusses the significant growth in the regional human population and secondary development in the way of housing, businesses, and services. The speed and magnitude of these changes are dependent upon the number and size of the proposed casinos. If the proposed developments go forward, the region will undoubtedly be transformed from its present condition to a state of development the region has never experienced. CEQ NEPA regulations require an analysis of potential indirect effects including environmental degradation. The Stockbridge-Munsee DEIS makes three basic arguments for dismissing any meaningful attempt to account for the long-term environmental consequences of casino development in the form of induced growth.

1. It is difficult to separate out induced growth as the result of casino development from growth that would otherwise occur anyway.
2. Potential induced growth cannot be reliably assessed because precise locations are not known.
3. Each future development would be adequately constrained by existing regulations and local land use planning processes.

All three arguments are inadequate individually or cumulatively and therefore the CEQ NEPA requirement to assess induced growth has not been met. With regard to the first argument, induced growth would never be assessed if this argument is upheld. It is because of the dynamic nature of development and the recognition that development begets more development that this requirement was written in the first place. In this particular instance, casino development could virtually transform the region within a decade, and it is especially for these types of situations that the NEPA regulation was most intended. To argue that it is too difficult to estimate impacts is unacceptable. Given the biological importance of the region and the magnitude of the potential impacts from the casino development, I find it incomprehensible that no prescriptive assessments could be done. To simply state there is insufficient information on the spatially explicit nature of future developments is inadequate and unacceptable. While it is true nobody knows exactly how and where development pressures will occur next, there is ample information that would allow for a number of spatially explicit buildout forecasts to be generated and assessed. There are numerous multiscale spatially explicit forecasting tools currently available that can and should be utilized to do this work.

Relying on existing regulations and local zoning laws is not an adequate safety net and making the assumption that these factors will adequately mitigate unacceptable conditions is unsupported. This is especially true when operating in a region where local rule is so powerful with regard to land use decisions. For example, the Town of

Mamakating, a possible location for one of the five casinos, recently modified their Master Plan rezoning a large area once part of the Shawangunk Ridge and Valley Protection Zone to development allowing for the construction of 10-story hotels, condominiums, apartments, townhouses, and commercial businesses. Local land use zoning commissions historically focus only on their area of influence and rarely consider the broader context for their actions frequently resulting in unforeseen negative environmental and quality of life consequences. Without the proper cumulative impacts assessments, planning and development mistakes could be serious and for all intent and purposes permanent.

The DEIS provides no insight into the long term environmental consequences of the casino developments. The construction of as many as five casinos in a predominantly rural region of New York which contains numerous ecological and biological values warrants a much more thorough treatment of both cumulative impacts and induced growth. These assessments need to be as spatially explicit as possible, should be conducted at multiple spatial scales, and should include many more measurable ecological topics of concern including but not limited to the -

- possible isolation the Catskills Park from neighboring natural areas
- ecological integrity of the Neversink River
- globally significant Shawangunk Ridge and Valleys
- large home range species present in the region
- regional forest integrity
- regional connectivity

United States Department of the Interior

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Trust Services
Environmental Management

APR 08 2005

Mr. Philip H. Gitlen
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One Commerce Plaza
Albany, NY 12260

Dear Mr. Gitlen:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino on behalf of the Natural Resource Defense Council (NRDC). We have the following response for your comments.

(1) Your request for an extension of the public comment period for this project was denied. You also report that you requested appendices but they were not provided.

The comment period was per Department of Interior (DOI) requirements in 516 DM 4. This office did not receive your March 17th request for appendices. We only received a single phone request from a representative from the NRDC, requesting a copy of the DEIS. We offered the NRDC a CD ROM that contained all of the appendices. They refused the DEIS on CD ROM. They would only accept a paper hard copy, so we directed them to the contractor who provided a paper hard copy of the DEIS. The contractor reported that the paper hard copy of the DEIS that they provided to the NRDC included all appendices. If the appendices were not included in the hard copy, they should have notified us at that time. We were not notified that any appendices were missing. The NRDC had both access and adequate time to review the DEIS. The Bureau of Indian Affairs (BIA) is not responsible for the NRDC's refusal to accept the CD ROM or failure to inform the BIA that appendices were missing.

(2) The DEIS fails to disclose BIA's role in its preparation.

That is incorrect. Page 1 of the introduction clearly states that the DEIS is for the purpose of BIA National Environmental Policy Act (NEPA) compliance for the Federal action of taking the casino property into trust. That requires the BIA to be responsible for its content. The DEIS was prepared by Rizzo Associates, contracted to write the DEIS under direct BIA supervision. Page 277 lists the preparers of the DEIS. The relationship between the contractors and the BIA staff are defined by the requirements in the DOI and BIA manuals.

(3) The DEIS fails to present the cumulative adverse environmental impacts of five casino projects in Sullivan County.

As already noted in the DEIS, the Final Environmental Impact Statement (FEIS) will include additional information. The regulation 40 CFR 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. We only have applications from three tribes for casinos in Sullivan County. As stated in the DEIS, the information is unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that the proposed casinos will have similar drawing power and will be located within a short distance of Route 17. The original three casino State approval allowed for casinos in both Sullivan and Ulster Counties. A casino in Ulster County would have a much different impact. Without hard data it would be irresponsible to attempt to project full quantitative impacts, and the speculation that will be presented in the FEIS must be considered subject to considerable error.

Your news paper article cannot be considered a reliable source for detailed analyses. We must have an application from the tribe that documents tribal plans. While you may contend that the Governor's signature on a settlement agreement makes a casino reasonably foreseeable, the Department of Interior's Solicitor's Office lawyers disagree.

The Indian Gaming Regulatory Act (IGRA) built controls into the process so that even the unknown impact of five casinos can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues, such as school impacts, crime and other social issues. Under IGRA each tribe also has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

You note that Governor Pataki desires a five casino cumulative impact analysis. As already stated, the FEIS will include as much information as reasonably possible. The intention of a State compact under IGRA is solely for the mitigation of potential impacts under State control. IGRA disallows payments to the State in lieu of taxes. If the State chooses to use the mitigation payments as IGRA intended, the issues under State control such as traffic along Route 17 and associated air quality will be very well funded and fully mitigated. The reported projection of State income resulting from each casino would far exceed any currently projected impact from each casino due to the large percentage of slot machine revenues that the State is reportedly requiring. This mitigation funding will be under State control and available to mitigate any and all potential impacts. It is the responsibility of the Governor of New York to determine what level of mitigation is required by the State. It is the State that also must determine where that money is used. Should another traffic lane be required for Route 17 to accommodate five casinos, the

State should have ample funding available to do that work, solely due to the projected State income associated with those five casinos. It is the Governor of New York who signed the land claim settlement agreements for the five potential casinos and who must also sign the compacts with the tribes. It is the State that also controls construction funding for Route 17. Under IGRA the compacts between tribes and states are negotiated separately from the NEPA procedures, with the results not known until after NEPA completion. So while the actual percent of the State share from the casinos is not yet known, the reported income projections far exceed projected impacts.

(4) The cumulative impacts of five casinos must be presented in a Supplemental DEIS.

The DOI Solicitor's Office lawyers disagree with your assertion. See the response to # 3 above. As stated in the DEIS, the FEIS will include additional narrative on the potential impacts from five casinos. However, this analysis will not be quantitative due to the unknown information. As also noted above, IGRA provides for full mitigation through the required State compact and local agreements, even when some information may be unknown. While NEPA is intended to analyze and then plan mitigation for any negative impact due to a Federal action, this Federal action must also comply with IGRA. The Federal approval process under IGRA requires mitigation provisions as an integral part of the approval process, rather than just planned mitigation in the FEIS as required under NEPA. IGRA thereby exceeds NEPA requirements. Even when unknown information prevents full analysis under NEPA full mitigation is already provided for by IGRA. It will not deprive the public of commenting on the project when the FEIS includes additional details on the five casino cumulative analysis, nor does it prevent the BIA from considering such comments. We receive comments during the waiting period after the Notice of Availability (NOA) for the FEIS is published. While we may not respond to each letter individually, we do acknowledge the general content in the Record of Decision (ROD).

(5) The DEIS fails to disclose that the Stockbridge-Munsee Casino Project will require issuance of a New York State Water Supply permit, which will require the preparation of an Environmental Impact Statement under the State Environmental Quality Review Act (SEQRA).

The Tribe does not require a water supply permit. The casino site would be trust property, and not under State control. The water supply would be provided by the Village of Monticello as a contract supplier. Under any such contract the work would be paid for by the party receiving services. The Village of Monticello will be the permit holder and would be responsible for State requirements, not the Tribe. The Tribe is cooperating with local governments by providing a copy of the DEIS for their SEQRA processes for pipeline and roadwork, but the permits are not being issued to the Tribe. You are also incorrect in stating that the BIA already concluded that the project may have a significant adverse effect on the environment. The contract work is a separate environmental review process because there is no single issue requiring joint approval. The Federal action triggering NEPA is the fee-to-trust transfer of the casino property. The BIA concern is for the Federal trust property. Federal trust property is not under State or local

jurisdiction. The local government laying pipelines or doing road construction concerns only property under State jurisdiction. The Mohawk project was different in that their casino project occupied both fee and trust properties so was subject to both Federal and State jurisdiction.

(6) The traffic study grossly understates the traffic conditions from three casinos and completely fails to disclose the extent of traffic that will be created from five casinos.

The traffic study in the DEIS has been reviewed and approved by professional BIA Roads Engineers with many years experience in such matters as a valid traffic study. While different traffic studies may provide different projections due to different resource materials, the differences do not invalidate either study. All projections into the future are subject to error and are based on resource materials that are also subject to error. Additional narrative will be added to the FEIS that relates to the potential five casino cumulative impact, but the projections that will be provided must be considered subject to even more error, since the required information is unknown for the two additional casinos.

(7) The DEIS fails to adequately assess the impacts on the Catskills Park, the Shawangunk Mountain Region, and the Neversink River.

Studies show that casino patrons generally limit themselves to casino visits and general tourism activities such as shopping and dining. Visits to natural areas are not common for casino patrons. The casino trust property would be subject to EPA control. Impacts due to regional growth are subject to State control and control by the Delaware River Basin Commission. Visits to natural areas may increase with regional growth, but all impacts to such natural areas are controlled by the appropriate agencies. Projecting impacts on such natural areas would have to be based on the controlling agencies not doing their jobs.

You request a comprehensive five casino Environmental Impact Statement. The Federal action triggering NEPA is the fee-to-trust transfer process for each individual tribal casino property. Each requires a separate analysis for these individual decisions. The additional narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible, considering the lack of complete information. Your comments have been assessed and considered and do not warrant further agency response.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K. Lamb

Director, Eastern Region

ACTING

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To: Franklin Keel, Regional Director U.S. Dept of the Interior BIA Attn: Kurt Chandler	From: Ron Urban Trout Unlimited-NY
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NEW YORK STATE COUNCIL TROUT UNLIMITED
PO Box 815 * Port Ewen, New York 12466

March 28, 2005

By Facsimile (615) 467-1701

Franklin Keel, Regional Director
U.S. Department of the Interior
Bureau of Indian Affairs
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214
ATTN: Kurt Chandler

RE: Draft Environmental Impact Statement for the Proposed Stockbridge-Munsee Casino, Sullivan County, NY
Comment Period Expiration Date: March 28, 2003

Dear Mr. Keel:

I am writing in my capacity as the chairman of the New York State Council of Trout Unlimited (TU), in support of the comments submitted by The Nature Conservancy's Neversink River Program (TNC) on the scope and implementation of the Draft Environmental Impact Statement (DEIS) filed by the Stockbridge-Munsee Community Band of Mohican Indians. The New York Counsel of TU hereby endorse the comments submitted in response to the Draft Environmental Impact Statement by TNC, and concurs in TNC's views about the lack of substantive review of and analysis in the current form of the DEIS.

TU is a private, non-profit organization dedicated to conserving, protecting, and restoring North America's trout and salmon fisheries and their watersheds. For over 40 years, TU has accomplished this mission on local, state and national levels with an extensive and dedicated volunteer network. Currently, TU has over 130,000 members and 500 chapters nation wide, and over 8,000 members and 30 chapters located in the state of New York.

As an advocate for coldwater fisheries and the watersheds that support them, TU has taken an especially strong interest in the economic and ecological importance of the rivers that make up the Upper Delaware Watershed. The rivers of this watershed, including the Neversink River, make up one of the single most famous fly fishing destinations in the world. As a priority watershed, the Neversink River has been at the heart of a concentrated effort by Trout Unlimited to address ecological concerns affecting the biological health of the Neversink system for over 20 years. Our interest in this particular river is long standing, as is our membership's commitment to ensuring that the health of the river is not lost in myriad of topics that surround casino gaming in Sullivan County.

TU fully supports all points listed in TNC's comments, and would like to add additional emphasis on the following areas of concern:

1. The lack of scientific modeling throughout the entire DEIS as it relates to almost every aspect of environmental impact. It is not enough to simply say there will be no impact on water supply, wetland buffers, intermittent streams, aquatic biota, etc. A project of this size will have impacts, understanding those impacts are critical to ensuring the health of the surrounding ecological community.
2. There is no adequate case study and evaluation of wetlands as a viable means of mitigation for projects of similar size with similar limited buffer issues.
3. The lack of detailed standards for constructed wetlands that relate to storm and waste water management and wildlife habitat.
4. The lack of a detailed monitoring plan for the constructed wetlands as viable mitigation measure.
5. No in depth analysis of the cumulative impacts of proposed wastewater loadings into the Neversink River.
6. The lack of analysis concerning various environmental impacts, ie. elevated thermal and sediment discharge, on downstream biotic communities, with particular emphasis on Neversink Gorge State Unique Area and its resident population of wild native brook trout, as well as the endangered Dwarf Wedge Mussel found below the Gorge Area.
7. The lack of any analysis of cumulative impacts of additional development (including any future casinos and proposed Water Park at Holiday Mountain) on the Neversink watershed and sub basin.

TU is not opposed to development, nor the economic stimulus that accompanies growth, we just believe in placing environmental concerns on an equal par with other considerations. Smart growth can and should incorporate sound environmental planning as part of any community's long term strategy. It is even more critical when dealing with pristine and ecologically sensitive areas, such as the Neversink Watershed.

The pristine nature and ecological importance of the Neversink River makes any project extremely problematic, especially one of this scale and magnitude. In its current state, the DEIS is severely lacking in any real scientific analysis of the biological impacts to the Neversink Watershed and is incomplete in its evaluation and proposed mitigation of the potentially significant issues associated with this project. Please include me in any and all on going dialogues and meeting agendas.

Sincerely,

Ron Urban
Chairman, NY Council of Trout Unlimited

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 2 2005

Mr. Ron Urban
New York Council Trout Unlimited
P.O. Box 815
Port Ewen, NY 12466

Dear Mr. Urban:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You state that you support comments sent to us by The Nature Conservancy's Neversink River Program. We did not receive comments from The Nature Conservancy for the Stockbridge-Munsee Casino project. Your numbered issues are as follows.

(1) You state that there is a lack of scientific modeling, and you believe that a lack of modeling keeps us from understanding the impacts. You claim that only modeling can bring the critical understanding that ensures the health of the surrounding ecological community.

Modeling is not a Bureau of Indian Affairs (BIA) National Environmental Policy Act requirement. Please consider that the site selected for the casino was filled with abandoned automobiles, oil spills and a surface mine that required extensive remediation. There was a very large volume of debris at the site. The Neversink River water was definitely impacted with every storm event due to these former uses. The BIA required extensive remediation of the site to bring it into a condition suitable to bring into trust. We also required an extensive stormwater control system to make sure that Neversink river impacts would be minimized. The DEIS is intended to document projected impacts based on the Federal decision. A Federal decision to deny the casino would allow the resumption of the automobile salvage yard and surface mining operations. Modeling projected casino impacts would not consider the site history and the potential return to these historical impacts.

(2) There is no adequate case study and evaluation of wetlands as a viable means of mitigation for projects of similar size and similar limited buffer issues.

Any wetlands created for the project are intended as replacement wetlands. A more detailed wetlands replacement plan will be provided in the Final Environmental Impact Statement (FEIS). The stormwater controls are designed to minimize impacts even

without the wetlands. Wetlands have been scientifically proven to provide a beneficial additional benefit of nutrient reduction, while providing an additional settling area for water clarification. The slow water flow from the wetland into the Neversink River also allows water temperature acclimation.

(3) You claim a lack of detailed standards for constructed wetlands that relate to storm and wastewater management and wildlife habitat.

Additional information on replacement wetlands will be provided in the FEIS. Wastewater will be contracted for treatment off-site. Wastewater will not flow into the wetlands and will not impact wildlife habitat.

(4) You believe that a wetland monitoring plan is necessary.

Since the stormwater controls are sufficient even without the wetlands, monitoring is not needed. The additional benefits of the wetlands are appreciated as a bonus that is taken advantage of for even higher water quality, but not a mandatory control measure.

(5) There is no in-depth analysis of cumulative impacts of proposed wastewater loadings into the Neversink River.

The project does not propose any wastewater loadings into the Neversink River. All wastewater would be contracted to the Thompson Kiamesha Lake Wastewater Treatment Plant that uses tertiary treatment to meet stream standards. The Mohawk Mountain Project would discharge water into the Anawana Brook. That project also includes tertiary treatment that will meet stream standards. These discharges would meet stream standards even without the high volume dilution that they will undergo. Without stream loading there is no potential for cumulative impact.

(6) You believe that there is a lack of analysis concerning various environmental impacts, such as elevated thermal and sediment discharge and impacts on downstream biotic communities.

Please take the time to examine the flow patterns and projected volumes of stormwater flows as our scientists have done. The stormwater control system is very thorough and complete. Because of the potential of severely impacting a cold water stream with warm stormwater by adding impervious surfaces to the site of a former surface mine with oily debris, our scientists required complete site remediation and that an extensive description of the stormwater controls be included in the DEIS. These requirements are the result of our scientist's efforts to ensure that the impacts you imagine do not happen.

(7) There is a lack of cumulative analysis of additional developments on the Neversink River watershed and sub basin.

As already noted in the DEIS, the FEIS will include additional information on the cumulative impacts of five casinos. The regulation 40 Code of Federal Regulations (CFR) 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. As stated in the DEIS, information is currently unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. The exact location in relation to other water users is especially important in considering potential aquifer impacts. We can only provide a limited speculative narrative based on assuming that all the proposed casinos will have similar drawing power and will be located within Sullivan County close to Route 17. Since the specific size and location of two of the proposed casinos are unknown, it would be irresponsible to attempt to project full quantitative impacts that would be subject to considerable error. The additional narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

Watershed impacts are under the control of the State and local agencies and Delaware River Basin Commission. These agency's controls are designed to prevent potential regional cumulative impacts. Every type of discharge from the proposed projects is subject to control and permitting requirements. Consider the hydrology of the basin. Regional growth will include an addition of impervious surfaces to the watershed and more water will be pumped from the aquifer. The water balance will be shifted toward surface water, but the total water quantity in the basin will not be significantly impacted. The water quality of this additional surface water is subject to control by the various agencies. Due to the natural hydrogeologic processes, none of these issues present an overall cumulative impact to the watershed. The site specific lower water tables will still draw surface water to the aquifer where it is naturally filtered. There will still be adequate stream volumes for minimum flows for the various aquatic species. The greater surface flows to natural lakes and ponds will make them important aquifer recharge areas. These natural processes work to keep the system in balance, while the human controls are in place to prevent interference with the natural controls. All Tribal trust properties are subject to environmental controls issued by the Environmental Protection Agency. Controls and mitigations are in place for every project aspect to assure that the casino projects do not have the impacts you fear. While regional growth may have some impacts in changing community character, as well as adding impervious surfaces, the appropriate regulatory authorities can limit most natural resource impacts.

Your statement that "the DEIS is severely lacking in any real scientific analysis of the biological impacts to the Neversink watershed and is incomplete in its evaluation and proposed mitigation of the potentially significant issues associated with this project" is in error. Facts presented in the DEIS include the former site uses and potential return to those watershed impacts and the detailed description of the stormwater controls. Your statement appears to ignore the hydrology of the watershed, and ignores the regulatory

agencies and controls in place that are designed to protect the watershed. When the system is designed to avoid river impacts, the lack of impacts prevents the analysis. Your comments have been assessed and considered.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Vell

Director, Eastern Region

JOAN IACONO

Attorney and Counsellor at Law

FAX TRANSMITTAL
OUR FAX NO.: 914/961-3333

DATE: March 28, 2005

TO: Franklin Keel

FROM: TGF

RE: DEIS: Stockbridge-Munsee Casino, Sullivan County, NY

FAX NUMBER: (615) 467-2939

NUMBER OF PAGES 10 INCLUDING COVER SHEET

COMMENTS:

An original letter shall be forwarded via overnight mail.

The information in this facsimile message is confidential, and attorney-privileged information intended only for the use of the individual or entity named above. If the reader if this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication by error, please immediately notify us by telephone, and return the original message to us at the above address via the U.S. Postal Service.

Thank you.

81 Pondfield Road, Suite 8, Bronxville, N.Y. 10708
(914) 961-0565 Fax (914) 961-3333

Theodore Gordon Flyfishers Inc.
P.O. Box 2345, Grand Central Station, New York, NY 10163-2345

04-06-05P02:23 RCVD

March 31, 2005

VIA FAX and FEDEX
Mr. Franklin Keel
Regional Director, Eastern Regional Office
Bureau of Indian Affairs
711 Stewarts Ferry Pike
Nashville, Tennessee 37214

Re: Draft Environmental Impact Statement for the Proposed
Stockbridge–Munsee Casino, Town of Thompson, Sullivan County, New York

Dear Mr. Keel:

I am writing to confirm that your office received our Comment letter dated March 27, 2005 which was faxed on March 28, 2005.

Furthermore, I herewith enclose the original Comment letter for your file.

Thank you.

Very truly yours,

John L. Barone
TGF Conservation Committee

Theodore Gordon Flyfishers Inc.
P.O. Box 2345, Grand Central Station, New York, NY 10163-2345

March 27, 2005

VIA FAX and FEDEX
Mr. Franklin Keel
Regional Director, Eastern Regional Office
Bureau of Indian Affairs
711 Stewarts Ferry Pike
Nashville, Tennessee 37214

Re: Draft Environmental Impact Statement for the Proposed Stockbridge–Munsee Casino, Town of Thompson, Sullivan County, New York

Dear Mr. Keel:

I write on behalf of the five hundred members of the Theodore Gordon Flyfishers (TGF), a dedicated group of conservationists and anglers who are deeply concerned with the future of the Neversink River and the ecosystem that thrives within its watershed.

TGF was founded during the 1960's to protect the rivers of the Catskills from potential damage associated with construction and development along their banks. TGF sponsors programs such as "Trout in the Classroom," an environmental education program that has been integrated into the curriculum of over 80 classrooms throughout New York City and State to help develop in children an understanding of their shared aquatic resources. TGF's members have served as educators on various subjects and as advocates for many of New York's rivers during the past 40 years. Moreover, TGF considers the rivers of the Catskill region to be its "home waters." Most of TGF's members reside in the tri-state area of New York, Connecticut and New Jersey, a number of whom reside within Sullivan County and the Catskill Preserve. TGF considers protection and conservation of the Catskill waters to be its primary goal and purpose.

Nestled in the Catskill Mountains, the Neversink River, along with the Delaware River into which it flows are two of several world class trout streams in this region that support sizable wild trout populations. The trout streams of the Catskills are revered among fishermen across the nation as the birthplace of American flyfishing and the home of our namesake, Theodore Gordon. As a vital trout producing stream, not only does the Neversink River maintain its own trout population, but it also adds support to the trout population of the Delaware River. The

Neversink River has been established as a historical and recreational treasure of the Catskills that continues to attract thousands of anglers every year.

The proposed Stockbridge–Munsee Casino will have a devastating impact on the ecosystem of the Neversink River and its watershed. Based upon our review of the development outlined in the DEIS, TGF is troubled by the foreseeable detriments to the following: water quality; water supply; fish, insect, wildlife and habitat; numerous intermittent streams and wetlands; aesthetics and viewshed values; and historical and recreational preservation. Furthermore, the DEIS largely ignores the prominence and local importance of the Neversink as a trout habitat. Any damage to these resources would directly affect the members of TGF and their interests. The DEIS also fails to take account of cumulative impacts that will result from this Project and generally, artificially minimizes the expected impacts from construction and operation of the subject development. Therefore, we hereby request that the subject proposal is modified to include the recommendations of TGF and the recommendations of other conservation groups that have objected to the DEIS and exposed its deficiencies.

I. WATER QUALITY

Water quality is the single most important element for a healthy trout population. Trout require very clean, cold, well oxygenated water, and their population in the Neversink indicates a high quality stream. By the same token, trout are very sensitive to habitat degradation. As it is, every year the ecosystem of the Neversink is stressed with problems of maintaining cold temperatures and adequate water levels during the hot summer months and the negative impacts from a project of this size, especially in concert with induced development such as homes for thousands of new residents and the businesses to service them, clearly threatens to destroy this precious habitat. The ecosystem is so delicately balanced right now that there is simply no buffer that will allow it to absorb the changes that will occur if the casino is built at this proposed location.

A. Stormwater Management

1. Impervious Surfaces

The creation of large impervious surfaces is one of the most commonly recognized threats to stream quality from new development. Stormwater, largely from impervious surfaces, loads sediments, nutrients and thermal loads into receiving streams, along with chemicals which collect on parking lots. Such particulate and thermal pollution will inevitably cause increased water temperatures, turbidity and sedimentation in the Neversink. According to the New York State Stormwater Management Design Manual, p. 2-1, "volume of stormwater runoff increases sharply with impervious cover. For example, a one-acre parking lot can produce 16 times more stormwater runoff than a one-acre meadow each year (Schueler, 1994)." The DEIS states that the project will result in approximately 47 acres total of impervious surfaces [DEIS 5.3.1.1]. The DEIS attempts to minimize the effects of such development by focusing on the point that the construction will occur on lands that are already unvegetated and where large-scale land use

disturbances have occurred for years [5.3.1.1]. Of course, the DEIS fails to mention that the excavation associated with the casino construction and the resulting **impervious** surfaces will result in impacts that far exceed the impacts associated with the prior on-site mine operation during its entire projected period of operation (NYSDEC Comment Letter, December 15, 2003).

2. Mitigation

The DEIS does not adequately mitigate the impacts associated with stormwater flows. It describes a management system which, for example, is designed at best to remove about 75 percent of the total suspended solids from the stormwater runoff. This clearly would allow a substantial amount of sediment pollution to reach the stream. The table below summarizes findings of a study of average pollutant removal using properly maintained infiltration basins that were sized to treat runoff from a one-inch storm. Although the majority of each of these pollutants was removed using infiltration basins, the table makes it clear that a significant fraction of these pollutants can end up in waterways. Considering the potential total loading from a project of this size, pollutants such as total suspended solids (TSS) are likely to have an impact on the more sensitive biota upon reaching the Neversink.

Pollutant Removal Efficiency of Infiltration Basins (from Schueler, 1987)

Pollutant	**Pollutant Removal(%)**
TSS	75
TP	60 – 70
TN	55 – 60
Metals	85 – 90
Bacteria	90

The current extent of impervious surfaces created under this plan and the very narrow buffer area between this site development and the Neversink River provides reason for concern about impacts to this ecosystem and its inhabitants which include fish, insects and other wildlife. More than 20 species of fish are known to use the habitat directly adjacent to the site and further downstream. Many of these species, as well as the aquatic insect fauna they feed upon, would be impacted by improperly handled runoff. Native brook trout populations live year-round in the Neversink Gorge State Unique Area just a few miles downstream of this location in a sensitive habitat prone to upstream impacts, especially elevated thermal and sediment discharges. Finally, significant water quality impacts from the casino site may easily be transferred far downstream potentially impacting the large population of federally endangered dwarf wedgemussels.

More fundamentally, the DEIS relies on a Storm Water Pollution Prevention Plan (SWPPP) that conceptually is adequate to address general matters, but fails to address location specific concerns [DEIS, Appendix K]. Although understandable that a final SWPPP may not be available during the preliminary stages of a proposed development, storm water project details must be available for analysis in the DEIS to enable concerned citizens and groups to comment on whether the SWPPP will properly address issues unique to the proposed site.

The DEIS routinely states that the concerns that accompany stormwater flow shall not impact the Neversink watershed. Even throughout the responses to written comments [Appendix A, A-3], the DEIS relies on the belief that the intended stormwater management system will sufficiently treat all water prior to flows reaching the Neversink and therefore, the manmade wetlands on the site will not be created with the intended purpose of stormwater management and the need for advanced hydrologic studies and consistent water monitoring is completely unnecessary [Appendix A, A-3, Pg. 8]. Such reliance on the infallibility of this stormwater management system seems incredibly risky and shortsighted.

One issue unique to this proposed site is the close proximity to the Neversink River of the entire development. The stormwater management for the project outlined in Section 5 of the DEIS, sets appropriate goals, but underestimates the reasonably foreseeable direct and indirect impacts to the Neversink watershed. As mentioned above, water quality and thermal impact from the site are of particular concern. According to the DEIS, the storm water management systems are allegedly sized to handle any type of storm event [5.2.1.4.] and the infiltration basins can handle frequent storm events, yet the proximity of these basins (as well as the water quality basins and swales) to the Neversink River may lead to significant pollutant discharge to the river during a wide range of storm events (note: that the last two late-summer/early-fall periods have been some of the wettest on record, repeatedly being in the 25 to 50 year event range). Pollutants that infiltrate into groundwater will only move a short distance through alluvial soils before entering the Neversink River, a distance that may be inadequate to filter these pollutants. The effectiveness of infiltration basins are known to be closely related to the infiltration rates of the soils upon which they are located. Infiltration rates that are too high can lead to inadequate treatment while low infiltration rates can lead to clogging of the system. It is unclear whether the appropriate tests to the site's soils have been conducted to determine whether the infiltration rates are adequate to provide sufficient treatment considering the proximity to the river. Furthermore, the DEIS does not explore the effects from a failure in its stormwater system. Sure, the DEIS claims to have emergency plans in place, none of which are discussed thoroughly, yet it does not address the impacts that would occur if these systems fail. Any type of failure on this location due to the close proximity to the Neversink would have immediate effects and in such a case, the proposed stormwater management practices, which may include manmade wetlands and vegetation, will not have the same type of success that these same practices would have if administered at locations 2000 feet from the river in which manmade back-up systems **and natural** wetlands and vegetation could operate to filter such a pollutant discharge.

The location of this development will forever be flawed due to the close proximity to the Neversink. In addition, the DEIS has failed to adequately address the probability for failures in the system and therefore, the DEIS and the SWPPP contained within, must be amended to provide a more detailed analysis regarding the unique stormwater management issues concerning the proposed development.

3. Hydrologic and Geomorphic Study[1]

Throughout the DEIS, claims are made that detailed analysis of the Neversink River is unnecessary due to the planned stormwater management. For instance, the DEIS fails to include a complete hydrologic and geomorphic study. In response to TGF's comment letter dated December 18, 2003, the DEIS states, "Stormwater runoff (both quality and quantity) will be treated and controlled before discharging to the Neversink River or adjacent existing or proposed wetlands. As such, detailed analysis of the Neversink River is not required" [Appendix A, A-3, Pg. 6]. The stormwater management practices suggested by the DEIS do not thoroughly account for certain unique aspects of the proposed site nor does the DEIS provide adequate data for consequences of foreseeable failures in the stormwater management system. The above-stated limits to mitigation are reason enough for a **complete hydrologic and geomorphic study of the Neversink River and its watershed.** This type of study will establish the correct mitigation methods that will need to be implemented to protect the sensitive ecosystem of the Neversink, which shall include, but may not be limited to, more extensive storm water management practices.

B. Intermittent and Groundwater Flows

Another of TGF's major concerns is the failure of the DEIS to adequately realize and address the importance of intermittent and ephemeral streams and water flows that exist during snowmelt or after large rainfalls.

> "The numerous streams in the project area are intermittent and do not provide fisheries habitat." [4.4.1]

Extremely important for river and fish survival, such streams form a high proportion of the channel system and thus, contribute a large amount of nutrients from primary production and litterfall to downstream reaches.[1] Both perennial and seasonal streams and wetlands provide valuable habitat.[2] They offer habitat for critical stages in a fish's lifecycle such as spawning and the maturing of fingerlings. Headwater streams are vital for maintaining many of America's fish species, including trout.[3]

The DEIS is exposed with regard to the study of the trout habitat by failing to adequately demonstrate any sophisticated methods of analysis of the water sources on the proposed site for their value to the trout of the Neversink. One wonders whether the only method of study was walking up to water sources on the site to see whether fish were present.

> "Ponds 1 and 4 and Basin 2 on Gildick were not observed to support fisheries" [4.4.1].

Wetlands and ponds and the intermittent and ephemeral streams that act as connectors for these bodies of water and the Neversink, provide critical habitat for a healthy ecosystem and trout

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[1] Similar in scope and detail to the Trout Unlimited study published in December 2002 for the nearby Beaverkill and Willowemoc Rivers entitled "Beaverkill-Willowemoc Watershed Initiative." We can provide a copy if necessary.

population, even if devoid of fish. In a 2001 letter to the Army Corps of Engineers, 43 of the nation's senior aquatic scientists detailed the many ways seemingly inconsequential headwater streams "provide valuable ecological goods and services" and urged that they be protected. Dr. Judy Meyer, a professor of stream ecology at the University of Georgia, writes, "Small streams, even if they are fishless, are important producers of insects that drift to the downstream fish assemblage. Headwater streams are the first aquatic systems that see the input from the terrestrial environment."[4] Similarly, Dr. Louis Kaplan of the Stroud Water Research Center in Avondale, Pennsylvania, which assesses impacts to ecosystems from water-chemistry changes upstream, writes, "First-order streams have their own ecology with their own unique insects and fish that live nowhere else. They are some of the most diverse and productive environments on earth because, in addition to their own production, they are heavily subsidized by the forests they flow out of. They also provide food material for organisms downstream." Ben Stout of Wheeling (West Virginia) Jesuit University has found headwater streams in mountaintop-removal country to be even more biologically important than the streams they feed: "The biological community begins in watershed as small as six acres. An intermittent stream is the link between a forest and a river." Finally, in researching the headwaters of the Rogue River, the Oregon Department of Fish and Wildlife found that the trout of that river spawn primarily in intermittent streams.

At least seventeen waterways were noted in the DEIS. However, the DEIS states that only three intermittent streams will be impacted by the development totaling 1.53 acres [5.3.2]. The analysis used to reach such conclusions relies on limited information concerning the presence of intermittent and ephemeral streams. First of all, as stated earlier, the stormwater management practices mentioned in the DEIS do not adequately address all pollutant concerns and therefore, clearly the estimated impacted acreage is unreasonably low. But just as important is the lack of importance place upon intermittent and ephemeral streams and water flows as important trout habitat. Such an omission may have also caused the DEIS to fail to thoroughly map such water flows, including groundwater flows that connect such surface waters to springs which eventually flow into other waterbodies including the Neversink.

Headwater streams that lose much of their base flow to groundwater, or even all of their flow at specific locations, function not as boundaries but rather as significant sources of additional recharge to groundwater and the springs at lower levels. To assess the impacts of these types of interconnections between surface water and springs, and to monitor such impacts, the EIS should be required to locate and define subsurface flow pathways between the contributing headwater streams, unmapped drainage with wetlands, and individual major springs that flow into the Neversink. This is relevant because while many of the intermittent and ephemeral streams were found to be located above the development, major springs usually discharge at lower levels and possibly will cross under the developed lands into the Neversink.

The investigation of groundwater resources *should* include groundwater flow models with sufficient resolution to assess the impacts of groundwater withdrawals (and additions) on streams, wetlands and vernal pools/ponds (both on the site and throughout the immediate area).

The description of groundwater resources should also include an assessment of the interactions (on both an inter and intra-annual basis) between groundwater resources and surface water resources (including seasonal habitats such as vernal pools/ponds) with respect to the

influence of these interactions on water dependant (and associated) species, natural communities and ecological systems. There must also be a thorough assessment of the timing, magnitude and duration of groundwater depth changes on inter- and intra annual basis.

Description of static conditions, such as average depth to groundwater, will not be sufficient to determine the impacts of development biodiversity.

II. VARIOUS ISSUES

Another concern we have in this area is where the water comes from that will be required to operate the casino, hotel and associated buildings and how, where and in what condition waste water will be returned to the watershed. Water supply and usage at the site could have a severe effect on the Neversink fishery because it could reduce water levels that are already minimal at certain times of the year. Wastewater treatment is important from our perspective because it, like lower water levels, can affect water temperatures in the river. These issues must be fully addressed in the EIS.

The Neversink watershed is also unique because its marshes and meadows harbor over 132 species of birds (including osprey and bald eagle), 17 reptile species and 14 amphibian species as well as the greatest diversity of freshwater mussels in the Delaware River basin. Of particular interest are the federally endangered dwarf wedge mussel and the state-threatened brook floater. In addition to several trout species, including wild trout, there are more than 40 other fish species in the Neversink, including migratory fish such as American shad, blueback herring, alewife, striped bass and American eel. The Neversink's rich and varied collections of insect species, particularly dragonflies, are an excellent indicator of a healthy habitat. The river and wetlands which will be destroyed by this development took nature eons to build and cannot be effectively substituted in a few short months by the suggestions listed throughout Section 5 of the DEIS for replacement of vegetation and wetland loss which can only occur gradually over an extended period of time. The impact of the proposed development on each of these species must be covered in adequate scientific detail in the EIS.

Another foreseeable problem caused by the subject project is the incredible size of the structure itself and the amount of traffic that will crowd Route 17/Interstate 86 to bring gamblers to the casino and consequently will negatively impact viewshed and aesthetic values. For the members of TGF and other anglers, there is no reasonable aesthetic comparison between a beautiful quiet Catskill trout stream and the noise, congestion and tawdriness of a casino. Guides that make their living by bringing anglers to this pristine natural habitat will lose customers who will seek to enjoy the peacefulness and beauty of flyfishing on trout streams elsewhere.

Also, the cumulative impact study of section 6 in the DEIS fails because of the lack of any type of studies regarding the cumulative impacts from five casinos. Governor Pataki himself, in a letter, dated February 25, 2005, to Secretary of Interior, Gale Norton, in supporting the land claim settlements described above, acknowledged the need for a five casino cumulative impact upon review of any one casino, given the fact that all five are part of a single plan by which the Governor intends to establish Las Vegas style class III gambling in Sullivan County

and the Catskill region. "In assessing the environmental impacts relating to the project, there may be issues arising from the cumulative impacts of locating five casinos in the Catskill region. Therefore I urge the Bureau of Indian Affairs (as lead agency under the National Environmental Policy Act) to ensure that appropriate consideration is given to the cumulative impacts that five casinos in the Catskill region may have on the community's local resources and that an analysis of any such impacts be included within the environmental impact statements prepared for each of the casino projects."

Finally, due to the numerous foreseeable negative impacts mentioned above, the continued preservation of one of the most unique cultural and recreational resources in Sullivan County is in serious jeopardy. The trout streams of the Catskills, and the Neversink River specifically, are world renown as the birthplace of American flyfishing and attract thousands of fishermen each year because of the historical and aesthetic values of the region and the quality of the trout streams as fisheries. Any negative impacts to the trout habitat in the Neversink will have far-reaching effects which could devastate fishing, and the many aspects of the local economy related to it, throughout Sullivan County.

CONCLUSION

TGF, by this Comment letter, presents the significant issues that concern our members and that have not been adequately addressed by the DEIS and/or must be thoroughly addressed in the EIS. TGF hereby preserves the right to submit expert reports and opinions which shall include, but not be limited to, comments, information and data that support the contentions stated herein.

TGF will be monitoring this proposed project with great interest and will do whatever is necessary to protect the historical, unique and ecologically sensitive rivers of the Catskills. Please inform us of all future public hearings and opportunities to comment on the project or the approval process. Thank you for your time and consideration.

Sincerely,

John L. Barone
TGF Conservation Committee

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[1] Leslie M. Reid and Robert R. Ziemer, Evaluating The Biological Significance Of Intermittent Streams, USDA Forest Service, Pacific Southwest Research Station;
text available at: *http://www.fs.fed.us/psw/rsl/projects/water/2IntermitStr.htm*

[2] Id.

[3] Judy Meyer, et. al., Where Rivers Are Born: The Scientific Imperative for Defending Small Steams and Wetlands, River Basin Science and Policy Center, 2003; text available at http://outreach.ecology.uga.edu/publications/pdf/scientific_imperative.pdf

[4] Meyer, Stout, Oregon DFW and Kaplan are cited in Ted Williams, Upstream And Out Of Mind: The Feds Abandon Protection For Our Headwater Streams, Fly Rod and Reel; text available at http://www.flyrodreel.com/conservation0603.html

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 2 2005

Mr. John L Barone
Theodore Gordon Flyfishers Inc.
P.O. Box 2345
Grand Central Station
New York, NY 10163-2345

Dear Mr. Barone:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) You claim that the Stockbridge-Munsee Casino project will have devastating impact on the ecosystem of the Neversink River. Trout require cold, oxygenated, high quality water. Your first concern is with Stormwater management.

Please read the DEIS where you will find the stormwater control plan to be very extensive and complete. Creating impervious surfaces next to a cold water stream can have serious impacts on the river system. That is why our environmental staff worked extensively with the contractors to assure that stormwater impacts would be minimal. There are both catch basins and a wetland designed to remove most sediments and contaminants before they can reach the river. The slow water introduction to the river from the wetland also allows temperature acclimation. The automobile salvage yard and surface mining operation previously using the site had much less control. There were potential river impacts from both oil spills and mine tailings. The extensive remediation we required has now removed these sources of impact.

(2) You believe that stormwater mitigation is inadequate.

The generalized information you list does not represent the system designed for this project. You are incorrect in stating that the DEIS does not address location specific concerns. The project site selection included considerations for impact and means of mitigation. The Bureau of Indian Affairs (BIA) imposed many requirements upon the Tribe, casino planners and DEIS contractor due to the importance of this issue. Due to these imposed requirements, we are very confident in the adequacy of the extensive stormwater controls and mitigations.

(3) You believe that a complete hydrologic and geomorphic study should be done.

The geology and hydrology of the site was considered by our BIA scientists when we imposed complete stormwater control requirements on the project.

(4) You claim that the importance of intermittent streams was not adequately considered.

Intermittent streams have been fully taken into account. Minimizing impacts on such streams was an important criterion in site selection. Please remember that the former use of the property was an automobile salvage yard and surface mine.

(5) You are concerned about reducing water levels in the Neversink River by water use by the casino.

Your information is not accurate. Hydrologists are more concerned about increases of flows to the Neversink River from the project due to additional flows from the wastewater treatment plant. They have determined that minimum fisheries flows will not be impacted. There is also the probability that regional growth will create additional impervious surfaces that may further raise river water levels. The overall impact to the watershed basin will be minimal due to natural hydrogeologic processes. Whenever water is withdrawn from an aquifer it creates a water well depression that causes water to flow to the site through the aquifer. Rivers are hydraulically connected to the aquifers so that any excess river flow acts to replenish the aquifer. Since water wells can remove water faster than surface water can replenish the aquifer, the river will be higher in the vicinity of the wastewater treatment plant and the aquifer water will be lower in the vicinity of the well, but the overall watershed will not be impacted. The balance of water in the watershed is not significantly affected due to minimal evaporative and consumptive losses.

(6) You request the cumulative impact of five casinos be analyzed.

As already noted in the DEIS, the Final Environmental Impact Statement (FEIS) will include additional information. The regulation 40 Code of Federal Regulations (CFR) 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. As stated in the DEIS, information is currently unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. The exact location in relation to other water users is especially important in considering potential aquifer impacts. We can only provide a limited speculative narrative based on assuming that all the proposed casinos will have similar drawing power and will be located within Sullivan County close to Route 17. Since the specific size and location of two of the proposed casinos are unknown, it would be irresponsible to attempt to project full quantitative impacts that would be subject to considerable error. The additional narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

(7) You believe that the regional trout streams are in jeopardy from the project.

Tribes take great care in assuring that a good neighbor policy is in place for their casinos. They work to minimize impacts in every way possible. After a tribe submits their proposal to the BIA, the BIA environmental scientists work with the tribes to make sure every potential environmental impact has been thoroughly considered and adequately mitigated. If the project is approved, we acknowledge there will be induced regional growth which some people applaud, but others deplore. Additional traffic will be added to regional roads, which also requires mitigation. These types of issues are under local control and the Tribe is making suitable payments to mitigate such impacts. For the issues under local control, we assure that mitigation arrangements are in place, but the local authorities provide the mitigation. The areas under direct BIA control concern the casino trust property. Trust property is also subject to environmental controls issued by the Environmental Protection Agency (EPA). Controls and mitigations are in place for every project aspect to assure that the project does not have the impacts you fear. While regional growth may have some impacts in changing community character, as well as adding impervious surfaces, the appropriate regulatory authorities can limit most natural resource impacts.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

EIS No. 050047, Draft EIS, BIA, NY, Stockbridge-Munsee Casino Project, Proposes to Take Land into Trust for Gaming Purposes to Address the Tribe's Economic Development, Bands of Mohican Indians of Wisconsin (the Tribe), NPDES Permit and U.S. Army COE Section 404 Permit, Town of Thompson, Sullivan County, NY. Comment Period Ends: March 28, 2005. Contact: Kurt Chandler (615) 467-1677.

03-28-05P02:35 RCVD

Re:Comments on Stockbridge Munsee Casino Draft EIS

To:

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler, phone: (615) 467 - 1677

Dear Sir,

I am a resident, racehorse breeder/owner and environmentalist living in Orange County NY. After reviewing the EIS for the proposed Stockbridge-Munsee Casino Project, I found it to be significantly inadequate.

The Traffic Study does not seem to indicate or include the traffic to/ through route 17 corridor as well as cummulative in Orange County and the cummulative impacts on the air quality it will have in Orange Countys air.I beleive that the NYS Gambling task force report to the Governor point out that the possible burdens to neighboring community's. This I feel should be addressed.

I do not see included in the EIS the proposed 5 casino plan, which was breifly touched upon in 6.0 indicating that the other 2 casinos are too remote, I do not feel is an adaquate response. They should be included..in the EIS

I believe this facility will have a large impact to traffic patterns, along with a possibility to draw of thousands of vehicles, especially to the Route 17 corridor. This question has not been addressed. I am also and I can not find were it has been included in the traffic study or answered. How can a traffic study be considered complete?

I did not find were the cumulative impact of slow moving vehicles on traffic patterns. This information I can not find in the DEIS.It is indicated in one of the studys, that there would be something to the effect of an increase of 90,000 bus trips per year. How many Campers? service trucks?. . . et would be added along with the effect/impact from all this slow moving traffic. The loss of service from slow moving vehicles review should include Route 17 This information I can not find as well as other roads beside rte 17 for this application. Would they be able to handle and what would the effects be with the steep grades, inclement weather with this amount of slow moving traffic? What would the effects be as far as accident rate? I think this needs to be reviewed and included in the DEIS, along with current slow moving traffic including farm-horse trucks and trailers to Monticello Raceway, recreational- such as boat hauling et, and the cumulative projections of increase traffic from all the casinos and other development.

As a resident of Orange County, Route 17 has increased in traffic to a great extent in the last 3 years. The housing market and growth rate of the Orange County I feel also indicates the increase to this problem. I do not believe Route 17 can possibly handle the projected traffic without mitigation measures taking place. I question that secondary roads will also be greatly impacted in Orange County. This information I can not find in the EIS.
The DEIS address''s Sullivan County, I can not find were impacts are addressed for Orange County. I feel a full study of all traffic needs to be

addressed with effects - impacts on Orange County has to be included in the EIS

I do not find were the current and recently installed bridges on route 17 would allow for added lane expansions. I feel mitigation measures for the traffic needs to included. What measures would be possible with added lane on 17 must be installed before any casinos are approved. Its my understanding thatif lanes are added to 17 it will be approx. 8 years.

Due to the increase in traffic, I also feel that the increase of services, including but not limiting to emergency medivac, fire, is going to pick up the expense on this? It seems as an Orange County resident, many quality of life issues are at stake of being lost including health issues, and also the possibility of paying for increased services due to this current proposed application.. . What mitigation measures have been made for any of this?You indicate repeatedly about the 15 million to address problems to Sullivan County. . That does not address problems in Orange County emergency services.

The Environmental Impact Statement (of all proposed casinos) to air quality and health. I did not see the impact the cumulative effects of traffic will have on the Acid Rain problems or the Ozone The EIS seems to fail in mentioning Orange County is a Non Attainment area for the National Ambient Air Quality Standards for ozone and recently, I believe classified as a severe non attainment other air standards as well. . . . . 6 NYCRR part 240 . . *1997 executive Order -Protection of Children from Environmental Health Risks and Safety Risks. . that before any federal approval is given on a project that will effect a non attainment area even if the project is outside the area, a full review of that or cumulative impacts are required. I can not find were this is or has been doneThe DEis does not indicate how funded or approved by the Federal Government must conform to the SIP for improvements 'should' help improve air quality along the 17 corridor. This should be part of a cumulative emission study including dates for Route 17 improvements to back this statement up for our non attainment area.

I have been told it will be at least 8 years when and if Route 17 is widened. What will be done if the facility's are built before any improvments?

A State Implementation Plan (SIP) is developed by the state and approved by the EPA. I believe SIP's are required to show documentation of how the effected area will reduce air pollution levels, how emissions will decrease over a set period of time, and attain the ozone standard is this compliant with Clean air Act Section 176 (c) and 58 FR 63214 also the National Memo of Understanding US DOT and the EPA?

Where are the impacts this facility will have on Monticello raceway and the racing industry included? Didn't the NY State Task force on Gambling report to the Governor suggest/find that the impacts could be severe? what are the cummulative impacts? And/or why have they not been included? This facility could have a large impact on Monticello Raceway as well as the Standardbred breeding farms, what mitigation measures have been included? The Racetrack has been here for a long period of time. Many people rely on this business. This currently is the only form of gambling besides lottery. This should be included and every effort should be made so there is no negative effect suffered by the horsemen as a result from the proposed casino.Chances are you are going to be putting many trainers, drivers and breeders out of business.

What will the discharges. . including *cummulative* impacts from other propoasals and discharges be . . . temperature, dissolved oxygen. . et . . , what effect will this have on the Neversink River and wildlife, with particular regard to Neversink trout? Im sure you realize what an important resource the Neversink River is. Have the TMDL been established in regard to all cummulative impacts including but not limiting the 5 propsed casinos?

The National Indian Gaming Commission Report Recommendations (June 18, 1999) 3-14, 3-13, 3-19,3-11, 3-21,4-4. I feel should be included in the DEIS. I have hurd citizens comments at the public hearing about issues of

children being influenced and the many problems that seem to appear and surround gambling establishments. I think it would be a great benefit to both the Casino and the residents to address concerns if these recommendations in the NIGC are included in the DEIS.

Sincerely,

Susan Cleaver
109 Coleman Road
Goshen NY 10924
845-294-7846

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Managcment

APR 2 2 2005

Ms. Susan Cleaver
109 Coleman Road
Goshen, NY 10924

Dear Ms. Cleaver:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) You note that additional narrative is needed for cumulative impacts on Orange County traffic and air quality and other burdens to neighboring communities.

This process must comply with both the National Environmental Policy Act (NEPA) and Indian Gaming Regulatory Act (IGRA), as well as respecting the constitutional rights of the Tribe. Local mitigation agreements and State compacts are considered to be the IGRA sanctioned means of mitigation. The only other source of potential impacts not covered by these mitigation agreements is considered to be regional growth related, and such potential impacts have the inherent funding source of an increased tax base for inherent mitigation. New residents that move to an area pay taxes for the services they receive, just like everyone else. Due to the inherent mitigation, these issues are considered to have no potential to have a significantly adverse effect. While narrative is provided for potential impacts beyond IGRA mitigation areas, such as Orange County, detailed analysis is not considered appropriate due to the inherent mitigation that is under local and not Tribal control. Historically, regional growth has always been self mitigated at the local level through an increasing tax base as a routine function of local government. Neither tribes, nor the Bureau of Indian Affairs (BIA) can control how local governments deal with increased financial resources or increased responsibility.

(2) The five casino cumulative impact analysis is needed.

The Final Environmental Impact Statement (FEIS) for the proposed Stockbridge-Munsee Casino will include additional information on the cumulative impacts of the potential five casinos. However, at this point in time we only have applications from three tribes for casinos in Sullivan County. When a tribe submits a casino fee-to-trust application they include a preliminary Environmental Assessment (EA) or preliminary Environmental Impact Statement (EIS). Our staff then works with the tribe and the contractor to develop an acceptable NEPA document. The information that is required includes a marketing study that projects the number of casino visitors based on the size and location of the casino. After the marketing study is developed the traffic study can be developed, based

on the projected number and origin of casino visitors. Potential air quality impacts usually depend on the traffic study.

The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that the proposed casinos will have similar drawing power and will be located within a short distance of Route 17. The original three casino State approval allowed for casinos in both Sullivan and Ulster Counties. A casino in Ulster County would have a much different impact. Without hard data it would be irresponsible to attempt to project full quantitative impacts, and the estimated projections that we plan to include in the FEIS must be considered subject to considerable error. The narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

While the potential impacts of five casinos are not known at this time, controls are built into the process to provide mitigation for such unknown impacts. We must consider potential impacts, but we also must consider whether the project provides the means of mitigating potential impacts. By building controls into the process, even such unknowns can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues, such as crime, emergency services and social issues. Each tribe also has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any State controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

(3) You believe that the traffic impact analysis concerning Route 17 is not adequate.

The DEIS provides detailed analysis for all impacts required to meet IGRA mitigation requirements for the casino. See Response # 2 concerning the five casino cumulative impact analysis. Route 17 is considered a State controlled road, so any upgrade for Route 17 would have to be provided by the State of New York. If the State uses the Tribal mitigation funds as intended by IGRA, Route 17 traffic will be fully mitigated. It is up to the State to determine whether that would result in additional traffic lanes along Route 17, a light rail system or other appropriate means as determined by the State. If the State performs the needed mitigation as IGRA intended, air quality and traffic problems would be greatly reduced.

(4) The cumulative impacts of slow moving vehicles, such as buses, campers, service trucks, farm-horse trucks and trailers to Monticello Raceway is not adequate.

Projected traffic flows include all vehicles that use the roads. The casinos are not projected to add a significant number of vehicles that travel below the average flow of traffic.

(5) Orange County traffic is bad due to the current growth rate. Additional narrative is needed for impacts on Orange County secondary roads.

Current Orange County traffic is not a result of the casino, and casino patrons are not projected to significantly contribute to local Orange County traffic. Only Route 17 is projected to have a potentially significant impact and that is mitigated under the State compact. See response #1 concerning regional growth issues.

(6) Newly added bridges on Route 17 may not allow for an additional traffic lane. Traffic mitigation measures must be installed before casino projects are approved.

This process must comply with IGRA, which provides mitigation for State controlled issues through the State compact, as an integral part of the approval process. It is up to the State to determine where and how it will proceed with mitigations for potential additional traffic, including building new bridges.

(7) Due to the increase in traffic there will be increase in impact on service vehicles such as emergency medivac and fire vehicles. Who is going to pay for these impacts?

If the State uses the mitigation funds as intended by IGRA, the improvements in traffic flows should allow emergency vehicles to operate more efficiently. Regional growth issues are paid for by local governments using the increased tax revenues they generate.

(8) Many quality of life issues are at stake, including health issues. What mitigations are in place for this?

Health issues are not considered a potential casino impact. The project will not impact the regional Clean Air Act attainment status. It is acknowledged that community character may change with regional growth. This is a factor that will be considered in the Federal decision making process.

(9) Acid rain or ozone cumulative impacts from traffic are not included in the DEIS.

Acid rain and cumulative ozone impacts are not considered to be a potential project impact. Air quality should improve with improving traffic flows if the State uses the mitigation funds as intended by IGRA.

(10) It may take eight years to widen Route 17. What will be done if the facilities are built before road improvements?

It is up to the State to determine when, where and how they will use the Tribal mitigation funds. The State has the option of using bonds or other means of fund raising to immediately start work on the currently congested areas if the project is approved.

(11) The State Implementation Plan under the Clean Air Act must show how the non-attainment areas will reduce air pollution levels to attain the ozone standard over a set period of time. Is this project compliant with Clean Air Act Section 176(c) and 58 CFR 63214 and the National Memo of Understanding between USDOT and EPA?

If the State uses the Tribal mitigation funds as intended by IGRA air quality should improve.

(12) The DEIS does not include the impacts on Monticello Raceway and the racing industry. Cumulative impacts on these operations are needed.

A potential casino at Monticello Raceway is thoroughly considered under cumulative impacts. Since they share the same customer base, there is a potential loss of racing/gambling income if a casino is not built at the Raceway. Additional narrative will be added to include economic impacts on Monticello Raceway and local horse racing, should a casino not be developed there.

(13) What are the project discharges and cumulative discharges into the Neversink River and the impacts on dissolved oxygen and temperature etc and the impacts on trout and other wildlife?

Stormwater from the site will discharge into wetlands near the river, and the slow introduction of waters to the River from the wetlands will allow temperature acclimation. Wastewater treatment will be contracted to the Thompson Kiamesha Wastewater Treatment Plant. They use tertiary treatment for the highest level of treatment before discharge. The discharge is well within their permit limits so impacts should not be significant. Trout and other wildlife should not be impacted.

(14) The gambling impacts on children should be addressed in the DEIS.

It is anticipated that the State compact will ban underage gambling as is common for other Tribal-State compacts. The local agreement provides 15 million dollars annually that is intended to mitigate local impacts. Part of that funding is intended to assist social programs as necessary, for any issue that may be considered to be casino related.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Via Fax (615)467-2939
Kurt Chandler
Bureau of Indian Affairs

Mr. Chandler:

As a concerned citizen, environmentalist and frequent user of the Neversink Gorge Park, I respectfully submit that any belief that the construction of the proposed casino on the banks of the Neversink River in Bridgeville will not have a negative environmental impact on the river is not sensitive to the delicate balance of nature and what the Governor envisioned when he purchased this land. This pristine state land, designated by New York State's Department of Environmental Conservation as a "Unique Area," consists of 6,596 acres immediately down stream of the proposed casino site.

I have recorded water temperature and water cubic feet per second (cfs) flow rates for the Neversink River almost every day for the past few years, so my data can be used to determine a benchmark for the health of this historic river. The Neversink River in the Gorge Park Uniqe Area supports a sizable population of wild trout that must have cold clear water to survive. The fishery barely survives the hot weather months of the summer as it is. It simply cannot absorb any negative impacts that affect its temperature, water levels or clarity.

Water run off from hundreds of thousands of square feet of parking lots and rooftops will have an immediate impact on the cfs rate of the river below the proposed site. Because of the hot surfaces this run-off water comes in contact with, it will be much warmer than the current natural runoff that cools as it filters down through the aquifer. Higher cfs rates for prolonged periods of time will also increase the likelihood for bank erosion which would be devastating to the aquatic life and the fish in the river. Tars and oils typically found in parking lots and roof tops will seep into nearby wetlands, changing the complexion of the wetlands from native vegetation to insect life which will impact the river. This casino will ruin the delicate balance of this ecosystem. The very reason that people come to the Catskills - natural beauty - will be forever and irreversably harmed if the casino is built on the Neversink.

I am deeply concerned about the particular location of this casino and its impacts on one of the most historical rivers in our country's heritage. I have traced back references of this river to before the turn of the 19th century, the same lineage as the Indians, it took them 100 years to redeem our impact, lets not make the same mistake again and maybe take another 100 years to redeem our river. Not on the Neversink, please.

Sincerely,

Richard R. Machin
9 Ward Place
Ossining, NY 10562

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 2 2005

Mr. Richard R. Machin
9 Ward Place
Ossining, NY 10562

Dear Mr. Machin:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have expressed concerns about thermal, water level and clarity impacts to the Neversink River. The trout are temperature sensitive and barely survive summer temperatures.

The casino site was formerly used for surface mining and an automobile salvage yard, adjacent to the Neversink River. The natural habitat was extremely damaged from these operations. The Bureau of Indian Affairs required extensive remediation for this property to make it suitable to take into trust. Studies show that casino visitors do not tend to visit natural areas. They limit their activities to the casinos as well as general tourism such as shopping and dining. Regulatory authorities are in place to protect such areas and control impacts to these natural areas due to regional growth.

Creating impervious surfaces next to a cold water stream can have serious impacts on the river system. When we first received the Tribal plans we recognized the serious potential for impact and worked hard to make sure such impacts would not happen. That is why our environmental staff worked extensively with the contractors to ensure that stormwater impacts would be minimal. There are both catch basins and a wetland designed to remove most sediments and contaminants before they can reach the river. The slow water introduction to the river from the wetland also allows temperature acclimation. The automobile salvage yard and surface mining operation previously using the site had much less control. There were potential river impacts from both oil spills and mine tailings. The extensive remediation we required has now removed these sources of impact. If the trout survived the impacts from the surface mine and salvage yard they should do well with the casino.

Trust property is also subject to environmental controls issued by the Environmental Protection Agency. Controls and mitigations are in place for every project aspect to assure that the project does not have the impacts you fear. While regional growth may have some impacts in changing community character, as well as adding impervious surfaces, the appropriate regulatory authorities can limit most natural resource impacts.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

2005
By

291 Benton Hollow Rd
Wood Bourne NY 12788
March 16 2005

Mr. Franklin Keel
BIA Eastern Office
711 Stewarts Ferry Pike
Nashville TN 37214

Dear Mr. Keel, RE: DEIS of Stock Bridge Munsee Bridgeville, NY CASINO Project in Sullivan County, NY —

Please, would you extend the deadline for public comments to MAY 12TH ?

I own a re-sale Boutique on Broadway in Monticello.

I am very concerned as a business owner, + as a homeowner, with the potential negative impacts of the proposed casinos, and a study MUST be done of the impacts of all 5 proposed casinos, which in

my opinion will devastate
This County in every way.

At any rate, we, at
The very least, need
to let The experts
review The DEIS ~ and
They need more time —
as do our citizens.

thank you for your
kind consideration. I feel
it's only asking what's fair,
considering The VAST &
heavy impacts from even This
One CASINO.

Yours very truly,
Millie Travis

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Ms. Millie Traviss
291 Benton Hollow Road
Woodbourne, NY 12788

APR 0 1 2005

Dear Ms. Traviss:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have requested an extension of the public comment period for this project. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

Your express concern about the impact of five casinos. The Bureau of Indian Affairs has only received applications from three tribes, so the potential cumulative impacts from five casinos are still unknown. The size, location and drawing power of the casino make a large difference in the potential impact. Such unknown information prevents an accurate analysis of the potential impacts of five casinos. The Final Environmental Impact Statement will present as much information as possible, but it may not include a complete prediction of impacts from five casinos due to the unknown information. The Indian Gaming Regulatory Act (IGRA) built controls into the process to anticipate such potential impacts due to such unknown information. By building controls into the process, even such unknowns can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues, such as local traffic and social issues. Each tribe also has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Orange County Department of Planning

Fax

To: **Mr. Franklin Keel, Regional Director Bureau of Indian Affairs**	From: **David Church, OC Commissioner of Planning**
Fax: (615) 467-2939	Pages: 4
Phone: (615) 467-1677	Date: 03/28/2005
Re: Stockbridge Munsee Casino DEIS	CC:

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

COUNTY OF ORANGE **DEPARTMENT OF PLANNING**

EDWARD A. DIANA
COUNTY EXECUTIVE

124 MAIN STREET
GOSHEN, NEW YORK 10924-2124
TEL: (845)291-2318 FAX: (845)291-2533

DAVID E. CHURCH
COMMISSIONER

04-01-05A11:38 RCVD

March 28, 2005

Mr. Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Re: Draft Environmental Impact Statement (FEIS) for Stockbridge-Munsee Casino

Dear Mr. Keel:

We are in receipt of the DEIS for the proposed Mohawk Mountain Casino and Resort dated January 28, 2005 and have reviewed it pursuant to the National Environmental Protection Act (NEPA) and the New York State Environmental Quality Review Act (SEQRA) as an interested neighboring county with concerns over the impact to the regional transportation system and air quality in the Mid-Hudson Region. Our review finds the DEIS significantly inadequate in its traffic and air quality analyses, compelling us to reiterate previous concerns and question the methodology and assumptions used to estimate the cumulative and growth inducing impacts of traffic generated by proposed casinos in Sullivan County.

Traffic Impact

Overall, the DEIS for the Stockbridge-Munsee Casino is deficient in determining the cumulative traffic impact of Sullivan casinos on the regional highway network for many reasons. One of the most significant flaws in the traffic study for the Stockbridge-Munsee Casino is that a full regional traffic impact analysis attributable to proposed casinos in Sullivan County is deferred to NYSDOT. As stated on page 2 of the traffic impact study, "A full regional study is not necessary as it would duplicate NYSDOT efforts. NYSDOT is already looking into the regional improvements along State Route 17 as part of their *Route 17(Future Interstate 86) Interchange Spacing and Geometrics Study, Delaware, Sullivan and Orange Counties*". As participants in the Interchange Spacing and Geometrics Study, we know first hand that traffic from proposed casinos was not factored into the traffic forecasts for the conversion of Route 17 to I86. Therefore, the cumulative traffic impact of proposed casinos in Sullivan was not considered when improvements to Route 17 in both Sullivan and Orange Counties were being designed by NYSDOT as part of the conversion of Route 17 to interstate standards.

Secondly, the traffic analysis for the Stockbridge-Munsee Casino uses traffic volumes from the year 2001 as the basis of determining current traffic conditions and forecasting future traffic impacts for proposed casinos in Sullivan County. In the past four years since the initial traffic counts for the study were taken, traffic volumes and travel patterns have changed dramatically in Sullivan and Orange Counties. As such, the year 2001 traffic volumes are substantially lower

than current values and are outdated. As a consequence, the impact of casino-based traffic on the regional highway network is significantly underestimated.

Another significant problem with the DEIS for the Stockbridge Munsee Casino is that Volume II of the Traffic Study by Rizzo Associates was omitted from the documentation in the DEIS, preventing scrutiny of the methodology, assumptions and data utilized to determine the traffic impact to Orange County. Therefore, it is impossible to determine whether the findings and conclusions arrived at in the DEIS concerning traffic impacts are valid.

Lastly, and most importantly, the DEIS for the Stockbridge-Munsee Casino fails to assess the cumulative impact and growth inducing impacts attributable to the five proposed casinos proposed in Sullivan on the regional highway facilities.

Cumulative Impact on Regional Air Quality

Orange County (OC) is facing new federal air quality mandates that will have a direct impact on transportation planning and use of State and Federal funds. The EPA recently ruled OC to be in moderate non-attainment for the new 8-hour Ozone Standard. The EPA has also designated OC to be in non-attainment for the new Particulate Matter 2.5 standard. The development of transportation plans and the use of Federal and State funds are tied to air quality conformity analysis. Casino traffic to and from Sullivan County will change traffic and air quality conditions in OC, necessitating a change in transportation planning priorities and how our limited funds can be used. Furthermore, it is imperative that a plan be implemented detailing how NYSDOT Regions 8 and 9, as well as the Federal Highway Administration will collaborate to mitigate casino-related traffic impacts on physical infrastructure, services, environmental quality and the equitable distribution of State and Federal funds to address these impacts.

Vehicle emissions analyses are dependent upon many assumptions and factors regarding emission rates, vehicle mixes, prevailing weather conditions, traffic volumes and traffic distribution, as well as vehicle miles traveled and vehicle speeds. While a mesoscale air quality analysis was conducted as part of the DEIS for the Stockbridge Munsee Casino, none of the information used in the analysis is documented to substantiate the results arrived at in the DEIS concerning the impact to air quality in OC and the region. Therefore, as with the traffic analysis, it is impossible to determine whether the findings and conclusions arrived at in the DEIS concerning air quality impacts are valid.

Emergency Services

State Route 17, the primary transportation gateway to and from proposed casinos, is covered by numerous EMS agencies within Orange County, notably Mobile Life and Regional EMS in Woodbury, Blooming Grove, Kiryas Joel, Monroe, Chester, Goshen, and Town of Wallkill. While complete statistics on emergency service calls and anticipated needs are not readily available, interviews with these agencies has consistently confirmed a growing concern that traffic congestion will impact the demand for service provision as well as the effectiveness of response. Increased traffic means more accidents, which means an increase in the number of EMS calls, which will have to be handled by both EMS first response and transporting agencies. As the majority of EMS agencies rely on volunteers and already have a shortage of personnel, especially during day time hours, service demand and capacity is and will be a problem. The DEIS fails to address this issue, outside of service provision in immediate, short-range distance of the casino site.

Congestion along the Route 17 corridor and other feeder roads already can cause significant delay in response. For example, on weekends, the eastbound travel lanes of Route 17 are often congested with traffic bumper to bumper from Harriman west into Sullivan County. As a consequence, traffic from Route 17 spills onto secondary corridors, notably Route 17M, causing similar congestion and backups there. The DEIS fails to address the consequences of projected, increased traffic and congestion on such service demands and response times. At a minimum, the DEIS should recognize and define these impacts, and outline mitigation measures to help improve, manage or coordinate emergency service provision at critical times when maximum travel demand and congestion exists.

Growth Inducing Impacts

The DEIS for the Stockbridge Munsee Casino inadequately addresses the induced growth (secondary) impacts associated with casinos or with any of the content elements prescribed and clearly itemized in NEPA and SEQRA, 6 NYCRR Part 617.9. ".... all EISs must include ... reasonably related short-term and long-term impacts, cumulative impacts and other association environmental impacts .... (and) any growth-inducing aspects of the proposed action." (6 NYCRR Part 617.9(b)(5)(iii)(a-d)) Other than background traffic growth rates, the DEIS makes no attempt to quantify induced growth impacts and lacks adequate measures to avoid or mitigate potential environmental impacts associated with such growth as intended by NEPA and SEQRA.

Thus, the DEIS for the Stockbridge Munsee Casino fails to assess the cumulative impact and growth inducing impacts attributable to five casinos proposed in Sullivan on the regional highway facilities, regional economies, emergency services and regional air quality. A generic EIS should be required incorporating all casino and hotel proposals in Sullivan County, as well as all economic and secondary residential development induced there from. This should be done to accurately forecast the impact of all casinos on both Orange and Sullivan Counties.

The purpose of these comments is to ensure that all probable impacts attributable to the development of the Stockbridge Munsee Casino, as well as other proposed casinos are considered, avoided and mitigated as intended by both NEPA and SEQRA.

Should there be any questions, please do not hesitate to contact us.

Sincerely,

David E. Church
Commissioner

Cc: Mr. Robert Dennison, PE, NYSDOT Region 8 Director
Mr. Jack Williams, PE, NYSDOT Region 9 Director

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 0 8 2005

Mr. David Church
Orange County Department of Planning
124 Main Street
Goshen, New York 10924

Dear Mr. Church:

Thank you for providing comments on the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We would like to address your comments as follows.

(1) The traffic impact analysis is deficient in determining cumulative traffic impact. Traffic from proposed casinos was not factored in to traffic forecasts for the conversion of Route 17 to I-86.

You are in error. Your statement is in contrast to the letter dated August 27, 2004, to Chief James Ransom of the St. Regis Mohawk from Joseph H. Boardman, then Commissioner of the New York State Department of Transportation (NYSDOT). He states "Including the projected casino traffic, there is sufficient capacity to handle the existing and projected traffic on these highways."

(2) Traffic analysis uses traffic volumes from 2001 as the basis of determining traffic conditions.

You may be aware that such projections are always a moving target and it takes years to get through the environmental review process. All such studies will age during the review process. The Bureau of Indian Affairs (BIA) standard is to accept traffic analyses no more than four years old. This process has been going on since 2001. The study was still new when accepted by the BIA. The cost to a tribe would be prohibitive if we continually required new studies for every change. Growth factors are used to accommodate increases in traffic over time, negating your argument.

(3) Volume 2 of the traffic study was omitted from the DEIS appendices.

The traffic study Volume 2 Appendices will be included in the Final Environmental Impact Statement (FEIS).

(4) The DEIS fails to analyze the cumulative impact and growth inducing impact of five proposed casinos.

As noted in the DEIS, additional narrative will be provided in the FEIS.

(5) Orange County is a non-attainment zone for ozone and particulate matter. Use of State and Federal funds depends on our conformity analysis, requiring that we reprioritize our transportation planning. There is not enough information in the DEIS to assist our planning needs.

The additional information that we will provide in the FEIS may still not be sufficient to meet your needs. We only have applications from three tribes for casinos in Sullivan County. As stated in the DEIS, the information is unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that the proposed casinos will have similar drawing power and will be located within a short distance of Route 17. The original three casino State approval allowed for casinos in both Sullivan and Ulster Counties. A casino in Ulster County would have a much different impact. Without hard data it would be irresponsible to attempt to project full quantitative impacts, and the speculation that will be presented in the FEIS must be considered subject to considerable error.

The Indian Gaming Regulatory Act (IGRA) built controls into the process so that even the unknown impact of five casinos can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues, such as school impacts, crime and other social issues. Under IGRA each tribe also has to make a compact with the state where the casino is located. The intention of a state compact under IGRA is solely for the mitigation of potential impacts under state control. IGRA disallows payments to the state in lieu of taxes. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

(6) Traffic congestion along Route 17 could impede the effectiveness of emergency response vehicles.

Route 17 is considered to be under State control. As mentioned above, the compact between the Tribe and State is intended to mitigate potential impacts under State control. IGRA disallows payments to the State in lieu of taxes. If the State chooses to use the mitigation payments as IGRA intended, the issues under State control such as traffic along Route 17 and associated air quality will be very well funded and fully mitigated. A reduction in congestion would also assist the effectiveness of emergency vehicles. The reported projection of State income resulting from each casino would far exceed any currently projected impact from each casino due to the large percentage of slot machine revenues that the State is reportedly requiring. This mitigation funding will be under State

control and available to mitigate any and all potential impacts. Should another traffic lane be required for Route 17 to accommodate five casinos, the State should have ample funding available to do that work, solely due to the projected State income associated with those five casinos. Under IGRA the compacts between tribes and states are negotiated separately from the NEPA procedures, with the results not known until after NEPA completion. So while the actual percent of the State share from the casinos is not yet known, the reported income projections far exceed projected impacts.

(7) Growth inducing impacts are inadequately addressed per State Environmental Quality Review Act (SEQRA) requirements.

This DEIS is intended to meet BIA National Environmental Policy Act (NEPA) requirements. Induced growth is adequately covered in Section 7 and throughout the document. This DEIS meets BIA NEPA requirements. The effects of increased background traffic growth, pass-by trips, diverted trips, shared trips and induced growth were incorporated into the peak hour traffic volume networks. See Section 6.7 for induced traffic growth. Additional narrative will be provided concerning the potential impact of five casinos, but will not be quantitative due to the unknown information mentioned above.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Robert K. Lampe

ACTING Director, Eastern Region

USGS
science for a changing world

MAR 17 2005
By

Fax Cover

U.S. Department of the Interior
U.S. Geological Survey

The USGS provides the Nation with reliable, impartial information about the Earth to minimize the loss of lives and property from natural disasters, to manage biological, water, mineral, and energy resources, to enhance and protect the quality of life, and to contribute to wise economic and physical development.

Date March 16, 2005

Pages including this cover: 3

Real Estate Services
MAR 18 2005
BY

To: Franklin Keel
Region Director, Office Bureau of Indian Affairs

Telephone #:
Fax #: 615 467-1701

Brenda Johnson
Office of Environmental Affairs Program
U.S. Geological Survey Mail Stop 423
12201 Sunrise Valley DR.
Reston, VA 20192

Telephone #: (703) 648-6832 Fax #: (703) 648-4530

Comments:

The U.S. Geological Survey (USGS) has reviewed the subject draft environmental impact statement (EIS) and offers the following comments.

Attachment:

Thanks

If there are any problems with this fax, please call:
Office of Environmental Affairs Program
(703) 648-6832

United States Department of the Interior

U. S. GEOLOGICAL SURVEY
Reston, VA 20192

In Reply Refer To:
Mail Stop 423

MAR 16 2005

MEMORANDUM

To: Franklin Keel
Regional Director, Bureau of Indian Affairs
Nashville, TN

From: for James F. Devine Katherine Luo
Senior Advisor for Science Applications

Subject: Review of Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino, Town of Thompson, Sullivan County, New York

As requested by the Bureau of Indian Affairs, in their correspondence of February 2, 2005, the U.S. Geological Survey (USGS) has reviewed the subject draft environmental impact statement (EIS) and offers the following comments.

SPECIFIC COMMENTS:

Page 56, Section 4.2.1 Groundwater:

Information about well yields provided in the first and third paragraphs on this page is derived from a 40-year-old USGS report describing the hydrology of Sullivan County. Substantial growth has occurred in many areas of upstate New York and water levels, hence in some cases well yields, have declined. Although no new county-wide study has been conducted, there are other more recent studies in the area that might be relevant. Information about these studies can be obtained by contacting the Information Officer, Peggy Phillips, at 518-285-5602; the information is also located on the internet at http://ny.water.usgs.gov; click on "Publications" then "Search by County" and enter the name of Sullivan County.

Page 56, Section 4.2.2 Surface Water and Drainage, second-to-last sentence:

The sentence states that depths at the station during the last three years range from 4.5 to 13.2 feet deep. In fact what is reported here is the gage height, which is related to river depth but is set to an arbitrary datum that may not (and in the case of this station apparently does not) correlate exactly with the river bed. More information about this site can be found on the Internet at: http://waterdata.usgs.gov/ny/nwis/nwisman/?site_no=01436690&agency_cd=USGS

Page 61, Section 4.2.2 Surface Water and Drainage, first paragraph, second sentence:

It is stated that "Figure 4-6 shows a correlation of water depth and temperature in the river over a weekly period." The purpose of these plots is unclear and it is misleading to imply that there may be a causal relation between river gage height and river temperature. The plots seem to show that temperature and stage are responding to two different variables -- diurnal fluctuations in temperature, and a stage that rises then slowly falls off, likely after a pulse of water input from a precipitation event or reservoir release upstream. As the figure in its present form does not enhance understanding of the hydrologic conditions in the basin, it may be best to remove it from the report.

Thank you for the opportunity to review and comment on this draft EIS.

Copy to: Office of Environmental Policy and Compliance

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 23 2005

Ms. Brenda Johnson and Mr. James F. Devine
Office of Environmental Affairs Program
U.S. Geological Survey Mail Stop 423
12201 Sunrise Valley Drive
Reston, VA 20192

Dear Ms. Johnson and Mr. Devine:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

We agree that groundwater hydrology data is out of date. Your comments will be forwarded to the DEIS Contractor to incorporate the corrections.

We agree that the Neversink River depth is reported incorrectly. Your comments will be forwarded to the DEIS Contractor to incorporate the corrections.

We agree that the reported causal relationship between the Neversink River gage height and temperature is misleading. Your comments will be forwarded to the DEIS Contractor to incorporate the corrections.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Robert K Lampe

ACTING Director, Eastern Region

March 14 '05

Dear Mr. Keel, I am writing to you to request an extension on the deadline (deadline) for Public Comment on the DEIS of the Stockbridge-Munsee Casino project in Bridgeville NY to May 12th. (It's currently March 28)

There is only one copy nearby — it's a huge document and many of us have not had the proper time to study it. As well, the experts — such as NRDC — need the additional time for proper review.

We are faced with the prospect of 5 casinos which will alter this area forever. Please give us this little bit of xtra time. Even this one casino has the potential to destroy the Neversink →

335608

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GURUMAYI®

River. I own a business
that depends on that
vast tourist trade.
Please grant us this
extension. Thank you.
Yours truly, Kathleen Edwards

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
EASTERN REGION
711 STEWARTS FERRY PIKE
NASHVILLE, TENNESSEE 37214

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Environmental

Ms. Kathleen Edwards
172 Lake Street
South Fallsburg, NY 12779

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United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 23 2005

Ms. Kathleen Edwards
172 Lake Street
South Fallsburg, NY 12779

Dear Ms. Edwards:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have requested an extension of the public comment period for this project. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

You expressed concern over destroying the Neversink River. This project has no potential to destroy the Neversink River as you have been led to believe. The previous automobile salvage yard and mining operation on the property have been remediated contributing to improving river conditions. As trust property, the site would be subject to all environmental regulations established by the Environmental Protection Agency (EPA). Potential operational environmental impacts are therefore subject to EPA control.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K [illegible]

ACTING Director, Eastern Region

RECEIVED
MAR 17 2005
By

3/12/05

Dear Mr Keel;
Regarding five casinos in Sullivan Co. Please do not extend our comment period. We have waited for so long now. What more can be said?

Thank you sincerely,
Margaret Hazen

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 18 2005

Ms. Margaret Hazen
PO Box 487
Whitelake, NY 12786

Dear Ms. Hazen:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have noted that the request for an extension of the public comment period by other persons is not justified. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Rec'd

MAR 2 1 2005

March 10, 2005

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler

Re: Comments on the Draft Environmental Impact Statement for the Stockbridge-Munsee Casino

Dear BIA and Other Involved Agencies:

I am writing as President of Orange Environment, Inc., a not-for-profit, tax-exempt organization concerned over its 21 years with protecting the integrity of the environment and communities of Orange County and its region and promoting sustainability. OEI has had standing over this time to adjudicate and litigate on behalf of the residents of Orange County on issues of major environmental import. Please consider OEI an interested party with regard to this application.

While the DEIS prepared by Rizzo Associates purports to address cumulative and regional impacts of concern to OEI, particularly traffic and Air Quality Impacts, we are concerned that the type and level of analysis falls far short in establishing a factual record for the permitting agencies to rely upon in rendering their decisions.

In particular, the DEIS and its appendices B and I fail to adequately take into account impacts to Orange County due to traffic on the Rt. 17 (86) corridor and on radiating traffic on other Orange County roads.

In a nutshell, Rt. 17 serves as a transportation corridor for numerous constituencies that cumulatively comprise its flow of traffic. These subgroups of travelers include the following:

1. Local traffic which relies on Rt 17 as the main street of Orange County. There are no redundant alternatives available to play this role.

2. Commuter traffic which uses Rt 17 as a main thoroughfare, with the dominant traffic flow going to and from the New York Metropolitan Region via the New York State Thruway and the Harriman toll booths. Rail commuter traffic heavily uses the Harriman station, adding it to the same dynamic.

4. Tourist and shopping traffic which heavily uses the Woodbury Commons outlet site in Harriman.

5. Through traffic of a national scale that utilizes the Rt 17/Rt 86 corridor. The truck portion of this flow and the volume of the flow itself will increase when Rt. 17 becomes Rt. 86.

6. Through residential traffic to growth areas of Sullivan County.

7. Catskill vacation traffic that utilizes Rt 17 particularly in summer and on weekends.

The existing traffic volume due to these constituents has dropped the LOS on RT 17 to the lowest level for peak portions of the week. It is now common to have lengthy waits during morning and evening commutes and extreme waits during Friday evening and Sunday evening periods. Friday mixes commuter and vacation traffic, but Sunday evening has caused similar backups of miles before the toll booths. Inclement weather and increasingly common accidents cause ad hoc waits along this system. This problem has not been solved by increasing speed limits, which have dramatically increased hazards of driving on Rt. 17.

In short, there is a traffic crisis already on Rt. 17 without the Rt. 86 conversion. Additional major sources of traffic growth threaten to shut down the system so that it does not work for mobility.

The crisis is matched by traffic congestion on secondary roads throughout Orange County and by traffic dynamics on Rts 84 and 87. Likewise, these issues radiate south from Orange County to Rockland and Bergen Counties, and can certainly be felt in major intersection zones, such as that in Mahwah where Rts. 17, 287, and 87 merge.

And there is a note of deep irony in creating traffic dependent casinos up a road corridor whose level of service is failing and which will be pushed over the edge by the cumulative project proposals under discussion.

How well does this DEIS address these issues?

There is some acknowledgment in the DEIS (p. 181) that the project will have a significant impact on traffic in its most congested point along the Rt 17 corridor, projecting a 5% increase in

traffic volume in the Goshen area. In Table 5-19, there is a further projection that the 2001 level of 99,000 vehicles in average daily traffic passing by the Goshen area will grow to 119,100 in 2011 even with no build and to 124,900 in 2011 if the project is built. Cumulative impact figures further reinforce the severity of the project impact. Assuming for a moment that these figures are adequate projections, and considering the cumulative effects of all growth, we see that the existing lowering levels of service on this vital artery are due to plummet to a point of disaster, perhaps even without the project and certainly without the cumulative Sullivan growth impacts.

The DEIS would have us ignore these impacts as insignificant. They are not. And they must be considered fully. Our confidence in the significance of the Orange County road impacts comes from our own analyses, those done by the Orange County Department of Planning, and new confirmatory analyses recently undertaken for NRDC. Just today, there were reports of a new analysis addressing impacts in Orange County to the Town of Montgomery due to traffic impacts on Rt. 17K.

Likewise for the air pollution consequences of this traffic quagmire.

While the micro-scale analysis of the project concludes impacts including increased CO and PM10 due to project and cumulative traffic, the Meso or region-scale analysis does not examine these NAAQS. Instead, this analysis rests upon the ozone precursors VOCS and NOx.

While overall VOCs are shown to increase 2.8% for the project and 6.5% under cumulative analysis and NOx 3.1 % and 7.4% respectively, Tables 5.29 and 5.30 present data showing for the project less than a 1% increase in VOCS and NOx in Orange County, deeming this contribution insignificant. The cumulative impact is larger, but still considered acceptable.

These conclusions are decidedly a matter for interpretation.

As the Table below, based upon Table 6.2, shows, daily roadway VOC and NOx in Orange County is hardly insignificant.

Pollutants	2011 no-build	2011 build	2011 cumulative build
VOC	5,526	5,678	5,887
NOx	16,175	16,678	17,371

In fact, these figures demonstrate that sizable amounts of these air pollutants are present. The extent of the total contaminant load allows the DEIS to argue that the additional contribution from the Project or from Cumulative Sullivan sources is not significant. However, this conclusion flies in the face of NEPA and its intent to address cumulative sources that, by themselves may be relatively insignificant, but in sum, present a cumulative problem. The point simply is that the addition of these ozone precursors is negative in itself and particularly negative

in sum.

The same logical problem occurs when the DEIS attempts to dismiss the importance of Ozone precursors, hazardous on their own, and doubly so as sources of ozone. The DEIS argues that ozone is a downstream phenomenon. The ozone formed over Orange County will affect someplace else, just as Orange County can never be free itself of ozone formed from downwind sources. Herein lies a tautology that NEPA seeks to address because the reasoning used absolves anyone from responsibility to address ozone. In fact, regional transport of ozone in no way absolves anyone from addressing localized sources and it certainly does not absolve the involved agencies from weighing new sources that will affect an already damaged region.

I note for the record that Orange County is already out of compliance for Ozone, as is the larger metropolitan region. Therefore, New York State, through its State Implementation Plan, and any project reviewing agency—from the local to the federal—must pay careful attention to sources that contribute to ozone.

I remind the agency that ozone in its tropospheric form is an air quality standard about which we know increasingly more over time. It is the source of respiratory distress on short term to long term timescales, elevating ozone to an issue of irreversible and irreparable nature. Every citizen of Orange County is placed at risk by these pollutants; their transport from elsewhere underscores issues of irresponsibility and disregard that have generated numerous downwind state lawsuits. Increasing local generation is unacceptable. And the casino(s) are point sources, in effect, for this enhanced generation.

As a former consultant to the State of New Jersey studying the impacts of ozone exceedances, I can confirm that the human costs of an ozone prevention program based upon avoidance is extraordinary. Where you cannot reduce ambient airborne ozone, it becomes necessary to severely limit human exposure to the outdoors during summer months during exceedences for much of the daylight hours. This has a particular impact on the elderly, the young, the ill, sportspeople and exercisers, and laborers. As with stratospheric ozone holes, tropospheric ozone renders the outdoors toxic.

Of course, ozone and its precursors are only one problem. The local site air analysis makes reference to SO2, CO and PM 10. Yet, the analysis of Orange County fails to address these impacts. SO2 is of concern given acidification in the region. CO is of concern because the conversion of the Rt 17 corridor and other roadways into parking lots for extended periods of time promises to add large pockets of CO to areas along the roadway, exposing drivers and workers and residents within the impact zone. A full analysis of all of these impacts is required.

Likewise with particulate matter. Orange County has been notified that it is out of compliance for this NAAQS. Any activity that increases exposure to PM—and the casino project and cumulative scenarios certainly do—must henceforth be analyzed fully, considered carefully, and perhaps modified or denied accordingly. As with ozone, we know increasingly more about PM health effects, and the picture is not pretty. Orange County's own George Thurston, a professor at

NYU's Sterling Forest campus, is a co-author of the major study providing new authority to these health impacts.

Finally, many air issues not covered by the NAAQS are of concern. And the project cumulatively and individually needs to do an analysis of overall transportation and site related CO2 generation and other global warming gasses.

In sum the project and cumulative projects will dramatically increase PM, CO and other NAAQS exposures along the Rt. 17 corridor, on overflow secondary roads and on other key arteries. The DEIS fails to acknowledge and fully discuss these impacts and their significance for health and for the regulatory compliance status of Orange County. New York State's responsibility to help its counties comply with the Clean Air Act is also undermined.

There are other related impacts, as well. Road maintenance costs, the costs of road widening, secondary growth impacts along the corridor, increased demand for gasoline and the secondary pollution impacts, service demands (police, fire, EMT), etc., all should have been considered.

It is incumbent on the applicant to address such impacts in its section on mitigation. For example, as OEI has argued with the Mohawk application, mass transit such as a rail connection along the Rt. 17 corridor might divert significant commuter traffic from Rt. 17 and may further allow casinos to avoid traffic on a major scale. The proposed project might further remove parking capacity or charge for parking or might use strong incentives for bus or rail users to induce use of mass transit. In short, the project must be prepared to divert the bulk of its clients to mass transit as a mitigation and thus prerequisite for permitting. Creation of a rail alternative is a reasonable mitigation for the project and certainly for the cumulative projects considered.

There are other issues of note with this DEIS as well.

Alternatives

In Section 3.0, we see a failure of the Alternatives section to address the project in a manner keeping with NEPA's intent.

No alternatives are considered that would address the potential non-casino development of the site, alternative ways to promote the legitimate interests of the Stockbridge-Munsee or alternative means for promoting the economic development of Sullivan County. Likewise, no alternatives are presented for getting the some 10 million yearly visitors—the bulk arriving along Rt 17 from the east—to and from the casinos.

The Affected Environment

Section 4.0

The affected environment is narrowly defined to include only the project site and the

immediately adjacent areas. NEPA's intent was much for integrative and regional.

Section 6.0

Cumulative impacts are constrained to two other of the four additional proposed casinos, although the larger frame of impact is acknowledged and appropriately put on the agenda for the FEIS. Unfortunately, unless the FEIS is subject to public comment and hearing and unless revision is possible as a recourse of comment, this tactic places the larger cumulative effects outside public review. We therefore demand that a Supplemental Cumulative Impact Assessment be undertaken now, rather than waiting for the FEIS.

The range of the cumulative assessment is also narrow. The impacts associated with the two casinos, four resorts, two recreational/cultural projects, two hotels, three housing units and one commercial project are stated in Table 6-1 on page 230. The list of included projects in the cumulative assessment is inadequate.

For example, the DEIS acknowledges some 8,000 housing unit starts in Sullivan and Orange counties, enough new housing it is suggested to accommodate the housing demands generated by this project (although this ignores existing housing demand, which might well fill these units without the casinos). The cumulative analysis must account for these acknowledged trip-generators, school and service demanders, etc. Known development proposals need to be considered. Given regional growth dynamics, perhaps build out analysis is needed for inclusion in cumulative effects considerations.

For the projects used in the DEIS cumulative assessment, peak hour trips associated with each project are listed without source and the totals are not even offered for these projects. By my addition, 10,819 peak hour trips are acknowledged. No other impacts are addressed, nor detailed impacts associated with these trips. To this, the proposed project will add some 2,260 vehicles. These figures hardly appear to account for the ten million yearly visitors generated by the proposed project alone, without the cumulative impacts.

From the standpoint of regional traffic, the peak hour designation is meaningless. Traffic LOS issues on the Rt 17 corridor toward Harriman and in the Thruway/17/I287 system to the south show multi-hour peak surge periods on Sundays and Fridays and on weekday mornings. Thus, the peak hour estimates shown may be meaningless. As shown in table 5-15, total trips are much greater, ranging between 30,500 and 36,700 trips on Friday, Saturday and Sunday.

An additional 100 buses per day are estimated, 30 per weekend peaks (but no cumulative figures are given)

Some concern must also be given to the time comparisons used in the DEIS. Comparisons between 2001 and 2011 projected traffic rates are used. Given that the facility might be

operative in 2007 or 2008 under a fast time line, 2011 represents a reasonable year for projecting traffic impacts for the facility to be in full operation. However, NEPA requires that long term as well as short term impacts be considered. Thus, a third comparison point is needed to look at projected full cumulative impacts.

Finally, in this regard, the assumptions for shared trip rates with other casinos are arbitrary. Projecting shared trip rates of 30% with one and 50% with two casinos, we can project that three casinos will share 70% and four 90% of the traffic, making the fifth casino virtually impact free. In fact, trip duplication rates may be dramatically less. The DEIS relies upon Atlantic City, which has casinos united by pedestrian friendly proximity and is therefore clearly not a good model. And the interpretation of the Connecticut casinos as between 0 and 70% traffic duplication shows how meaningless traffic estimates can be. By extension, we would need to consider traffic scenarios for Sullivan county that show impacts for traffic sharing of 0-30% for one casino and 0-50% for two, etc.

Induced Growth

It is interesting that the DEIS assumes only .5% impacts for induced growth against an expected no build growth not associated with the casino. While cumulative impacts are not considered here, it is interesting that the long awaited economic benefits from casino development are valued as such a weak multiplier. It would appear that these economic and other impacts are magnified in touting the benefits of casinos and shrunk when estimating the impacts.

In sum, the DEIS fails to fully identify impacts and to provide for their mitigation. Unless severe and likely impacts of the proposed project can be reasonably mitigated, the project should not be permitted.

Sincerely,

Michael R. Edelstein, Ph.D.
President, Orange Environment, Inc.
Please correspond to 26 Murray Ave., Goshen, NY 10924

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 18 2005

Mr. Michael Edelstein
Orange Environment
26 Murray Avenue
Goshen, NY 10924

Dear Mr. Edelstein:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your primary concerns appear to be Orange County traffic and traffic related air quality deterioration. In regard to the potential impacts on Orange County traffic along Route 17, we have to rely on the traffic studies and any assessment provided by the New York State Department of Transportation (NYSDOT). The latest information we have is that the NYSDOT considers Route 17/I-86 to have "sufficient capacity to handle all current and projected traffic for the region". There has been no projection of impacts from any single tribal casino that cannot be mitigated through standard mitigation agreements. From your letter it appears that major Orange County traffic impediments come from (1) the toll booths along Route 17/I-86 and (2) a lack of building adequate roadway capacity concurrent with local commerce growth planning in Orange County. Neither of these issues are subject to control or influence by the Bureau of Indian Affairs (BIA), and neither are the result of tribal casinos.

You question the detail of analysis and significance of traffic impact on Orange County. While you may consider a projected 5% increase in traffic along congested parts Orange County as a result of casino construction to be undesirable, it should not be considered a significant increase. Considering the variability of traffic, it is probably within the statistical margin of error for the traffic measurement. The DEIS acknowledges such potential traffic increases. Please remember that these are projections into the future, and all projections are subject to error. You may want more detail, but consider that the more detailed a projection becomes, the more it is prone to error. The BIA must consider potential impacts, but we also must consider whether the project provides the means of mitigating such potential impacts. Route 17 is a State controlled road and is subject to the State of New York funding roadway improvements. The Tribal compact with the State will provide more than adequate mitigation funding to cover any necessary roadway improvements that the State deems needed.

You are concerned about the current Orange County air pollution. Air quality impacts due to traffic are directly related to the amount of stop-and-go traffic encountered. With any increase in traffic there will be a small increase in air pollution, but smooth flowing traffic produces far less air pollution than congested traffic. Efficient traffic planning minimizes stop-and-go traffic to minimize air pollution. That is why Orange County toll booths are a significant source of air

pollution. While we acknowledge that there are traffic related air quality problems in Orange County, a more beneficial solution would be to improve traffic flows rather than limit the number of vehicles traveling through your county.

You are concerned about casinos potentially adding air pollution to Orange County. Indian casinos are not even a current contributor to Orange County traffic and air pollution, but conversely may represent a solution to these Orange County problems. Tribal casinos are projected to be a large funding source for the New York State government. The Indian Gaming Regulatory Act (IGRA) makes payment-in-lieu-of-taxes illegal, but allows a tribe to provide mitigation funding through the State compact. This mitigation funding is intended to mitigate issues such as traffic related impacts that are under State control. If the State chooses to use the money as IGRA intended, the additional traffic lanes along Route 17 would significantly reduce Orange County traffic and air quality problems. While you claim that the project will dramatically increase air quality problems in Orange County, proper use of the State mitigation funds will significantly improve Orange County air quality. While the DEIS acknowledges potential Orange County impacts, projecting detailed air quality impacts is subject to significant error. Since the State compact providing mitigation funds is mandatory under IGRA, an increase in roadway capacity through Orange County would alleviate current conditions, rather than exacerbate them. Such detailed calculations are subject to large errors because the State has the right to choose how to use the mitigation funds. The degree and kind of mitigation the State may choose can vary significantly. State compacts are negotiated separately from the NEPA process and the details are usually not known until after NEPA is complete. That is why such information cannot be included in the mitigation details in the DEIS.

You question the fact that the DEIS only provides a detailed assessment of casino gaming in Sullivan County as the only viable alternative. The DEIS briefly describes other alternatives that were rejected for not meeting the Tribal need. The Tribe is not required to discuss revenue generating activities that do not meet the established tribal need. Tribes establish their own needs and develop their own programs. There are no revenue generation activities that are open to a tribe that compares to operating a tribal casino. Federally recognized tribes are protected under the US Constitution as separate sovereign nations with which only the US Congress can make a treaty. Under that treaty they retain full sovereign status and manage their own internal affairs. Federal agencies do not have the right to question the needs that a tribe uses to request a casino. In Indian gaming NEPA documents we can only require that they establish a need. We cannot question the dollar amount that would meet their need nor means of meeting that need. Congress already gave them the means through the IGRA. They are exercising their legal right to a casino to meet that need.

You suggest alternative transportation means or routes as an alternative that should be fully explored. Alternative transportation means or routes are not under BIA nor Tribal control, so they cannot be presented as viable alternatives for this Federal decision.

You suggest that the Affected Environment discussion not be limited to the project site and surrounding areas, but should be regional. The intent of NEPA was to analyze the impact of the Federal decision. There is no specifically defined radius of impact under NEPA. The nature of the Federal decision is what defines the affected environment. Construction activities are designated only for the trust property in Sullivan County. Drinking water and waste water impacts are only in Sullivan County. Therefore, the discussion appropriately covers Sullivan

County, with much less discussion of potential Orange County impacts. For Sullivan County casino projects the Department of Interior Solicitor's Office determined that Orange County did not warrant detailed discussion. Only the narrow corridor of Route 17 has the potential for significant impact and it is under State control, and thus subject to the State compact.

You question the cumulative impact analysis. The potential cumulative impacts of five casinos are not yet known. The BIA has only received applications from three tribes, so projecting impact beyond the known data would be pure speculation. Since the potential impacts are projections into the future, where there is no available data, our projections may be limited. However, the IGRA built controls into the process to cover where we may not have data. By building controls into the process, even the unknown impacts of five casinos can still be mitigated. Each tribe has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

You question the trip generation numbers and the potential for casinos to share customers. Casino "hopping" is a common occurrence among casino patrons and the proposed Sullivan County casinos are considered to be synergistically grouped to encourage such behavior. Even though the proposed Sullivan County casinos are not within walking distance, patrons are expected to visit more than one casino. Please remember that projections are subject to error, but even the best projections are only based on previous experience. Traffic projections are generally based on customer market projections and growth factors. Market projections make assumptions based on the size and drawing power of a casino and may not consider such things as artificial market saturation points due to uncontrollable factors such as traffic congestion. While subject to error, the authors consider this to be the best projection possible at this time.

You question the induced growth calculations. Induced growth calculations use standard factors based on items such as the size of the casino, the proximity of other casinos, availability of casino support services etc. Again, this is a projection and like all projections are subject to error.

You conclude that unless the project can be fully mitigated, it should not be permitted. The State compact and local mitigation agreements as well as induced regional economic growth will more than fully mitigate potential impacts.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

ORANGE ENVIRONMENT
P.O. BOX 25 • GOSHEN, NY 10924 • 914-294-5852

March 28, 2005

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler

Dear Mr. Keel:

Thank you for letter of March 18 with regard to my comments of March 10 on the Draft Environmental Impact Statement for the Stockbridge-Munsee Casino. While the window for comment is still open, I wanted to raise issues that are enabled by your timely and thoughtful reply.

Please update your response taking these further comments into consideration:

1. You note that your traffic assessment is based upon NYDOT data. In particular, this data finds that there is "sufficient capacity ...for...projected traffic in the region." I am not familiar with the document cited and did not see the document in your bibliography. However, this document is woefully out of date. All residents and passers-through to the region are aware that there is a poor LOS for Friday evenings and Sunday afternoon and evening, precisely the points when casino impacts will be greatest. Similarly, the LOS is often poor on weekday commute mornings or when weather is even slightly inclement. Since I commute on this road, I know this to be a fact. The DOT data is wrong.

Today you will receive the submission from Orange County Department of Planning, which also provided data that OEI relied upon in the Mohawk application. This data supports my analysis and shows the DOT data you cite to be wrong. Projections by Orange County of future impacts to the Rt 17 corridor even without the casino show congested conditions. It will take much less than

the twenty five million cumulative casino trips per year projected will bring the system to a total halt. Separate analysis by NRDC that I assume is being submitted to you confirms the same conclusion. For the FEIS, therefore, the BIA must take a hard look at this issue and consider current studies, such as the recent study undertaken by Orange County for the southeast corner of the county.

2. You indicate that the contribution of the toll booth and growth overriding adequate roadway capacity in Orange County on Rt 17 are not subject to the control or influence of the BIA or the tribes. This statement is true. However, you omit the implications of this information—namely that it represents a baseline condition for the roadway that the Stockbridge Munsee DEIS says will carry 75% of the casino traffic. If there is no baseline capacity for a cluster of facilities promising a major dependency and impact on this road corridor, then NEPA demands that you either mitigate the impact (i.e., make any casino approval conditional upon installation of rail or another means of addressing the lack of capacity) or deny the permit. In sum, you are not responsible for the condition. But you certainly are responsible for assessing the condition accurately and taking it into account in determining impacts and mitigations and whether the permit can and should be issued. You cannot escape that responsibility.

3. As to the issue of a 5% increase in traffic being significant, Orange County projects a much greater increase. Nevertheless, staying with this estimate, you err in assuming that a 5% increase is not significant. That increase on a roadway lacking capacity or having heavy local demands is quite different than such an increase for a highway having excess capacity and minimal demand. Your analysis of Rt 17 is inadequate currently and does not allow you to draw a conclusion of insignificance. Furthermore, your discussion of projection error is not a strong consideration. The estimates for cumulative casino traffic impact vary, but are never insignificant. The DEIS makes very conservative estimates to begin with. Statistical error cuts both ways. Yes, the impact may be less than estimated in reality, but it also may be greater. Particularly given the flawed DOT data you relied upon, your entire traffic study needs to be redone.

Please note that I am a Ph.D. in Social Psychology, I am a social impact assessor and I teach Impact Assessment. If you wish to examine your work for potential error, I would be happy to walk you through a full analysis. I am afraid that your error is stacked against precaution, precisely the opposite of where science deems it should be.

4. You assume that the tribal compact with the state provides more than enough money to pay for road improvements. First, we believe that road improvements, per se, will not address the problem at hand. Orange County has suggested addition of a third lane to Rt 17 in Orange County. However, while that addition may be necessary, it will not address the traffic problem since roads congest around nodal points, around heavy intersections, and around hazard points (Rt 17 congests in the morning in part because it faces east into the rising sun). Roads are well known to outgrow their improvements quickly. Furthermore, the CAA noncompliance issue may well impede or prevent road improvements. The challenge is to decrease traffic not to

increase it.

Finally, if you wish to argue that impact funds provided to New York will serve to mitigate impacts, then it must be stipulated in your decision that New York (and/or the tribes) are required to dedicate funds sufficient for this purpose. Otherwise, there is no reason to assume that the state will deploy funds to mitigations in Orange County. Rather, the mitigation needs to be firmly in place before the impacts occur with dedicated funds available to enhance the mitigation if impacts exceed mitigated capacity. Since rail, or some other means of removing vehicles from the Rt 17 corridor, is the only suitable mitigation given CAA, your state funding does not address the remedy in any case.

5. I quite agree that impediments to traffic flow, such as the toll booths, should be removed. However, I lack the ability to achieve this. You, however, can make this a condition of any decision. Absent any way to achieve removal of the tolls, you must assume that the impediment exists as a baseline condition likely to continue. You cannot just wish it away, as you seem to be doing. In any case, the Rt. 17 system dumps into other nodal points, most significantly the I-287, I-87, Rt. 17 intersection in Suffern. Even if Harriman ceased to be as significant a blockage point, there are others. And Harriman is a major traffic juncture in any case because of Woodbury Commons and other commercial centers even absent the toll booth.

Of further concern here is the extent to which Rt 17 serves as a local road, with substantial local traffic generation. Such traffic flow interferes with through traffic. Yet, as our main street, Rt. 17 has no alternative routes available to accommodate local demand. This fact is why the rail line on the Mainline has emerged as key in our thinking. Unless some traffic stream is siphoned from the system, the system will be forced to the breaking point. The idea of increasing system capacity to keep pace is not viable. Rail is not a minor undertaking. But without this, your casinos will be limited by congestion. You indicate that such alternative transit routes are beyond BIA or tribal control and cannot be looked at as alternatives. I dispute this interpretation of NEPA. Yes, the tribes are not proposing transit projects. But large sums of money have been dedicated to addressing various impact issues. Therefore, it is not unrealistic to see this also being explicitly addressed. NEPA is clear that you must balance the economic, social and environmental impacts. You must consider cumulative effects in doing this. And the project must mitigate problems. Certainly you would not approve of a project lacking adequate parking or sewage capacity, or not having access to water without drawing down available resources. The proponent would be required to provide parking, sewerage or a water mitigation. The same issue applies here with regard to access to the casino(s). In sum, it is within your mandated responsibility to address the traffic and air pollution issues we raise.

6. Re the IGRA process, it is certainly the case that the tribe(s) provide unspecified resources to New York State. As noted above, however, unless those funds were to be used to mitigate the problems raised, then they are irrelevant. They must be restricted to use for mitigation of the impacts in question in order to have relevance to this discussion. New York State is an independent level of government from the locales where the impacts will be felt. Unless New York becomes bound to expend received resources in mitigatory activities, we must assume the

impacts are not mitigated.

7. You assume that addition of an another lane will mitigate impacts in Orange County. We dispute this. And, because no proposal to add a lane actually exists and no analysis has been made of such a proposal, it is moot in any case. If you believe that this mitigation is necessary, then you should make any decision to permit casinos contingent on mandated road widening.

8. Your agency's restriction of the scope of review to Sullivan County and a strip of Rt 17 in Orange is not compliant with NEPA, which clearly provides for examination of cumulative effects in order to prevent the partitioned thinking you engage in. NEPA assumes that the scope of any given impact extends to an impact area appropriate for that effect. For example, in the high level nuclear waste siting process, no one has disputed the idea that trucking radioactive materials to Yucca Mountain has impacts. If one employed your reasoning, the DOE would have only to look at the immediate Nevada environs for impacts.

9. Your comment on cumulative effects suffers from the fallacy that IGRA is a mitigation mechanism. Rather IGRA is a profit sharing mechanism that provides funds to New York State. Orange County has no assurance whatsoever that any of these funds will come here and that they would be used for mitigation.

Furthermore, the kinds of mitigation required in this instance (a rail line, the third lane, etc.) take long term planning, review, and require up front funding. Are you suggesting that New York, the MTA, or another entity should undertake mitigatory actions on the speculation that the casino funds will recompense them? Otherwise, it will be impossible for the mitigation to ever catch up with the impact.

Rather, the mitigations need to be in place first so that the BIA can in good conscience assume that adverse environmental impacts are being addressed. Certain impacts are not addressed with vague actions by unspecified actors. No reasonable person would accept this scenario as meeting the fiduciary responsibility placed upon BIA by NEPA.

10. The issues of casino hopping are not clear but the unclarity does not change the overall analysis. Casino hopping requires that patrons drive to Sullivan precisely because casino hopping is not a pedestrian activity. Thus, hopping compounds the problem.

11. Re induced growth, you indicate that calculations are standardized. Yet, the DEIS assumes that planned housing capacity (much of it in Orange County) will accommodate housing needs, a conclusion we dispute. In fact, you have not calculated induced growth impacts in a manner that reveals a knowledge of the region. Your excuse—yet again—that projections are subject to error does not help your case. Of course error occurs in any calculation. One attempts to understand

the likely range represented by type I and type II error and to project impacts associated with both extremes. If this is done, no excuses are needed about fuzzy calculations. NEPA is an exercise in addressing uncertainty. So you cannot remove the uncertainty from the process. The point is that one can anticipate adverse consequences that might be avoided by foregoing a course of action or by altering the course in some way. Your approach is avoid acknowledging the impact so that you are not required to account for it. That is an affront to NEPA.

12. Finally, you conclude with the assurance that "the state compact and local agreements as well as induced regional economic growth will more than fully mitigate potential impacts." For this statement to have any meaning, you must explicitly show a relationship between these alleged sources of mitigation and the adverse impacts that we have questioned. In fact, there is no clear and probable connection between the three actions you cite and Orange County's long term exposure to traffic congestion and air pollution, as well as other adverse effects.

In your FEIS, you have the opportunity to take a hard look at these impacts and actually try to consider how best to weigh them in the eventual decision. You have serious problems with the adequacy of your baseline analysis, your impact analysis and your understanding of mitigation. You have not achieved a cumulative impact assessment. I urge you to rectify these problems so that the FEIS can serve as an adequate foundation for the type of reasoned decision that NEPA demands.

Your response suggests that you have already made up your mind, that the BIA has no capacity for independent assessment beyond the applicant's presentation, and that mitigations for impacts are somebody else's responsibility. I implore you to strive for the objectivity demanded by NEPA, to seek help to improve your agency's capacity to take lead agency status, and to accept the mantle of responsibility of a decisionmaker for assuring that impacts from the decisions you make are seriously considered and addressed.

I again thank you for your response even if my rebuttal has not always been favorable. I would be happy to engage in further correspondence or in conversation to assist the BIA in strengthening the review process.

Sincerely,

Michael R. Edelstein, Ph.D.
President
26 Murray Ave.
Goshen, NY 10924

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 0 2005

Mr. Michael Edelstein
Orange Environment
26 Murray Avenue
Goshen, NY 10924

Dear Mr. Edelstein:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

1. You state that the information regarding sufficient capacity for Orange County roadways is out of date. You state that the Orange County Department of Planning also asserts that the New York State Department of Transportation (NYSDOT) data is wrong.

The information in question comes from a letter dated August 27, 2004, to Chief James Ransom of the St. Regis Mohawk from Joseph H. Boardman, then Commissioner of the NYSDOT. He states "Including the projected casino traffic, there is sufficient capacity to handle the existing and projected traffic on these highways." Roadways that operate within the rated capacity can still have specific areas of congestion. The current Orange County traffic issues may pertain to previous inadequate planning. They are not impacts related to the proposed project. The project's proposed mitigation funding more than adequately covers potential impacts. It is up to the State to determine how to use the money.

2. You state that the National Environmental Policy Act (NEPA) demands that we mitigate the impact on Orange County roadways or deny the permit.

The BIA approval process for casino projects must comply with NEPA, but must also comply with the Indian Gaming Regulatory Act (IGRA). IGRA provides for full mitigation through the local mitigation agreement and required State compact. NEPA is intended to analyze and then plan mitigation for any negative impact due to a Federal action. The Federal approval process under IGRA requires mitigation provisions as an integral part of the approval process, rather than just planned mitigation in the Final Environmental Impact Statement (FEIS) as required under NEPA. IGRA thereby exceeds NEPA requirements. Even when unknown information prevents full analysis under NEPA, full mitigation is already provided for by IGRA through the local mitigation agreement and State compact. The projected State income from the casinos is more than adequate to mitigate any potential impact under State control.

3. You question the significance of impact and accuracy of the traffic study data. You favor Orange County's higher projections over NYSDOT data. You also note that statistical error cuts both ways.

Error in such studies can come from many sources. Other sources of error are unintentional human bias based on personal reasons that can even influence numerical projections. This can be common in field studies that use human beings to count, whether they are counting bears or cars. Consideration of such data must also look at the potential for such human error and consider whether the probable bias is high or low. The NYSDOT data should have no human error factors to cause bias. Their assessment should be the most error free and should provide a suitable traffic baseline. Orange County wants more State money, so their natural direction of bias would be to overestimate the traffic, even if it is unintentional. They have even asked the tribes for money, so their motivations make their data suspect. Consider also that the information that you propose to trust from Orange County is from the same people that has produced your current congested situation. Proper growth planning includes traffic mitigations as part of approving the plans. Instead, Orange County has shopping centers that are a source of major congestion. On the other hand, the casino project includes mitigation payments to both local government and State government to help them make the proper traffic mitigations. Traffic studies for casinos are based on the customer projections from their market analysis. The market projections are usually funded by casino backers who, if anything, may tend to overestimate the market in order to convince the tribes of impending wealth. That tendency to overestimate the market would necessarily also translate into overestimating the traffic impact. So the probable human error bias, if any, would be to overestimate the traffic, rather than underestimate the traffic.

4. You believe that road improvements will not address the problem at hand. You state that Clean Air Act (CAA) noncompliance may impede road improvements. The Bureau of Indian Affairs (BIA) must require the State to use the mitigation funds for these impacts.

Improved traffic flows should assist in CAA compliance, not hinder it. The amount of pollutants that any vehicle produces is directly related to its speed, consistency of speed and amount of acceleration required. That is why air quality impacts due to traffic are directly related to the amount of stop-and-go traffic encountered. With any increase in traffic there will be a small increase in air pollution, but smooth flowing traffic produces far less air pollution than congested traffic. Efficient traffic planning minimizes stop-and-go traffic to minimize air pollution. Improving traffic flows by making vehicle velocity more consistent will reduce the pollution from each vehicle. Improving traffic flows also reduces travel time and reduces vehicle use time per trip. The reduction in cumulative trip time can be significant. While adding more vehicles can add a small amount of pollution, adding sufficient concurrent roadway capacity to make the vehicle velocity consistent will minimize pollution potential. Constant velocity reduces the total pollution produced per vehicle per trip. Because of that you can actually have more cars flowing smoothly and produce less pollution than fewer vehicles in congested traffic. Air quality and traffic safety both benefit when traffic flows smoothly at a constant velocity. That is why attaining smooth traffic flows should be the primary goal of any traffic mitigation. While NEPA specifies that we identify mitigation necessary for minimal impact due to the Federal decision, the Federal decision must also comply with IGRA. IGRA has

specific mitigation processes outlined, including the State compact to mitigate State controlled issues. Neither the BIA nor the Tribe can dictate how the State uses the mitigation funds provided under IGRA.

5. You believe that BIA approval should require the removal of the toll booths that impede traffic as a means of mitigation required for project approval. Route 17 serves as a local road due to a lack of alternate routes, which makes the idea of a rail line attractive. You believe that the BIA should be able to mandate mitigation for traffic and air pollution, whether by specifying a rail line or other means.

The process required to approve or disapprove of the casino project is all dictated by Federal regulation. All mitigations must be according to the guidelines specified under IGRA. Issues under State control must be mitigated by the compact between the Tribe and State. Because tribes are protected under the constitution as sovereign Indian nations the BIA does not participate in those negotiations. Generally, states take a percent of the slot machine revenues. The State has the responsibility for choosing how to use those mitigation funds. You should contact your state representatives, if you believe that a rail line would be the best use of those mitigation funds.

6. You believe that State mitigation funds should have their use restricted to project mitigations.

We must follow IGRA as written. The State must decide the funding level for the mitigations required for State controlled issues and how those funds will be used. By allowing "wiggle room" IGRA allows mitigation for unanticipated impacts.

7. If an additional traffic lane is determined to be necessary to accommodate traffic along Route 17, the BIA should not approve the project without mandating road widening as mitigation.

See the response to # 6 above.

8. Restricting the scope to only consider Sullivan County and Route 17 is not NEPA compliant. NEPA assumes the scope of any given impact extends to an impact area appropriate for that effect.

This process must comply with NEPA and IGRA, as well as respecting the constitutional rights of the tribes. These three requirements complicate what may otherwise be a standard NEPA compliance issue. IGRA requires local support for off-reservation casinos, thus encouraging local mitigation agreements. IGRA disallows payments to states in lieu of taxes, but allows mitigation payments for impacts to states. In that way IGRA's mitigation provisions separate mitigation of State controlled issues from other locally controlled mitigations. As a result, local mitigation agreements and State compacts are considered to be the IGRA sanctioned means of mitigation. The only other source of potential impacts not covered by these mitigation agreements is considered to be regional growth related, and such potential impacts have the inherent funding source of an increased tax base for inherent mitigation. Due to the inherent mitigation, these issues are considered to have absolutely no potential to have a significantly adverse

effect. While narrative is provided for potential impacts beyond IGRA mitigation areas, such as Orange County, detailed analysis is not considered necessary due to the inherent mitigation that is under local control and not tribal control. Historically, regional growth has always been self mitigated at the local level through an increasing tax base as a routine function of local government. Neither tribes, nor the BIA can control how local governments deal with increased financial resources or increased responsibility.

9. You claim that IGRA is a profit sharing mechanism rather than a mitigation mechanism. Orange County has no assurances that the State would share mitigation funds. The transportation mitigations required will take long term planning without current casino funds for such planning.

See the responses to # 2 and # 8 above. While some may view it as such, profit sharing is not the purpose of the State compact under IGRA. We must comply with the IGRA provisions as written. It is up to the State to determine the nature and extent of State controlled mitigations. The State government could issue bonds or other such means to generate cash to plan mitigations, should project approval be granted. It is up to the State to determine whether Orange County would receive State mitigation funds, or would have to fund regional growth issues using inherent tax revenues. The IGRA required mitigation is covered by the local agreement and State compact.

10. "Casino hopping" does not ease the traffic problem since they still have to drive to Sullivan County.

Casino hopping pertains to the customer counts and traffic counts. As an example: If 10 people drove from New York City in 10 cars and all visited 5 casinos, each would be counted by every casino making the customer count at 50, but the traffic count is still only 10. That makes the customer count 5 times higher than the traffic count. Where 50 cars are expected and only 10 show up, the traffic is 5 times lighter than expected based on customer counts.

11. Induced growth is not fully accounted for in Orange County. NEPA requires that we anticipate adverse consequences in order to avoid them.

See response # 8 above. The DEIS acknowledges the regional growth impacts. Regional growth is not considered to be an adverse consequence by most people. Anticipating regional growth also does not require the Tribe to make housing available for new regional residents. New housing starts would be expected with any regional growth. The construction industry considers it very beneficial. Regional growth brings in new residents that pay taxes. Orange County growth impacts are expected to be self mitigated through their increasing tax base.

12. In order to conclude that the potential impacts will be more than fully mitigated through the local agreement and State compact you believe that we need to show their exact relationship.

As mentioned in the same paragraph that you refer to, the details of the State compacts are not known until after NEPA is complete. The local agreement provides 15 million

dollars annually for local mitigation in Sullivan County. Regional growth is expected to increase State and local tax revenues dramatically as well as providing an economic boom to the region. While we cannot provide the total projected State income, you may wish to consider local newspaper reports that have included such projected annual revenues from the State compacts. You may also wish to read "The Report of the New York State Task Force on Casino Gambling" which documents all the potential impacts, including induced growth and an expanding economy.

Orange Environment Conclusion: You believe that the BIA has serious problems with the adequacy of the baseline analysis, impact analysis, understanding of mitigation, and has not achieved a cumulative impact assessment.

While you discount the NYSDOT's traffic baseline analysis, a State document must be considered unbiased and the definitive authority for State controlled roads. You believe a detailed impact analysis for Orange County is warranted for induced growth related impacts that already have the inherent funding source of an increased tax base. With inherent mitigation there is absolutely no potential to be considered a reasonably foreseeable significant adverse effect as is required for detailed NEPA analysis. Mitigation for tribal casino projects must be done according to applicable regulations including NEPA and IGRA while acknowledging the sovereignty of Indian tribes. These regulations and constitutional relationships both limit and guide what can be done for mitigation and how it can be done. These constraints govern what should be analyzed in detail and what can be mitigated. For the cumulative impact analysis we are also constrained by the lack of complete information for two of the five casinos. The narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Robert K [illegible]

ACTING Director, Eastern Region

MARCH 19, 2005
75 TIMBER HILL LN
So FALLSBURG NY 12779

RE: STOCKBRIDGE-MUNSEE DEIS for CASINO PROJECT IN SULLIVAN COUNTY

Dear Mr. Keel,

- We need to have a cumulative impact study for all 5. casinos. Since that's what The Governor is telling us we must have. And it should be an impartial, independent study.
- We ALSO need deadline extension to MAY 12TH for PUBLIC COMMENT on The Stock Bridge-Munsee DEIS. Please grant us that extension this is a project that could pollute and even kill one of our most precious natural resources, the Neversink River.

We are pleading with you for The little bit of extra time for The experts and for us to do proper review and response. Ms. Kalika Evelyn Stern

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Ms. Kalika Evelyn Stern
75 Timber Hill Lane
South Fallsburg, NY 12775

Dear Ms. Stern:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) You request a five casino cumulative impact analysis.

The Final Environmental Impact Statement (FEIS) for the proposed Stockbridge-Munsee Casino will include additional information on the cumulative impacts of the potential five casinos. However, at this point in time we only have applications from three tribes for casinos in Sullivan County. Without applications from the two additional tribes we do not have sufficient information to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that the proposed casinos will have similar drawing power and will be located within a short distance of Route 17. Without hard data it would be irresponsible to attempt to project full quantitative impacts, and the estimated projections that we plan to include in the FEIS must be considered subject to considerable error. The narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

(2) You request an extension of the comment period.

An extension was not granted. All comments must have been received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

03-28-05P02:34 RCVD

MENACHEM RESNICOFF
53 LAUREL PARK RD A-4
FALLSBURG, NY 12733

FRANKLIN KEEL, REGIONAL DIRECTOR
BUREAU OF INDIAN AFFAIRS
EASTERN REGIONAL OFFICE
711 STEWART FERRY PIKE
NASHVILLE, TN 37214
ATTN: KURT CHANDLER

MARCH 23, 2005

DEAR SIR:

I AM TERRIFIED OF THE IMPENDING TERRIBLE PROPOSAL OF OPENING CASINOS IN THIS AREA. HOW SHALL I CONTINUE TO LIVE DECENTLY? HOW WILL MY KIDS BE ABLE TO GROW UP SAFELY AND SECURELY? CRIME WILL ENTER MY LIFE, IMPOSING FEARS AND ANXIETIES UPON MY FAMILY, THRUSTING THEM INTO A HOSTILE ENVIRONMENT, THREATENING THEM AND ENDANGERING THEM AND THEIR ACTIVITIES. CASINOS WILL BRING WITH THEM CROWDS OF WILD PEOPLE, THUGS, HOODLUMS AND ALL SORTS OF CREATURES THAT LIVE OFF DECENT, RESPECTABLE PEOPLE IN HARMFUL SORTS OF WAYS. DRUGS, ALCOHOL, AND ALL SORTS OF ADDICTIONS AND INDECENT ACTIVITIES WILL INCREASE AS A RESULT OF THE CASINOS, DESTROYING THE STABILITY AND SECURITY OF OUR STANDARDS OF LIVING. POLLUTION WILL INCREASE DRAMATICALLY WITH THE ADVENT OF ALL THE NECESSARY WORKERS WHO WILL REQUIRE NEW DWELLINGS BECOMING FROM SOURCE POLLUTERS. NO MENTION OF THIS PROBLEM, NOR OF HOW IT MAY BE AVOIDED, DEALT WITH, OR REPAIRED WAS IN THE DEIS. AUTOMOBILES TRAVELLING WILL INCREASE GREATLY AND FREQUENTLY INCREASING THE POLLUTION, INCREASING TRAFFIC AND DISRUPTING IT, BRINGING MORE DANGER TO SAFE TRAVEL AND RAISING THE COSTS OF AUTOMOBILE INSURANCE IN ADDITION TO THE CONSEQUENT ACCIDENTS. NO UPGRADES FOR ROUTE 17 ARE IN THE DEIS - HOW WILL THE INCREASE IN THE FLOW OF TRAVELLERS BE COMPENSATED FOR IN A MANNER WHICH WILL RETAIN THE CONVENIENCE OF PRESENT TRAVELLING CONDITIONS? THE AIR, WITH ALL ITS POORNESS DUE TO PRESENT POLLUTION,

ALLERGIES, AND PARTICLES, WILL BE TERRIBLY AFFECTED BY THE NEW CARS ON THE ROAD DUE TO ALL THE TRAFFIC AND SMOKE FROM SO MANY MORE SMOKERS IN THE NEIGHBORHOOD. HEALTH PROBLEMS WILL BE EXACERBATED AND NO MENTION OF THIS WAS IN THE DEIS.

WHAT'S GOING TO BE WITH ALL MY NEW EXPENSES AND INCREASES? PROPERTY AND SCHOOL TAXES WILL GO UP. SHORTAGES OF HOUSING FOR THE NEW WORKERS AND INHABITANTS WILL PUT ME IN REAL TROUBLE, RAISING RENT DRAMATICALLY AND PERHAPS LEAVING ME HOMELESS, UNABLE TO AFFORD ALL THE NEW COSTS AND PRICES.

WHAT JUSTIFICATION IS THERE ANYHOW FOR CASINOS HERE? FIVE!!?? THEY WILL DEVASTATE THIS WHOLE COUNTY! THEY ARE OFF-RESERVATION. LAND SETTLEMENT CLAIMS? THEY'RE NOT OUR PROBLEM. THESE TRIBES ARE FOREIGN TO OUR COMMUNITY; WE HAVE NO TRIBAL LAND HERE. NO STUDIES HAVE BEEN DONE DETERMINING THE CUMULATIVE IMPACT OF FIVE CASINOS ON OUR COMMUNITY. NOT ONE CASINO SHOULD BE ALLOWED TO OPEN UNTIL THIS ENTIRE QUESTION IS SETTLED IN A SATISFACTORY MANNER DETERMINING TO PRESERVE OUR QUALITY OF LIFE, ENVIRONMENT, STABILITY, AND SECURITY. ATTEMPTING TO ~~LOCATE~~ SITE THESE CASINOS IN SULLIVAN COUNTY IS REAL PERVERSION OF FEDERAL LAW, IN ADDITION TO BEING EXTREMELY DETRIMENTAL TO OUR COMMUNITY.

WE STRONGLY AND UNEQUIVOCALLY OPPOSE ANY CASINOS OR GAMBLING, OPENING OR OPERATING IN OUR AREA. WE STAND APALLED AND APPREHENSIVE AT THE DISREGARD OF OUR SAFETY, CONCERNS, AND WISHES REGARDING THIS ISSUE, AND EXPRESS SINCERE COOPERATION IN AVERTING THIS CALAMITY.

SINCERELY,

MENACHEM RESNICOFF

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 25 2005

Mr. Menachem Resnicoff
53 Laurel Park Road A-4
Fallsburg, NY 12733

Dear Mr. Resnicoff:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have expressed concerns over your personal security should casinos be built in your area. Please do not let your fears cause you undue alarm. The potential impacts of casinos in your region should not be significantly different than any other site where large numbers of people gather, such as sporting events. Before the State of New York considered the legalization of gambling they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The result is an increase in tax revenues for both state and local governments. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

You also express concern over pollution due to regional growth. The potential for regional growth to cause environmental harm is limited by State and Federal environmental laws. These laws have done an exceptional job of reducing environmental pollution over the past 30 years. The project site was subjected to an Environmental Site Assessment (ESA) according to standards established by the American Society of Testing Materials (ASTM). There were numerous environmental concerns resulting from previous uses of the property where we required correction. The automobile salvage yard and mining operation have since been remediated to standards established by the State of New York and verified by a Federal environmental professional. As trust property, the site would be subject to all environmental regulations established by the Environmental Protection Agency (EPA). Potential operational environmental impacts are therefore subject to EPA control.

You express concern over regional air pollution. Minor increases in air pollutants due to increased automobile traffic are expected, but would not result in violations of existing air

quality standards or affect attainment status of the region. Controlling growth related impacts depend on a coordinated planning process where development approvals are accompanied by roadway improvements to handle projected traffic. Casino project planners have worked with local government in developing roadway changes that minimize impact. Air quality impacts due to traffic are directly related to the amount of stop-and-go traffic encountered. With any increase in traffic there will be a small increase in air pollution, but smooth flowing traffic produces far less air pollution than congested traffic. Efficient traffic planning minimizes stop-and-go traffic to minimize air pollution. Accordingly, Sullivan County air quality impacts are expected to be minimal.

You express concern over potential congestion along Route 17. ·There is the potential for traffic and related air quality impacts along any currently congested portion of Route 17, especially if five casinos are approved for the region. In anticipation of such potential impacts, the Indian Gaming Regulatory Act (IGRA) requires each tribe to form a compact with the State government to mitigate any potential impact under State control. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

With each tribe also having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues that you are concerned about, such as crime and other social issues. The local mitigation agreement provides 15 million dollars annually to cover any increase in local costs for schools, local roads and social services due to the casino.

While you may find regional growth and the construction of new housing in the region to be undesirable, others in your area have expressed a need for the greater commerce and regional commercial growth that would accompany casinos in the region.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert C. Amy

ACTING Director, Eastern Region

Dear Mr. Keel,

We own a spa in South Fallsburg and have worked hard to make it a success.

It's not far from the proposed Stockbridge-Munsee casino. We are extremely, extremely concerned about the negative impacts of this casino - along with the 4 others

proposed on our business, on our lives and on the region.

PLEASE extend the deadline for public comment to May 12th so that time — as well as NKDC & other experts — will have the least needed time for a proper response.

We work daily until 9pm. The DEIS is not available online — & we need to take time to study it at the local library.

PLEASE DO THE RIGHT THING. Please GRANT THE EXTENSION. THANKING YOU IN ADVANCE ~ Ken & Chinmayi Gorzen

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 24 2005

Mr. Ken Gorzen
Rejuvenate Day Spa
P.O. Box 543
South Fallsburg, NY 12779

Dear Mr. Gorzen:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have requested an extension of the public comment period for this project. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K [illegible]

ACTING Director, Eastern Region

5-20-05

To whom it may Concern.

I'm a 70 year resident of Sullivan Co I wish to say no to casinos in our county. This has to do with Environmental Impact Statement of the Stockbridge-Munsee Casino Project Sullivan County N.Y EIS#050047

Please consider this

Sincerely,

Pearl Dumont
Box 64
Rock Hill, N.Y. 12775

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 20 2005

Ms. Pearl Dumont
P.O. Box 64
Rock Hill, NY 12775

Dear Ms. Dumont:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. Your objection to casinos has been noted and will be taken into consideration.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K. [illegible]
ACTING Director, Eastern Region

03-28-05P02:36 RCVD

March 24, 05

Avroham & Sara Goldberger
61 Laurel Pk Rd H4
Fallsburg N.Y. 12733-5033
(845) 434-4836

Dear: Franklin Keel, Regional Director
Burea of Indian Affairs
Eastern Regional office
Att: Kurt Chandler

My wife and I, and our entire community have chosen to move away from the Hustle of the big city. We enjoy the Peace & quiet of living in Sullivan County

Everyone knows that opening Major Casinoes in our County will change our lives in every way, Traffic, Accidents, Crime, addictions. We are devastated

Please reconsider & Make a full study of the effects of Casino's and Gambling on Communities, and let the rural remain rural, & the urban, urban.

Thank you in advance for your cooperation & May you be blessed in all your future endeavors

Sincerely
Avroham A. Goldberger
Sara D. Goldberger
March 24, 05

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 25 2005

Mr. Avrohom and Sara Goldberger
61 Laurel Park Road H4
Fallsburg, NY 12733-5033

Dear Mr. and Ms. Goldberger:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You express concern over a potential loss of peace and quiet. Peace and quiet are relative measures that are subject to individual tolerance levels. Regional growth and increased commerce are a projected side effect of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration, along with the need for increased regional commerce expressed by others.

You also mention the potential for induced traffic, accidents, crime and addictions. The potential impacts of casinos in your region should not be significantly different than any other site where large numbers of people gather, such as sporting events. Before the State of New York considered the legalization of gambling they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The result is an increase in tax revenues for both state and local governments. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather. The local mitigation agreement between the Tribe and local government provides 15 million dollars annually to cover any increase in local costs for schools, local roads and social services such as gambling addictions due to the casino.

Casino designers worked with local planners to minimize the traffic impacts the casino may have on the local population. In Sullivan County the traffic impacts from the casino are expected to be minimal due to these mitigation measures. While some potential impacts are unavoidable, the casino designers put in a great deal of thought into site selection, selecting a site close to Route 17, to minimize impacts.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K [illegible]

ACTING Director, Eastern Region

RECEIVED
MAR 17 2005
By BIA

From: Gina Molinet
Box 321
Livingston Manor, NY
12758

Date: March 10, 2005

To: Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

Please find enclosed substantive issues regarding the Draft Environmental Impact Statement of the proposed Stockbridge-Munsee casino in the Town of Thompson in Sullivan County, New York. I respectfully request that all issues be answered and resolved in the Final Environmental Impact Statement with a copy of the responses sent to me. **Please respond by issue number.**

Thank you.

Respectfully,

Gina Molinet, Broker
RM Farm Real Estate.

enc.

1. Is the site located within 3,000 feet of a toxic or solid waste landfill site?
2. Has a noise contours map been developed for the proposed project and does it show Day-night average sound level (abbreviated as DNL)?
3. Does the project proposal include a full inventory and assessment of all hazardous materials associated with the project?
4. What mitigations are proposed to accommodate traffic generated by the proposed project with existing traffic counts and flows at and adjacent to the project site?
5. Is the proposed building footprint located in a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?
6. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of an Indian gambling casino upon the foreseeable disposable income loss to adjacent commercial, retail, restaurant, recreational and lodging facilities, over the next ten years?
7. What percentage of the project site is proposed for impervious surface, and how does this surface impact existing elements such as a sole water source or other aquifer?
8. Please respond to following issue: The DEIS fails to account for any of the environmental or social impacts of five casinos. The people deserve and the law demands a full, competent assessment of cumulative impact given Governor Pataki's plan to imposing such a burden on (indeed sacrifice) Sullivan County to mitigate state budget problems and avoid the land claim litigation.
9. Will the project influence or be unduly influenced by inadequate off-street parking?
10. Do public school buses travel the road systems associated with the project site, and if so, how will traffic mitigations proposed by the applicant ensure safe and timely schedules for public school transportation needs?
11. Is there evidence of slope erosion or unstable slope conditions on or near the site?
12. Please respond to following issue: It is unfair and wrong to at once transform the traffic in the region from generally clear with some limitations during rush hour, to generally busy and congested and overloaded during peak hours. Mobility would be significantly infringed, and those who disproportionately rely on automobiles, such as businesses, would be badly damaged.
13. Does the applicant propose to handle or sell explosives (fireworks) or propose to store fire-prone materials such as liquid propane, gasoline, or other storage tanks above or below ground?
14. Is the project compatible with surround areas in terms of height, bulk, and mass?
15. What mitigations will ensure that onsite and offsite light and glare will comport with adjacent local government light, glare and signage requirements?
16. Please respond to following issue: There is no analysis of induced growth, contrary to federal requirements, the public interest and common sense. It is not possible to rationally assess the impacts of the casinos without at least a general review of the buildout which will accompany it. Simply relying on local zoning is neither analysis nor mitigation of these growth-sprawl issues.
17. Is the project within 3,000 feet from the end of a runway at a civil airport?
18. Are there pools of liquid or soil staining, chemical spills, abandoned machinery, cars, refrigerators, etc.?
19. Are there unprotected water bodies on site?
20. Has the applicant developed a public safety evacuation and rescue plan for customers, and does the plan accommodate projected customers based upon high or low attendance that is associated with hours of operations, weekdays, holidays, and special events?
21. Please describe whether or how the applicant proposes to hire a local workforce, and how this potential transition of workers from current employment to future employment with the applicant might impact the local workforce?
22. Is the property located within or directly adjacent to an historic district?
23. Were underground storage tanks ever located on the site? If so, provide documentation that all underground storage tanks have been identified, located and appropriately removed by qualified professionals, using current techniques in compliance with 40 CFR Part 280.
24. Please respond to following issue: Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed Indian territory, and the placement of casinos is foreign and offensive to the community. There is no basis for this wholesale intrusion into the community mores and ethics.
25. What are the previous uses of this site and what residual impacts affect the project or are affected by the project?
26. If the applicant proposed to construct hotel or motel facilities at or adjacent to the proposed project, please calculate the estimated impact of business to existing tourist facilities, and the projected hotel occupancy tax loss to adjacent local governments, over the next ten years.
27. What additional sanitary sewer and wastewater disposal systems are required and how will expansions of such infrastructure impact existing, connecting infrastructure in terms of capacity and annual cost?
28. Have soil reports or studies or borings been made for the project site or the area? If so, what are the findings of soil studies accomplished?

29. Does the project comply with Executive Order (E.O.) 11990, Protection of Wetlands, which discourages federal funding of new construction or filling in wetlands and compliance is required with the wetlands decision-making process (§ 55.20 of 24 CFR Part 55)?
30. Will the proposed project increase a need for onsite or offsite daycare facilities for children, and how will the applicant accommodate such need, inclusive of safety of children to and from day care facilities?
31. What is the total anticipated impervious surface coverage estimated for the proposed project?
32. Are other natural resources visible on site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project?
33. Is the project compatible with surround areas in terms of building type (low/high-rise)?
34. Will the project be affected by seismic faults, or fractures?
35. Does the project site or neighborhood suffer from disproportionately adverse environmental effects on minority and low-income populations relative to the community-at-large?
36. Has a traffic study accommodated existing traffic counts experienced at the project site, and then projected appropriate increased traffic counts based upon days of the week, hours of the day or night, and special events?
37. Please project estimates of revenue associated with each gambling, commercial or retail site and equate that to an equivalent sales tax loss of disposable income to adjacent local communities.
38. How will a project workforce impact local housing over-crowding and code enforcement conditions that might impact adjacent communities, projected over the next ten years?
39. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
40. Will the project influence or be unduly influenced by building deterioration?
41. Will the project influence or be unduly influenced by obsolete public facilities?
42. Is the site currently served by an adequate and acceptable water supply?
43. How will the project impact existing hotels, motels, B&Bs RV facilities and other overnight tourism lodging facilities?
44. Will the project influence or be unduly influenced by transition of land uses?
45. Are there existing or abandoned transformers, fill/vent pipes, pipelines, drainage structures?
46. Are there current sanitary sewers and waste water disposal systems serving the site?
47. How will current sanitary sewers and waste water disposal systems be impacted by the proposed project, and at what cost?
48. What cost mitigations is the applicant proposing to offset impacted and increased law enforcement personnel needs of agencies serving the proposed project?
49. Has a traffic study been developed for the proposed project that is specific to this site and this project, and not just generic to the proposed industry?
50. Are there ponds, marshes, bogs, swamps or other wetlands on or near the site?
51. Is the property listed on or eligible for listing on the National Register of Historic Places?
52. Does the applicant anticipate hiring a workforce from outside of the immediate community? If so, from what sources will the applicant recruit its workforce?
53. Please identify by assessor parcel number and physical street address or location, each and all sites considered by the applicant, prior to selecting the subject site as the preferred site.
54. What procedures are proposed for adjacent neighbors who wish to legitimately complain of excessive light or glare?
55. Please respond to following issue: Overall, the plan to site five casinos in the Route 17 corridor is an affront and danger to the existing communities. It is ironic that the remedy for their supposed problem - economic stagnation - is a wholly disproportionate influx of nuisances including casino gambling and induced growth, pollution traffic and social ills.
56. Please respond to following issue: The DEIS fails to take any account of one of the most significant impacts: the introduction and prominence of casino gambling on central-southeastern Sullivan. There is no assessment of the impact on the social fabric. This is absurd since arguably no commercial activity will have as significant an impact on community character as casino gambling, particularly five casinos. No mitigation is even arguably complete unless the social support for gambling impacts on the community is fully funded.
57. What is the projected weekly, daily and hourly traffic count for the site, and how does this translate to an annual traffic increase that impacts adjacent properties and neighborhoods?
58. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
59. What mitigations in terms of personnel, monitoring systems, training and counseling programs is the applicant proposing to minimize the impact of anticipated crime associated with the gambling industry?
60. How will a project workforce impact local community housing needs, projected over the next ten years?
61. Are there active rills and gullies on the project site?
62. Are there usual and customary children's play areas within the vicinity of the project site?
63. How will the project impact existing public transportation facilities of the community?

64. Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1,000 feet), or railroads (within 3,000 feet)?
65. How will the applicant mitigate incinerators?
66. Does the project comply with 24 CFR 51, Subpart B that requires a Noise Assessment for proposed new construction?
67. Please identify an anticipated customer and weekly/daily/hourly traffic count associated with each commercial or ancillary use planned in the near-term and long-term use of the project site.
68. If the site is not currently listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list, should it be? If not, why not?
69. Will the project affect or be affected by hazardous streets?
70. Is the project within 2 and 1/2 miles from the end of a runway at a military airstrip?
71. What procedures or guidelines will be developed that allows community members or adjacent property owners to formally complain about inordinate or unanticipated noise?
72. Please respond to following issue: Governor Pataki himself, the chief proponent of the plan to put five casinos in the Sullivan-Route 17 corridor, has recognized the need for a cumulative impact assessment. In officially commenting on the Stockbridge-Munsee casino the Governor has specifically advised the BIA to conduct such an assessment before approving any of the casinos.
73. Has the applicant studied the current housing stock and occupancy rates of adjacent communities?
74. Is the project located within a floodplain designated on a current FEMA flood map (24 CFR Part 55)?
75. Are there proposed air pollution generators associated with the proposed project?
76. Are there other hazardous terrain features?
77. Is the project compatible with surround areas in terms of land use?
78. Is there any indication of currently distressed vegetation?
79. Will the project influence or be unduly influenced by postponed maintenance?
80. Describe the site elevations and any accommodations required for significant slopes.
81. Does the proposed project comply with public all safety requirements for fire safety, in accordance with state and federal law?
82. Will the project affect or be affected by nuisance odors? What mitigations are proposed?
83. How will the applicant assess project site light and glare to adjacent properties?
84. Will the project affect or be affected by dangerous intersections?
85. Has the State Historic Preservation Office (SHPO) been notified of the project and requested to provide comments?
86. Are there usual and customary recreational areas in the vicinity of the project site that are currently utilized by the adjacent community, and if so, how will the users of these recreation areas be affected by the project?
87. Is the project compatible with surround areas in terms of building density?
88. How will the applicant assure the local government and surrounding community that costs associated with increased water supply needs of the project will be fully accommodated by the applicant, and not a burden imposed upon local governments, local water districts or providers, or local property owners?
89. Is there paved access to the project site?
90. Will the project be affected by wind/sandstorm concerns?
91. Are there established biking and pedestrian pathways at or near the vicinity of the project site, and if so, what mitigations does the applicant propose to ensure the safety and non-interference of use of these public pathways?
92. Will the proposed project affect a sole water source or other aquifer?
93. How will any proposed private transportation systems impact and/or coordinate with public transportation systems currently in operation?
94. How will the applicant mitigate heavily traveled highways, adjacent and onsite road systems?
95. Please respond to following issue: The pollution from such added traffic will damage air quality in the area, and exacerbate unhealthy conditions. Sullivan County residents already suffer from a disproportionate and growing number of respiratory problems. There is no justification for subjecting such individuals to a relatively sudden and serious deterioration in air quality and resulting threat to their health.
96. What mitigations are proposed for water supplies of the proposed project that will not affect or will ameliorate water supplies of adjacent residential neighborhoods businesses, and other land uses currently receiving adequate water?
97. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
98. Is there indication of cross-lot runoff, swales, drainage flows on the property?
99. What law enforcement and public safety plans have been developed for the proposed project that will be commensurate with area law enforcement and public safety needs projected over a ten year period?
100. How will the applicant mitigate power generators?

101. Are there any unresolved hazardous materials issues at the proposed site that could the state, county or a municipality to be determined to be potential responsible party?
102. Will the project influence or be unduly influenced by incompatible land uses?
103. Are there unusual conditions on the site?
104. Are there drainage ways streams, rivers, or coastlines on or near the project site?
105. Does the property's area of potential effects include an historic district or property?
106. Is the project located within a coastal barrier designated on a current FEMA flood map or Department of Interior coastal barrier resources map?
107. Are there visual indications of filled ground? What assurances has the applicant developed to ensure soil stability for construction footprint and impervious surfaces?
108. What mitigations (i.e. traffic signals, traffic security personnel, shuttle services) are proposed to ameliorate significant traffic increase and activity associated with the proposed project? What is this cost and how will it be accommodated without affecting costs of adjacent local governments?
109. Has a traffic study calculated existing road maintenance requires with anticipated road maintenance or road expansion needs to accommodate the project? What are project costs associated with this subject?
110. Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the vicinity of the project site?
111. Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?
112. Have structural borings or dynamic soil analysis been requested in association with geological studies?
113. How will the applicant contribute to a stable and affordable housing stock supply consistent with the applicant's proposed workforce housing needs?
114. For each alternative site considered by the applicant, please describe the level of analysis conducted, and explain why the specific site was rejected, in preference for the proposed site of the applicant.
115. For each alternative site considered by the applicant, please identify the process and professionals that made determinations that have ultimately assessed the proposed site as the environmentally preferred site.
116. Will the project be impacted by poisonous plants, insects or animals onsite?
117. Will private transportation systems be required and/or implemented in association with the project?
118. How will the applicant ensure that increased capacity needs of public transportation will be accommodated at the sole expense of the applicant and not the adjacent local governments?
119. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
120. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
121. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
122. How will the applicant mitigate large parking facilities (1,000 or more cars)?
123. Is the project located in a predominantly minority or low-income neighborhood?
124. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of hard (i.e., robbery, vandalism, assault) and soft (white-collar larceny, embezzlement, fraud) crime traditionally associated with the gambling industry entrenching into a community previously unaffected by gambling?
125. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
126. How will activity at the proposed site impact resources of local, county and state law enforcement resources, over a projected ten-year period?
127. What is the proximity of public schools to the project site?
128. Are there waste materials or containers on site?

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 18 2005

Ms. Gina Molinet
PO Box 321
Livingston Manor, NY 12758

Dear Ms. Molinet:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You provided a form letter with a place to add your name and address, listing 128 questions about the project. We are not answering each question by number since most are clearly addressed in the DEIS. Please read the DEIS where you will find your questions answered. We are enclosing a copy of the DEIS CD ROM for your convenience. The Adobe Acrobat version can be searched for key words to assist you in your quest for more knowledge about the project. If you still find unanswered questions, please consider that such questions may not be related to the project's potential impact. Each Federal agency is required by the National Environmental Policy Act to establish its own standards and requirements to fulfill the law. This DEIS meets the standards established by the Bureau of Indian Affairs and analyzes the relevant potential impacts required by the Bureau.

Your questions appear to be centered around a few primary areas so we will attempt to help you understand the controls and mitigations that are designed to minimize impacts in these areas.

The project site was subjected to an Environmental Site Assessment (ESA) according to standards established by the American Society of Testing Materials (ASTM). There were numerous environmental concerns resulting from previous uses of the property where we required correction. The automobile salvage yard and mining operation have since been remediated to standards established by the State of New York and verified by a Federal environmental professional. As trust property, the site would be subject to all environmental regulations established by the Environmental Protection Agency (EPA). Potential operational environmental impacts are therefore subject to EPA control.

Since the potential impacts are projections into the future, where there is no available data, our projections may be limited, but we can still have controls built into the process. As an example, the potential impacts of five casinos are not known at this time but controls are built into the process to provide mitigation for such unknown impacts. The Bureau of Indian Affairs has only received applications from three tribes, so projecting impact beyond the known data would be pure speculation. We must consider potential impacts, but we also must consider whether the

project provides the means of mitigating potential impacts. By building controls into the process, even such unknowns can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues that you are concerned about, such as crime and other social issues. Each tribe also has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

RECEIVED
MAR 24 2005
By

From: Judith Merone
24 Marguerite Lane
Mountain Dale, NY 12763

Date: March 10, 2005

To: Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

Please find enclosed substantive issues regarding the Draft Environmental Impact Statement of the proposed Stockbridge-Munsee casino in the Town of Thompson in Sullivan County, New York. I respectfully request that all issues be answered and resolved in the Final Environmental Impact Statement with a copy of the responses sent to me. **Please respond by issue number.**

Thank you.

Respectfully,

Judith Merone

enc.

Main concerns:

1. Cost to taxpayers for increased: water, sewer, law enforcement
2. What taxes they (casinos) would pay + to whom
3. Change of country setting to busy, sprawling suburbia

1. Is the project within 2 and 1/2 miles from the end of a runway at a military airstrip?
2. Please respond to following issue: Governor Pataki himself, the chief proponent of the plan to put five casinos in the Sullivan-Route 17 corridor, has recognized the need for a cumulative impact assessment. In officially commenting on the Stockbridge-Munsee casino the Governor has specifically advised the BIA to conduct such an assessment before approving any of the casinos.
3. How will the applicant contribute to a stable and affordable housing stock supply consistent with the applicant's proposed workforce housing needs?
4. Is there indication of cross-lot runoff, swales, drainage flows on the property?
5. What procedures or guidelines will be developed that allows community members or adjacent property owners to formally complain about inordinate or unanticipated noise?
6. If the site is not currently listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list, should it be? If not, why not?
7. Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the vicinity of the project site?
8. Please identify by assessor parcel number and physical street address or location, each and all sites considered by the applicant, prior to selecting the subject site as the preferred site.
9. Will private transportation systems be required and/or implemented in association with the project?
10. Are there current sanitary sewers and waste water disposal systems serving the site?
11. Are there ponds, marshes, bogs, swamps or other wetlands on or near the site?
12. Are there established biking and pedestrian pathways at or near the vicinity of the project site, and if so, what mitigations does the applicant propose to ensure the safety and non-interference of use of these public pathways?
13. What are the previous uses of this site and what residual impacts affect the project or are affected by the project?
14. Is the proposed building footprint located in a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?
15. How will the applicant ensure that increased capacity needs of public transportation will be accommodated at the sole expense of the applicant and not the adjacent local governments?
16. Will the project influence or be unduly influenced by inadequate off-street parking?
17. How will the project impact existing hotels, motels, B&Bs RV facilities and other overnight tourism lodging facilities?
18. Does the property's area of potential effects include an historic district or property?
19. What is the total anticipated impervious surface coverage estimated for the proposed project?
20. Please project estimates of revenue associated with each gambling, commercial or retail site and equate that to an equivalent sales tax loss of disposable income to adjacent local communities.
21. Has the applicant studied the current housing stock and occupancy rates of adjacent communities?
22. Has the applicant developed a public safety evacuation and rescue plan for customers, and does the plan accommodate projected customers based upon high or low attendance that is associated with hours of operations, weekdays, holidays, and special events?
23. Are there unprotected water bodies on site?
24. What additional sanitary sewer and wastewater disposal systems are required and how will expansions of such infrastructure impact existing, connecting infrastructure in terms of capacity and annual cost?
25. Have structural borings or dynamic soil analysis been requested in association with geological studies?
26. Has a traffic study been developed for the proposed project that is specific to this site and this project, and not just generic to the proposed industry?
27. Are there active rills and gullies on the project site?
28. Please respond to following issue: It is unfair and wrong to at once transform the traffic in the region from generally clear with some limitations during rush hour, to generally busy and congested and overloaded during peak hours. Mobility would be significantly infringed, and those who disproportionately rely on automobiles, such as businesses, would be badly damaged.
29. What is the projected weekly, daily and hourly traffic count for the site, and how does this translate to an annual traffic increase that impacts adjacent properties and neighborhoods?
30. Is the project compatible with surround areas in terms of building density?
31. Please respond to following issue: The DEIS fails to take any account of one of the most significant impacts: the introduction and prominence of casino gambling on central-southeastern Sullivan. There is no assessment of the impact on the social fabric. This is absurd since arguably no commercial activity will have as significant an impact on community character as casino gambling, particularly five casinos. No mitigation is even arguably complete unless the social support for gambling impacts on the community is fully funded.
32. Please respond to following issue: Overall, the plan to site five casinos in the Route 17 corridor is an affront and danger to the existing communities. It is ironic that the remedy for their supposed problem - economic stagnation - is a wholly disproportionate influx of nuisances including casino gambling and induced growth, pollution traffic and social ills.

33. How will the applicant assure the local government and surrounding community that costs associated with increased water supply needs of the project will be fully accommodated by the applicant, and not a burden imposed upon local governments, local water districts or providers, or local property owners?
34. Are there visual indications of filled ground? What assurances has the applicant developed to ensure soil stability for construction footprint and impervious surfaces?
35. How will the applicant mitigate heavily traveled highways, adjacent and onsite road systems?
36. Will the project influence or be unduly influenced by postponed maintenance?
37. Is the project located within a coastal barrier designated on a current FEMA flood map or Department of Interior coastal barrier resources map?
38. How will a project workforce impact local housing over-crowding and code enforcement conditions that might impact adjacent communities, projected over the next ten years?
39. Is the property listed on or eligible for listing on the National Register of Historic Places?
40. Are there unusual conditions on the site?
41. Will the project influence or be unduly influenced by building deterioration?
42. Does the project comply with Executive Order (E.O.) 11990, Protection of Wetlands, which discourages federal funding of new construction or filling in wetlands and compliance is required with the wetlands decision-making process (§ 55.20 of 24 CFR Part 55)?
43. Please respond to following issue: Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed Indian territory, and the placement of casinos is foreign and offensive to the community. There is no basis for this wholesale intrusion into the community mores and ethics.
44. How will any proposed private transportation systems impact and/or coordinate with public transportation systems currently in operation?
45. Is there paved access to the project site?
46. Is the project compatible with surround areas in terms of land use?
47. Are there proposed air pollution generators associated with the proposed project?
48. Is the project within 3,000 feet from the end of a runway at a civil airport?
49. How will the applicant mitigate incinerators?
50. How will the project impact existing public transportation facilities of the community?
51. What mitigations are proposed to accommodate traffic generated by the proposed project with existing traffic counts and flows at and adjacent to the project site?
52. Please respond to following issue: The pollution from such added traffic will damage air quality in the area, and exacerbate unhealthy conditions. Sullivan County residents already suffer from a disproportionate and growing number of respiratory problems. There is no justification for subjecting such individuals to a relatively sudden and serious deterioration in air quality and resulting threat to their health.
53. Has a noise contours map been developed for the proposed project and does it show Day-night average sound level (abbreviated as DNL)?
54. What mitigations are proposed for water supplies of the proposed project that will not affect or will ameliorate water supplies of adjacent residential neighborhoods businesses, and other land uses currently receiving adequate water?
55. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
56. Are there existing or abandoned transformers, fill/vent pipes, pipelines, drainage structures?
57. Is the project compatible with surround areas in terms of height, bulk, and mass?
58. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
59. Will the project influence or be unduly influenced by incompatible land uses?
60. Will the project be affected by wind/sandstorm concerns?
61. Will the project affect or be affected by nuisance odors? What mitigations are proposed?
62. Are there usual and customary children's play areas within the vicinity of the project site?
63. Describe the site elevations and any accommodations required for significant slopes.
64. Does the project site or neighborhood suffer from disproportionately adverse environmental effects on minority and low-income populations relative to the community-at-large?
65. Is there any indication of currently distressed vegetation?
66. Is the site located within 3,000 feet of a toxic or solid waste landfill site?
67. Will the proposed project affect a sole water source or other aquifer?
68. Please identify an anticipated customer and weekly/daily/hourly traffic count associated with each commercial or ancillary use planned in the near-term and long-term use of the project site.
69. For each alternative site considered by the applicant, please describe the level of analysis conducted, and explain why the specific site was rejected, in preference for the proposed site of the applicant.

70. What cost mitigations is the applicant proposing to offset impacted and increased law enforcement personnel needs of agencies serving the proposed project?
71. What law enforcement and public safety plans have been developed for the proposed project that will be commensurate with area law enforcement and public safety needs projected over a ten year period?
72. Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?
73. Please describe whether or how the applicant proposes to hire a local workforce, and how this potential transition of workers from current employment to future employment with the applicant might impact the local workforce?
74. Please respond to following issue: The DEIS fails to account for any of the environmental or social impacts of five casinos. The people deserve and the law demands a full, competent assessment of cumulative impact given Governor Pataki's plan to imposing such a burden on (indeed sacrifice) Sullivan County to mitigate state budget problems and avoid the land claim litigation.
75. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
76. Does the applicant anticipate hiring a workforce from outside of the immediate community? If so, from what sources will the applicant recruit its workforce?
77. Has a traffic study accommodated existing traffic counts experienced at the project site, and then projected appropriate increased traffic counts based upon days of the week, hours of the day or night, and special events?
78. Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1,000 feet), or railroads (within 3,000 feet)?
79. Has a traffic study calculated existing road maintenance requires with anticipated road maintenance or road expansion needs to accommodate the project? What are project costs associated with this subject?
80. Will the project be impacted by poisonous plants, insects or animals onsite?
81. Will the project be affected by seismic faults, or fractures?
82. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
83. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of an Indian gambling casino upon the foreseeable disposable income loss to adjacent commercial, retail, restaurant, recreational and lodging facilities, over the next ten years?
84. Does the project comply with 24 CFR 51, Subpart B that requires a Noise Assessment for proposed new construction?
85. Is the property located within or directly adjacent to an historic district?
86. Have soil reports or studies or borings been made for the project site or the area? If so, what are the findings of soil studies accomplished?
87. Will the project affect or be affected by dangerous intersections?
88. How will the applicant mitigate power generators?
89. Does the proposed project comply with public all safety requirements for fire safety, in accordance with state and federal law?
90. Will the project affect or be affected by hazardous streets?
91. Will the proposed project increase a need for onsite or offsite daycare facilities for children, and how will the applicant accommodate such need, inclusive of safety of children to and from day care facilities?
92. How will activity at the proposed site impact resources of local, county and state law enforcement resources, over a projected ten-year period?
93. Do public school buses travel the road systems associated with the project site, and if so, how will traffic mitigations proposed by the applicant ensure safe and timely schedules for public school transportation needs?
94. How will a project workforce impact local community housing needs, projected over the next ten years?
95. How will the applicant assess project site light and glare to adjacent properties?
96. Is the site currently served by an adequate and acceptable water supply?
97. How will the applicant mitigate large parking facilities (1,000 or more cars)?
98. Are there drainage ways streams, rivers, or coastlines on or near the project site?
99. Are there waste materials or containers on site?
100. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
101. What mitigations in terms of personnel, monitoring systems, training and counseling programs is the applicant proposing to minimize the impact of anticipated crime associated with the gambling industry?
102. Are other natural resources visible on site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project?
103. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of hard (i.e., robbery, vandalism, assault) and soft (white-collar larceny, embezzlement, fraud) crime traditionally associated with the gambling industry entrenching into a community previously unaffected by gambling?
104. Will the project influence or be unduly influenced by obsolete public facilities?

105. Will the project influence or be unduly influenced by transition of land uses?
106. Does the applicant propose to handle or sell explosives (fireworks) or propose to store fire-prone materials such as liquid propane, gasoline, or other storage tanks above or below ground?
107. Are there usual and customary recreational areas in the vicinity of the project site that are currently utilized by the adjacent community, and if so, how will the users of these recreation areas be affected by the project?
108. Has the State Historic Preservation Office (SHPO) been notified of the project and requested to provide comments?
109. What percentage of the project site is proposed for impervious surface, and how does this surface impact existing elements such as a sole water source or other aquifer?
110. If the applicant proposed to construct hotel or motel facilities at or adjacent to the proposed project, please calculate the estimated impact of business to existing tourist facilities, and the projected hotel occupancy tax loss to adjacent local governments, over the next ten years.
111. What is the proximity of public schools to the project site?
112. What mitigations will ensure that onsite and offsite light and glare will comport with adjacent local government light, glare and signage requirements?
113. How will current sanitary sewers and waste water disposal systems be impacted by the proposed project, and at what cost?
114. What mitigations (i.e. traffic signals, traffic security personnel, shuttle services) are proposed to ameliorate significant traffic increase and activity associated with the proposed project? What is this cost and how will it be accommodated without affecting costs of adjacent local governments?
115. What procedures are proposed for adjacent neighbors who wish to legitimately complain of excessive light or glare?
116. For each alternative site considered by the applicant, please identify the process and professionals that made determinations that have ultimately assessed the proposed site as the environmentally preferred site.
117. Does the project proposal include a full inventory and assessment of all hazardous materials associated with the project?
118. Is the project compatible with surround areas in terms of building type (low/high-rise)?
119. Is there evidence of slope erosion or unstable slope conditions on or near the site?
120. Is the project located within a floodplain designated on a current FEMA flood map (24 CFR Part 55)?
121. Are there any unresolved hazardous materials issues at the proposed site that could the state, county or a municipality to be determined to be potential responsible party?
122. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
123. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
124. Is the project located in a predominantly minority or low-income neighborhood?
125. Are there pools of liquid or soil staining, chemical spills, abandoned machinery, cars, refrigerators, etc.?
126. Please respond to following issue: There is no analysis of induced growth, contrary to federal requirements, the public interest and common sense. It is not possible to rationally assess the impacts of the casinos without at least a general review of the buildout which will accompany it. Simply relying on local zoning is neither analysis nor mitigation of these growth-sprawl issues.
127. Were underground storage tanks ever located on the site? If so, provide documentation that all underground storage tanks have been identified, located and appropriately removed by qualified professionals, using current techniques in compliance with 40 CFR Part 280.
128. Are there other hazardous terrain features?

law enforcement personnel
water/sewer
traffic
cost
impact of casinos on rural aspect of SC

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Ms. Judith Merone
24 Marguerite Lane
Mountain Dale, NY 12763

Dear Ms. Merone:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You provided a form letter with a place to add your name and address, listing 128 questions about the project. We received numerous copies of this form letter with the list in various order. We are not answering each question by number since most are clearly addressed in the DEIS. Other questions do not pertain to any potential impact of the project. Others cannot be answered because the information is not known, such as the potential impact of five casinos. We only have applications from three Tribes. Without having complete data from the other two Tribes, it is not possible to make a complete assessment for five casinos. It is clear that the person who prepared the form letter did not read the DEIS. Their actions and intentions also do not appear consistent with the intent and purpose of the public comment period for the DEIS. We request that anyone who chooses to provide public comments for such projects keep the comments pertinent to the project and pertinent to the DEIS. Each Federal agency is required by the National Environmental Policy Act to establish its own standards and requirements to fulfill the law. This DEIS meets the standards established by the Bureau of Indian Affairs and analyzes the relevant potential impacts required by the Bureau.

These form letter comments have been assessed and considered. They do not warrant further agency response because, as previously stated, the information that answers these questions is (1) not available, or (2) clearly stated in the DEIS and/or (3) not pertinent to any reasonably foreseeable significant adverse effects that are a result of the project.

You also added hand written comments asking about taxes and changes in community character. The taxes that residents pay for community services are unrelated to the presence of casinos. Studies show that the induced regional growth and increased commerce provides increases in local and state tax revenues without raising taxes. The Tribe is sensitive to the needs of the local community and is making every effort to display a good neighbor policy. Indian trust property is tax exempt, but any income lost to local and state governments is mitigated through mitigation agreements. The Indian Gaming Regulatory Act (IGRA) disallows payments in lieu of taxes, but allows mitigation payments that are intended to directly address the impacts. The intention under IGRA is for the government agency that receives these payments to use them to do the roadwork, hire the personnel, or otherwise support the programs that may be impacted.

Mitigation payments to the State through the Tribal-State compact are intended to cover issues such as Route 17 traffic and related air quality deterioration. The Tribe has a mitigation agreement with local government that annually provides 15 million dollars to mitigate any perceived impact that the casino may have. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions, local roads and increased load to community services and police that may be associated with the casino. Regional growth also includes an inherent means of mitigation since any new resident that moves to the region would also pay taxes that support local services, just like everyone else. That distributes the cost of services to a greater number of people. The history of the region shows that it has been able to support a much greater number of people than it currently does.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Robert K Lampe

ACTING Director, Eastern Region

RECEIVED
MAR 17 2005
By

From: 85 Bushville Swan Lake Rd
Ferndale NY 12734

Date: March 10, 2005

To: Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

Please find enclosed substantive issues regarding the Draft Environmental Impact Statement of the proposed Stockbridge-Munsee casino in the Town of Thompson in Sullivan County, New York. I respectfully request that all issues be answered and resolved in the Final Environmental Impact Statement with a copy of the responses sent to me. **Please respond by issue number.**

Thank you.

Respectfully,

Arleen Krasnoff

Arleen Krasnoff

enc.

1. Is the project within 2 and 1/2 miles from the end of a runway at a military airstrip?
2. Please respond to following issue: Governor Pataki himself, the chief proponent of the plan to put five casinos in the Sullivan-Route 17 corridor, has recognized the need for a cumulative impact assessment. In officially commenting on the Stockbridge-Munsee casino the Governor has specifically advised the BIA to conduct such an assessment before approving any of the casinos.
3. How will the applicant contribute to a stable and affordable housing stock supply consistent with the applicant's proposed workforce housing needs?
4. Is there indication of cross-lot runoff, swales, drainage flows on the property?
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6. If the site is not currently listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list, should it be? If not, why not?
7. Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the vicinity of the project site?
8. Please identify by assessor parcel number and physical street address or location, each and all sites considered by the applicant, prior to selecting the subject site as the preferred site.
9. Will private transportation systems be required and/or implemented in association with the project?
10. Are there current sanitary sewers and waste water disposal systems serving the site?
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12. Are there established biking and pedestrian pathways at or near the vicinity of the project site, and if so, what mitigations does the applicant propose to ensure the safety and non-interference of use of these public pathways?
13. What are the previous uses of this site and what residual impacts affect the project or are affected by the project?
14. Is the proposed building footprint located in a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?
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18. Does the property's area of potential effects include an historic district or property?
19. What is the total anticipated impervious surface coverage estimated for the proposed project?
20. Please project estimates of revenue associated with each gambling, commercial or retail site and equate that to an equivalent sales tax loss of disposable income to adjacent local communities.
21. Has the applicant studied the current housing stock and occupancy rates of adjacent communities?
22. Has the applicant developed a public safety evacuation and rescue plan for customers, and does the plan accommodate projected customers based upon high or low attendance that is associated with hours of operations, weekdays, holidays, and special events?
23. Are there unprotected water bodies on site?
24. What additional sanitary sewer and wastewater disposal systems are required and how will expansions of such infrastructure impact existing, connecting infrastructure in terms of capacity and annual cost?
25. Have structural borings or dynamic soil analysis been requested in association with geological studies?
26. Has a traffic study been developed for the proposed project that is specific to this site and this project, and not just generic to the proposed industry?
27. Are there active rills and gullies on the project site?
28. Please respond to following issue: It is unfair and wrong to at once transform the traffic in the region from generally clear with some limitations during rush hour, to generally busy and congested and overloaded during peak hours. Mobility would be significantly infringed, and those who disproportionately rely on automobiles, such as businesses, would be badly damaged.
29. What is the projected weekly, daily and hourly traffic count for the site, and how does this translate to an annual traffic increase that impacts adjacent properties and neighborhoods?
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33. How will the applicant assure the local government and surrounding community that costs associated with increased water supply needs of the project will be fully accommodated by the applicant, and not a burden imposed upon local governments, local water districts or providers, or local property owners?
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38. How will a project workforce impact local housing over-crowding and code enforcement conditions that might impact adjacent communities, projected over the next ten years?
39. Is the property listed on or eligible for listing on the National Register of Historic Places?
40. Are there unusual conditions on the site?
41. Will the project influence or be unduly influenced by building deterioration?
42. Does the project comply with Executive Order (E.O.) 11990, Protection of Wetlands, which discourages federal funding of new construction or filling in wetlands and compliance is required with the wetlands decision-making process (§ 55.20 of 24 CFR Part 55)?
43. Please respond to following issue: Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed Indian territory, and the placement of casinos is foreign and offensive to the community. There is no basis for this wholesale intrusion into the community mores and ethics.
44. How will any proposed private transportation systems impact and/or coordinate with public transportation systems currently in operation?
45. Is there paved access to the project site?
46. Is the project compatible with surround areas in terms of land use?
47. Are there proposed air pollution generators associated with the proposed project?
48. Is the project within 3,000 feet from the end of a runway at a civil airport?
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53. Has a noise contours map been developed for the proposed project and does it show Day-night average sound level (abbreviated as DNL)?
54. What mitigations are proposed for water supplies of the proposed project that will not affect or will ameliorate water supplies of adjacent residential neighborhoods businesses, and other land uses currently receiving adequate water?
55. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
56. Are there existing or abandoned transformers, fill/vent pipes, pipelines, drainage structures?
57. Is the project compatible with surround areas in terms of height, bulk, and mass?
58. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
59. Will the project influence or be unduly influenced by incompatible land uses?
60. Will the project be affected by wind/sandstorm concerns?
61. Will the project affect or be affected by nuisance odors? What mitigations are proposed?
62. Are there usual and customary children's play areas within the vicinity of the project site?
63. Describe the site elevations and any accommodations required for significant slopes.
64. Does the project site or neighborhood suffer from disproportionately adverse environmental effects on minority and low-income populations relative to the community-at-large?
65. Is there any indication of currently distressed vegetation?
66. Is the site located within 3,000 feet of a toxic or solid waste landfill site?
67. Will the proposed project affect a sole water source or other aquifer?
68. Please identify an anticipated customer and weekly/daily/hourly traffic count associated with each commercial or ancillary use planned in the near-term and long-term use of the project site.
69. For each alternative site considered by the applicant, please describe the level of analysis conducted, and explain why the specific site was rejected, in preference for the proposed site of the applicant.

70. What cost mitigations is the applicant proposing to offset impacted and increased law enforcement personnel needs of agencies serving the proposed project?
71. What law enforcement and public safety plans have been developed for the proposed project that will be commensurate with area law enforcement and public safety needs projected over a ten year period?
72. Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?
73. Please describe whether or how the applicant proposes to hire a local workforce, and how this potential transition of workers from current employment to future employment with the applicant might impact the local workforce?
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75. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
76. Does the applicant anticipate hiring a workforce from outside of the immediate community? If so, from what sources will the applicant recruit its workforce?
77. Has a traffic study accommodated existing traffic counts experienced at the project site, and then projected appropriate increased traffic counts based upon days of the week, hours of the day or night, and special events?
78. Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1,000 feet), or railroads (within 3,000 feet)?
79. Has a traffic study calculated existing road maintenance requires with anticipated road maintenance or road expansion needs to accommodate the project? What are project costs associated with this subject?
80. Will the project be impacted by poisonous plants, insects or animals onsite?
81. Will the project be affected by seismic faults, or fractures?
82. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
83. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of an Indian gambling casino upon the foreseeable disposable income loss to adjacent commercial, retail, restaurant, recreational and lodging facilities, over the next ten years?
84. Does the project comply with 24 CFR 51, Subpart B that requires a Noise Assessment for proposed new construction?
85. Is the property located within or directly adjacent to an historic district?
86. Have soil reports or studies or borings been made for the project site or the area? If so, what are the findings of soil studies accomplished?
87. Will the project affect or be affected by dangerous intersections?
88. How will the applicant mitigate power generators?
89. Does the proposed project comply with public all safety requirements for fire safety, in accordance with state and federal law?
90. Will the project affect or be affected by hazardous streets?
91. Will the proposed project increase a need for onsite or offsite daycare facilities for children, and how will the applicant accommodate such need, inclusive of safety of children to and from day care facilities?
92. How will activity at the proposed site impact resources of local, county and state law enforcement resources, over a projected ten-year period?
93. Do public school buses travel the road systems associated with the project site, and if so, how will traffic mitigations proposed by the applicant ensure safe and timely schedules for public school transportation needs?
94. How will a project workforce impact local community housing needs, projected over the next ten years?
95. How will the applicant assess project site light and glare to adjacent properties?
96. Is the site currently served by an adequate and acceptable water supply?
97. How will the applicant mitigate large parking facilities (1,000 or more cars)?
98. Are there drainage ways streams, rivers, or coastlines on or near the project site?
99. Are there waste materials or containers on site?
100. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
101. What mitigations in terms of personnel, monitoring systems, training and counseling programs is the applicant proposing to minimize the impact of anticipated crime associated with the gambling industry?
102. Are other natural resources visible on site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project?
103. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of hard (i.e., robbery, vandalism, assault) and soft (white-collar larceny, embezzlement, fraud) crime traditionally associated with the gambling industry entrenching into a community previously unaffected by gambling?
104. Will the project influence or be unduly influenced by obsolete public facilities?

105. Will the project influence or be unduly influenced by transition of land uses?
106. Does the applicant propose to handle or sell explosives (fireworks) or propose to store fire-prone materials such as liquid propane, gasoline, or other storage tanks above or below ground?
107. Are there usual and customary recreational areas in the vicinity of the project site that are currently utilized by the adjacent community, and if so, how will the users of these recreation areas be affected by the project?
108. Has the State Historic Preservation Office (SHPO) been notified of the project and requested to provide comments?
109. What percentage of the project site is proposed for impervious surface, and how does this surface impact existing elements such as a sole water source or other aquifer?
110. If the applicant proposed to construct hotel or motel facilities at or adjacent to the proposed project, please calculate the estimated impact of business to existing tourist facilities, and the projected hotel occupancy tax loss to adjacent local governments, over the next ten years.
111. What is the proximity of public schools to the project site?
112. What mitigations will ensure that onsite and offsite light and glare will comport with adjacent local government light, glare and signage requirements?
113. How will current sanitary sewers and waste water disposal systems be impacted by the proposed project, and at what cost?
114. What mitigations (i.e. traffic signals, traffic security personnel, shuttle services) are proposed to ameliorate significant traffic increase and activity associated with the proposed project? What is this cost and how will it be accommodated without affecting costs of adjacent local governments?
115. What procedures are proposed for adjacent neighbors who wish to legitimately complain of excessive light or glare?
116. For each alternative site considered by the applicant, please identify the process and professionals that made determinations that have ultimately assessed the proposed site as the environmentally preferred site.
117. Does the project proposal include a full inventory and assessment of all hazardous materials associated with the project?
118. Is the project compatible with surround areas in terms of building type (low/high-rise)?
119. Is there evidence of slope erosion or unstable slope conditions on or near the site?
120. Is the project located within a floodplain designated on a current FEMA flood map (24 CFR Part 55)?
121. Are there any unresolved hazardous materials issues at the proposed site that could the state, county or a municipality to be determined to be potential responsible party?
122. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
123. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
124. Is the project located in a predominantly minority or low-income neighborhood?
125. Are there pools of liquid or soil staining, chemical spills, abandoned machinery, cars, refrigerators, etc.?
126. Please respond to following issue: There is no analysis of induced growth, contrary to federal requirements, the public interest and common sense. It is not possible to rationally assess the impacts of the casinos without at least a general review of the buildout which will accompany it. Simply relying on local zoning is neither analysis nor mitigation of these growth-sprawl issues.
127. Were underground storage tanks ever located on the site? If so, provide documentation that all underground storage tanks have been identified, located and appropriately removed by qualified professionals, using current techniques in compliance with 40 CFR Part 280.
128. Are there other hazardous terrain features?

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 18 2005

Ms. Arleen Krasnoff
85 Bushville Swan Lake Road
Ferndale, NY 12734

Dear Ms. Krasnoff:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You provided a form letter with a place to add your name and address, listing 128 questions about the project. We are not answering each question by number since most are clearly addressed in the DEIS. Please read the DEIS where you will find your questions answered. We are enclosing a copy of the DEIS CD ROM for your convenience. The Adobe Acrobat version can be searched for key words to assist you in your quest for more knowledge about the project. If you still find unanswered questions, please consider that such questions may not be related to the project's potential impact. Each Federal agency is required by the National Environmental Policy Act to establish its own standards and requirements to fulfill the law. This DEIS meets the standards established by the Bureau of Indian Affairs and analyzes the relevant potential impacts required by the Bureau.

Your questions appear to be centered around a few primary areas so we will attempt to help you understand the controls and mitigations that are designed to minimize impacts in these areas.

The project site was subjected to an Environmental Site Assessment (ESA) according to standards established by the American Society of Testing Materials (ASTM). There were numerous environmental concerns resulting from previous uses of the property where we required correction. The automobile salvage yard and mining operation have since been remediated to standards established by the State of New York and verified by a Federal environmental professional. As trust property, the site would be subject to all environmental regulations established by the Environmental Protection Agency (EPA). Potential operational environmental impacts are therefore subject to EPA control.

Since the potential impacts are projections into the future, where there is no available data, our projections may be limited, but we can still have controls built into the process. As an example, the potential impacts of five casinos are not known at this time but controls are built into the process to provide mitigation for such unknown impacts. The Bureau of Indian Affairs has only received applications from three tribes, so projecting impact beyond the known data would be pure speculation. We must consider potential impacts, but we also must consider whether the

project provides the means of mitigating potential impacts. By building controls into the process, even such unknowns can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues that you are concerned about, such as crime and other social issues. Each tribe also has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

RECEIVED
MAR 14 2005
By

From: 1714 27 77
Narrowsburg NY 12764

Date: March 10, 2005

To: Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

Please find enclosed substantive issues regarding the Draft Environmental Impact Statement of the proposed Stockbridge-Munsee casino in the Town of Thompson in Sullivan County, New York. I respectfully request that all issues be answered and resolved in the Final Environmental Impact Statement with a copy of the responses sent to me. **Please respond by issue number.**

Thank you.

Respectfully,

Jane J Hallorad
JANE J. HALLORAN

enc.

From: _____

_____

_____

Date: March 10, 2005

To: Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

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98. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
99. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
100. Are there existing or abandoned transformers, fill/vent pipes, pipelines, drainage structures?
101. What additional sanitary sewer and wastewater disposal systems are required and how will expansions of such infrastructure impact existing, connecting infrastructure in terms of capacity and annual cost?

102. For each alternative site considered by the applicant, please describe the level of analysis conducted, and explain why the specific site was rejected, in preference for the proposed site of the applicant.
103. Is the project compatible with surround areas in terms of building type (low/high-rise)?
104. Please respond to following issue: There is no analysis of induced growth, contrary to federal requirements, the public interest and common sense. It is not possible to rationally assess the impacts of the casinos without at least a general review of the buildout which will accompany it. Simply relying on local zoning is neither analysis nor mitigation of these growth-sprawl issues.
105. Is the project compatible with surround areas in terms of land use?
106. Are there drainage ways streams, rivers, or coastlines on or near the project site?
107. Are there current sanitary sewers and waste water disposal systems serving the site?
108. What mitigations will ensure that onsite and offsite light and glare will comport with adjacent local government light, glare and signage requirements?
109. Will the project influence or be unduly influenced by inadequate off-street parking?
110. Do public school buses travel the road systems associated with the project site, and if so, how will traffic mitigations proposed by the applicant ensure safe and timely schedules for public school transportation needs?
111. Is there evidence of slope erosion or unstable slope conditions on or near the site?
112. Describe the site elevations and any accommodations required for significant slopes.
113. How will current sanitary sewers and waste water disposal systems be impacted by the proposed project, and at what cost?
114. Will the project affect or be affected by dangerous intersections?
115. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
116. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
117. Has a traffic study been developed for the proposed project that is specific to this site and this project, and not just generic to the proposed industry?
118. Are there proposed air pollution generators associated with the proposed project?
119. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
120. Will the project be impacted by poisonous plants, insects or animals onsite?
121. Will the project be affected by seismic faults, or fractures?
122. Please respond to following issue: Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed Indian territory, and the placement of casinos is foreign and offensive to the community. There is no basis for this wholesale intrusion into the community mores and ethics.
123. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
124. Please respond to following issue: Governor Pataki himself, the chief proponent of the plan to put five casinos in the Sullivan-Route 17 corridor, has recognized the need for a cumulative impact assessment. In officially commenting on the Stockbridge-Munsee casino the Governor has specifically advised the BIA to conduct such an assessment before approving any of the casinos.
125. Is the project located in a predominantly minority or low-income neighborhood?
126. Were underground storage tanks ever located on the site? If so, provide documentation that all underground storage tanks have been identified, located and appropriately removed by qualified professionals, using current techniques in compliance with 40 CFR Part 280.
127. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
128. For each alternative site considered by the applicant, please identify the process and professionals that made determinations that have ultimately assessed the proposed site as the environmentally preferred site.

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 17 2005

Mr. James J. Halloran
7714 Route 97
Narrowsburg, NY 12764

Dear Mr. Halloran:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You provided a form letter with a place to add your name and address, listing 128 questions about the project. We are not answering each question by number since most are clearly addressed in the DEIS. Please read the DEIS where you will find your questions answered. We are enclosing a copy of the DEIS CD ROM for your convenience. The Adobe Acrobat version can be searched for key words to assist you in your quest for more knowledge about the project. If you still find unanswered questions, please consider that such questions may not be related to the project's potential impact. Each Federal agency is required by the National Environmental Policy Act to establish its own standards and requirements to fulfill the law. This DEIS meets the standards established by the Bureau of Indian Affairs and analyzes the relevant potential impacts required by the Bureau.

Your questions appear to be centered around a few primary areas so we will attempt to help you understand the controls and mitigations that are designed to minimize impacts in these areas.

The project site was subjected to an Environmental Site Assessment (ESA) according to standards established by the American Society of Testing Materials (ASTM). There were numerous environmental concerns resulting from previous uses of the property where we required correction. The automobile salvage yard and mining operation have since been remediated to standards established by the State of New York and verified by a Federal environmental professional. As trust property, the site would be subject to all environmental regulations established by the Environmental Protection Agency (EPA). Potential operational environmental impacts are therefore subject to EPA control.

Since the potential impacts are projections into the future, where there is no available data, our projections may be limited, but we can still have controls built into the process. As an example, the potential impacts of five casinos are not known at this time but controls are built into the process to provide mitigation for such unknown impacts. The Bureau of Indian Affairs has only received applications from three tribes, so projecting impact beyond the known data would be pure speculation. We must consider potential impacts, but we also must consider whether the

project provides the means of mitigating potential impacts. By building controls into the process, even such unknowns can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues that you are concerned about, such as crime and other social issues. Each tribe also has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Robert K Lamb

ACTING Director, Eastern Region

Dear Mr Keel — as per
Phil Gitlin's request for
DEADLINE EXTENSION of
DEIS of STOCKBRIDGE — MUNSEE
CASINO PROJECT TO MAY 12th —
WE CONCUR — PLEASE GRANT
OUR — & MR. GITLIN'S REQUEST —
— THANK YOU.

Robert Bensi

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 0 2005

Mr. Robert Barsini
P.O. Box 732
South Fallsburg, NY 12779

Dear Mr. Barsini:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your postcard requested an extension of the comment period. An extension was not granted. All comments must have been received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

ACTING Director, Eastern Region

From: Brian L. Shera
76 Nature Lake Road
Liberty, NY 12754

Date: March 10, 2005

To: Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

Please find enclosed substantive issues regarding the Draft Environmental Impact Statement of the proposed Stockbridge-Munsee casino in the Town of Thompson in Sullivan County, New York. I respectfully request that all issues be answered and resolved in the Final Environmental Impact Statement with a copy of the responses sent to me. **Please respond by issue number.**

Thank you.

Respectfully,

Brian L. Shera

Brian L. Shera

enc.

RECEIVED
MAR 24 2005
By

1. Is there paved access to the project site?
2. Is the site currently served by an adequate and acceptable water supply?
3. Are there current sanitary sewers and waste water disposal systems serving the site?
4. Please respond to following issue: Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed Indian territory, and the placement of casinos is foreign and offensive to the community. There is no basis for this wholesale intrusion into the community mores and ethics.
5. How will a project workforce impact local housing over-crowding and code enforcement conditions that might impact adjacent communities, projected over the next ten years?
6. Will the project influence or be unduly influenced by obsolete public facilities?
7. Please identify an anticipated customer and weekly/daily/hourly traffic count associated with each commercial or ancillary use planned in the near-term and long-term use of the project site.
8. Will private transportation systems be required and/or implemented in association with the project?
9. Will the project influence or be unduly influenced by incompatible land uses?
10. Were underground storage tanks ever located on the site? If so, provide documentation that all underground storage tanks have been identified, located and appropriately removed by qualified professionals, using current techniques in compliance with 40 CFR Part 280.
11. How will activity at the proposed site impact resources of local, county and state law enforcement resources, over a projected ten-year period?
12. Are there proposed air pollution generators associated with the proposed project?
13. How will the applicant mitigate incinerators?
14. Are there ponds, marshes, bogs, swamps or other wetlands on or near the site?
15. What procedures are proposed for adjacent neighbors who wish to legitimately complain of excessive light or glare?
16. Have structural borings or dynamic soil analysis been requested in association with geological studies?
17. Please project estimates of revenue associated with each gambling, commercial or retail site and equate that to an equivalent sales tax loss of disposable income to adjacent local communities.
18. Does the project site or neighborhood suffer from disproportionately adverse environmental effects on minority and low-income populations relative to the community-at-large?
19. What additional sanitary sewer and wastewater disposal systems are required and how will expansions of such infrastructure impact existing, connecting infrastructure in terms of capacity and annual cost?
20. Is the project compatible with surround areas in terms of building type (low/high-rise)?
21. How will the applicant contribute to a stable and affordable housing stock supply consistent with the applicant's proposed workforce housing needs?
22. What is the total anticipated impervious surface coverage estimated for the proposed project?
23. Is the project located within a floodplain designated on a current FEMA flood map (24 CFR Part 55)?
24. What cost mitigations is the applicant proposing to offset impacted and increased law enforcement personnel needs of agencies serving the proposed project?
25. What are the previous uses of this site and what residual impacts affect the project or are affected by the project?
26. Has a traffic study accommodated existing traffic counts experienced at the project site, and then projected appropriate increased traffic counts based upon days of the week, hours of the day or night, and special events?
27. How will the project impact existing hotels, motels, B&Bs RV facilities and other overnight tourism lodging facilities?
28. Will the proposed project affect a sole water source or other aquifer?
29. Please respond to following issue: Governor Pataki himself, the chief proponent of the plan to put five casinos in the Sullivan-Route 17 corridor, has recognized the need for a cumulative impact assessment. In officially commenting on the Stockbridge-Munsee casino the Governor has specifically advised the BIA to conduct such an assessment before approving any of the casinos.
30. Has the applicant studied the current housing stock and occupancy rates of adjacent communities?
31. Are other natural resources visible on site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project?
32. Are there other hazardous terrain features?
33. If the site is not currently listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list, should it be? If not, why not?
34. Will the project be impacted by poisonous plants, insects or animals onsite?
35. Will the proposed project increase a need for onsite or offsite daycare facilities for children, and how will the applicant accommodate such need, inclusive of safety of children to and from day care facilities?
36. Will the project affect or be affected by hazardous streets?
37. How will a project workforce impact local community housing needs, projected over the next ten years?
38. Is the project within 3,000 feet from the end of a runway at a civil airport?
39. Will the project affect or be affected by nuisance odors? What mitigations are proposed?

40. Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?
41. Has the State Historic Preservation Office (SHPO) been notified of the project and requested to provide comments?
42. Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1,000 feet), or railroads (within 3,000 feet)?
43. Please respond to following issue: The DEIS fails to take any account of one of the most significant impacts: the introduction and prominence of casino gambling on central-southeastern Sullivan. There is no assessment of the impact on the social fabric. This is absurd since arguably no commercial activity will have as significant an impact on community character as casino gambling, particularly five casinos. No mitigation is even arguably complete unless the social support for gambling impacts on the community is fully funded.
44. Does the applicant propose to handle or sell explosives (fireworks) or propose to store fire-prone materials such as liquid propane, gasoline, or other storage tanks above or below ground?
45. Does the applicant anticipate hiring a workforce from outside of the immediate community? If so, from what sources will the applicant recruit its workforce?
46. How will any proposed private transportation systems impact and/or coordinate with public transportation systems currently in operation?
47. How will the applicant mitigate power generators?
48. Has a noise contours map been developed for the proposed project and does it show Day-night average sound level (abbreviated as DNL)?
49. Are there active rills and gullies on the project site?
50. What law enforcement and public safety plans have been developed for the proposed project that will be commensurate with area law enforcement and public safety needs projected over a ten year period?
51. Will the project influence or be unduly influenced by inadequate off-street parking?
52. Are there usual and customary children's play areas within the vicinity of the project site?
53. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of hard (i.e., robbery, vandalism, assault) and soft (white-collar larceny, embezzlement, fraud) crime traditionally associated with the gambling industry entrenching into a community previously unaffected by gambling?
54. Are there established biking and pedestrian pathways at or near the vicinity of the project site, and if so, what mitigations does the applicant propose to ensure the safety and non-interference of use of these public pathways?
55. Are there waste materials or containers on site?
56. Are there unprotected water bodies on site?
57. Are there existing or abandoned transformers, fill/vent pipes, pipelines, drainage structures?
58. For each alternative site considered by the applicant, please identify the process and professionals that made determinations that have ultimately assessed the proposed site as the environmentally preferred site.
59. Are there drainage ways streams, rivers, or coastlines on or near the project site?
60. Is the project located in a predominantly minority or low-income neighborhood?
61. How will the applicant ensure that increased capacity needs of public transportation will be accommodated at the sole expense of the applicant and not the adjacent local governments?
62. Is there evidence of slope erosion or unstable slope conditions on or near the site?
63. Are there usual and customary recreational areas in the vicinity of the project site that are currently utilized by the adjacent community, and if so, how will the users of these recreation areas be affected by the project?
64. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
65. Is the property located within or directly adjacent to an historic district?
66. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
67. What mitigations in terms of personnel, monitoring systems, training and counseling programs is the applicant proposing to minimize the impact of anticipated crime associated with the gambling industry?
68. Please respond to following issue: The DEIS fails to account for any of the environmental or social impacts of five casinos. The people deserve and the law demands a full, competent assessment of cumulative impact given Governor Pataki's plan to imposing such a burden on (indeed sacrifice) Sullivan County to mitigate state budget problems and avoid the land claim litigation.
69. Will the project be affected by wind/sandstorm concerns?
70. Has the applicant developed a public safety evacuation and rescue plan for customers, and does the plan accommodate projected customers based upon high or low attendance that is associated with hours of operations, weekdays, holidays, and special events?
71. Has a traffic study calculated existing road maintenance requires with anticipated road maintenance or road expansion needs to accommodate the project? What are project costs associated with this subject?
72. How will current sanitary sewers and waste water disposal systems be impacted by the proposed project, and at what cost?

73. Is the property listed on or eligible for listing on the National Register of Historic Places?
74. Please respond to following issue: There is no analysis of induced growth, contrary to federal requirements, the public interest and common sense. It is not possible to rationally assess the impacts of the casinos without at least a general review of the buildout which will accompany it. Simply relying on local zoning is neither analysis nor mitigation of these growth-sprawl issues.
75. Does the project proposal include a full inventory and assessment of all hazardous materials associated with the project?
76. Are there unusual conditions on the site?
77. Is the project compatible with surround areas in terms of land use?
78. Please respond to following issue: Overall, the plan to site five casinos in the Route 17 corridor is an affront and danger to the existing communities. It is ironic that the remedy for their supposed problem - economic stagnation - is a wholly disproportionate influx of nuisances including casino gambling and induced growth, pollution traffic and social ills.
79. Are there pools of liquid or soil staining, chemical spills, abandoned machinery, cars, refrigerators, etc.?
80. If the applicant proposed to construct hotel or motel facilities at or adjacent to the proposed project, please calculate the estimated impact of business to existing tourist facilities, and the projected hotel occupancy tax loss to adjacent local governments, over the next ten years.
81. Is the proposed building footprint located in a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?
82. Will the project influence or be unduly influenced by building deterioration?
83. Will the project influence or be unduly influenced by transition of land uses?
84. Is the project within 2 and 1/2 miles from the end of a runway at a military airstrip?
85. Is the project located within a coastal barrier designated on a current FEMA flood map or Department of Interior coastal barrier resources map?
86. How will the project impact existing public transportation facilities of the community?
87. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
88. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
89. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
90. What mitigations are proposed for water supplies of the proposed project that will not affect or will ameliorate water supplies of adjacent residential neighborhoods businesses, and other land uses currently receiving adequate water?
91. How will the applicant assure the local government and surrounding community that costs associated with increased water supply needs of the project will be fully accommodated by the applicant, and not a burden imposed upon local governments, local water districts or providers, or local property owners?
92. Are there visual indications of filled ground? What assurances has the applicant developed to ensure soil stability for construction footprint and impervious surfaces?
93. Is the site located within 3,000 feet of a toxic or solid waste landfill site?
94. What mitigations are proposed to accommodate traffic generated by the proposed project with existing traffic counts and flows at and adjacent to the project site?
95. Does the project comply with 24 CFR 51, Subpart B that requires a Noise Assessment for proposed new construction?
96. For each alternative site considered by the applicant, please describe the level of analysis conducted, and explain why the specific site was rejected, in preference for the proposed site of the applicant.
97. Are there any unresolved hazardous materials issues at the proposed site that could the state, county or a municipality to be determined to be potential responsible party?
98. Is there indication of cross-lot runoff, swales, drainage flows on the property?
99. Please identify by assessor parcel number and physical street address or location, each and all sites considered by the applicant, prior to selecting the subject site as the preferred site.
100. How will the applicant assess project site light and glare to adjacent properties?
101. Please respond to following issue: It is unfair and wrong to at once transform the traffic in the region from generally clear with some limitations during rush hour, to generally busy and congested and overloaded during peak hours. Mobility would be significantly infringed, and those who disproportionately rely on automobiles, such as businesses, would be badly damaged.
102. Is the project compatible with surround areas in terms of height, bulk, and mass?
103. Do public school buses travel the road systems associated with the project site, and if so, how will traffic mitigations proposed by the applicant ensure safe and timely schedules for public school transportation needs?
104. Have soil reports or studies or borings been made for the project site or the area? If so, what are the findings of soil studies accomplished?

105. Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the vicinity of the project site?
106. Please respond to following issue: The pollution from such added traffic will damage air quality in the area, and exacerbate unhealthy conditions. Sullivan County residents already suffer from a disproportionate and growing number of respiratory problems. There is no justification for subjecting such individuals to a relatively sudden and serious deterioration in air quality and resulting threat to their health.
107. Does the property's area of potential effects include an historic district or property?
108. What is the proximity of public schools to the project site?
109. Will the project influence or be unduly influenced by postponed maintenance?
110. What is the projected weekly, daily and hourly traffic count for the site, and how does this translate to an annual traffic increase that impacts adjacent properties and neighborhoods?
111. What mitigations (i.e. traffic signals, traffic security personnel, shuttle services) are proposed to ameliorate significant traffic increase and activity associated with the proposed project? What is this cost and how will it be accommodated without affecting costs of adjacent local governments?
112. What mitigations will ensure that onsite and offsite light and glare will comport with adjacent local government light, glare and signage requirements?
113. How will the applicant mitigate heavily traveled highways, adjacent and onsite road systems?
114. How will the applicant mitigate large parking facilities (1,000 or more cars)?
115. What percentage of the project site is proposed for impervious surface, and how does this surface impact existing elements such as a sole water source or other aquifer?
116. What procedures or guidelines will be developed that allows community members or adjacent property owners to formally complain about inordinate or unanticipated noise?
117. Please describe whether or how the applicant proposes to hire a local workforce, and how this potential transition of workers from current employment to future employment with the applicant might impact the local workforce?
118. Does the proposed project comply with public all safety requirements for fire safety, in accordance with state and federal law?
119. Is the project compatible with surround areas in terms of building density?
120. Describe the site elevations and any accommodations required for significant slopes.
121. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
122. Has a traffic study been developed for the proposed project that is specific to this site and this project, and not just generic to the proposed industry?
123. Will the project affect or be affected by dangerous intersections?
124. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
125. Does the project comply with Executive Order (E.O.) 11990, Protection of Wetlands, which discourages federal funding of new construction or filling in wetlands and compliance is required with the wetlands decision-making process (§ 55.20 of 24 CFR Part 55)?
126. Will the project be affected by seismic faults, or fractures?
127. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of an Indian gambling casino upon the foreseeable disposable income loss to adjacent commercial, retail, restaurant, recreational and lodging facilities, over the next ten years?
128. Is there any indication of currently distressed vegetation?

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Mr. Brian Shera
76 Nature Lake Road
Liberty, NY 12754

APR 20 2005

Dear Mr. Shera:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You provided a form letter with a place to add your name and address, listing 128 questions about the project. We received numerous copies of this form letter with the list in various order. We are not answering each question by number since most are clearly addressed in the DEIS. Other questions do not pertain to any potential impact of the project. Others cannot be answered because the information is not known, such as the potential impact of five casinos. We only have applications from three tribes. Without detailed information on the two other casinos, we lack the necessary data to make a complete assessment for five casinos. It is clear that the person who prepared the form letter did not read the DEIS. Their actions and intentions also do not appear consistent with the intent and purpose of the public comment period for the DEIS. We request that anyone who chooses to provide public comments for such projects keep the comments pertinent to the project and pertinent to the DEIS. Each Federal agency is required by the National Environmental Policy Act to establish its own standards and requirements to fulfill the law. This DEIS meets the standards established by the Bureau of Indian Affairs and analyzes the relevant potential impacts required by the Bureau.

These form letter comments have been assessed and considered. They do not warrant further agency response because, as previously stated, the information that answers these questions is (1) not available, or (2) clearly stated in the DEIS and/or (3) not pertinent to any reasonably foreseeable significant adverse effects that are a result of the project.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Robert K Lampe

ACTING Director, Eastern Region

From: Gina Molinet
Box 321
Livingston Manor, NY
12758

RECEIVED
MAR 17 2005
By BIA

Date: March 10, 2005

To: Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

Please find enclosed substantive issues regarding the Draft Environmental Impact Statement of the proposed Stockbridge-Munsee casino in the Town of Thompson in Sullivan County, New York. I respectfully request that all issues be answered and resolved in the Final Environmental Impact Statement with a copy of the responses sent to me. **Please respond by issue number.**

Thank you.

Respectfully,

Gina Molinet, Broker
RM Farm Real Estate.

enc.

1. Is the site located within 3,000 feet of a toxic or solid waste landfill site?
2. Has a noise contours map been developed for the proposed project and does it show Day-night average sound level (abbreviated as DNL)?
3. Does the project proposal include a full inventory and assessment of all hazardous materials associated with the project?
4. What mitigations are proposed to accommodate traffic generated by the proposed project with existing traffic counts and flows at and adjacent to the project site?
5. Is the proposed building footprint located in a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?
6. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of an Indian gambling casino upon the foreseeable disposable income loss to adjacent commercial, retail, restaurant, recreational and lodging facilities, over the next ten years?
7. What percentage of the project site is proposed for impervious surface, and how does this surface impact existing elements such as a sole water source or other aquifer?
8. Please respond to following issue: The DEIS fails to account for any of the environmental or social impacts of five casinos. The people deserve and the law demands a full, competent assessment of cumulative impact given Governor Pataki's plan to imposing such a burden on (indeed sacrifice) Sullivan County to mitigate state budget problems and avoid the land claim litigation.
9. Will the project influence or be unduly influenced by inadequate off-street parking?
10. Do public school buses travel the road systems associated with the project site, and if so, how will traffic mitigations proposed by the applicant ensure safe and timely schedules for public school transportation needs?
11. Is there evidence of slope erosion or unstable slope conditions on or near the site?
12. Please respond to following issue: It is unfair and wrong to at once transform the traffic in the region from generally clear with some limitations during rush hour, to generally busy and congested and overloaded during peak hours. Mobility would be significantly infringed, and those who disproportionately rely on automobiles, such as businesses, would be badly damaged.
13. Does the applicant propose to handle or sell explosives (fireworks) or propose to store fire-prone materials such as liquid propane, gasoline, or other storage tanks above or below ground?
14. Is the project compatible with surround areas in terms of height, bulk, and mass?
15. What mitigations will ensure that onsite and offsite light and glare will comport with adjacent local government light, glare and signage requirements?
16. Please respond to following issue: There is no analysis of induced growth, contrary to federal requirements, the public interest and common sense. It is not possible to rationally assess the impacts of the casinos without at least a general review of the buildout which will accompany it. Simply relying on local zoning is neither analysis nor mitigation of these growth-sprawl issues.
17. Is the project within 3,000 feet from the end of a runway at a civil airport?
18. Are there pools of liquid or soil staining, chemical spills, abandoned machinery, cars, refrigerators, etc.?
19. Are there unprotected water bodies on site?
20. Has the applicant developed a public safety evacuation and rescue plan for customers, and does the plan accommodate projected customers based upon high or low attendance that is associated with hours of operations, weekdays, holidays, and special events?
21. Please describe whether or how the applicant proposes to hire a local workforce, and how this potential transition of workers from current employment to future employment with the applicant might impact the local workforce?
22. Is the property located within or directly adjacent to an historic district?
23. Were underground storage tanks ever located on the site? If so, provide documentation that all underground storage tanks have been identified, located and appropriately removed by qualified professionals, using current techniques in compliance with 40 CFR Part 280.
24. Please respond to following issue: Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed Indian territory, and the placement of casinos is foreign and offensive to the community. There is no basis for this wholesale intrusion into the community mores and ethics.
25. What are the previous uses of this site and what residual impacts affect the project or are affected by the project?
26. If the applicant proposed to construct hotel or motel facilities at or adjacent to the proposed project, please calculate the estimated impact of business to existing tourist facilities, and the projected hotel occupancy tax loss to adjacent local governments, over the next ten years.
27. What additional sanitary sewer and wastewater disposal systems are required and how will expansions of such infrastructure impact existing, connecting infrastructure in terms of capacity and annual cost?
28. Have soil reports or studies or borings been made for the project site or the area? If so, what are the findings of soil studies accomplished?

29. Does the project comply with Executive Order (E.O.) 11990, Protection of Wetlands, which discourages federal funding of new construction or filling in wetlands and compliance is required with the wetlands decision-making process (§ 55.20 of 24 CFR Part 55)?
30. Will the proposed project increase a need for onsite or offsite daycare facilities for children, and how will the applicant accommodate such need, inclusive of safety of children to and from day care facilities?
31. What is the total anticipated impervious surface coverage estimated for the proposed project?
32. Are other natural resources visible on site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project?
33. Is the project compatible with surround areas in terms of building type (low/high-rise)?
34. Will the project be affected by seismic faults, or fractures?
35. Does the project site or neighborhood suffer from disproportionately adverse environmental effects on minority and low-income populations relative to the community-at-large?
36. Has a traffic study accommodated existing traffic counts experienced at the project site, and then projected appropriate increased traffic counts based upon days of the week, hours of the day or night, and special events?
37. Please project estimates of revenue associated with each gambling, commercial or retail site and equate that to an equivalent sales tax loss of disposable income to adjacent local communities.
38. How will a project workforce impact local housing over-crowding and code enforcement conditions that might impact adjacent communities, projected over the next ten years?
39. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
40. Will the project influence or be unduly influenced by building deterioration?
41. Will the project influence or be unduly influenced by obsolete public facilities?
42. Is the site currently served by an adequate and acceptable water supply?
43. How will the project impact existing hotels, motels, B&Bs RV facilities and other overnight tourism lodging facilities?
44. Will the project influence or be unduly influenced by transition of land uses?
45. Are there existing or abandoned transformers, fill/vent pipes, pipelines, drainage structures?
46. Are there current sanitary sewers and waste water disposal systems serving the site?
47. How will current sanitary sewers and waste water disposal systems be impacted by the proposed project, and at what cost?
48. What cost mitigations is the applicant proposing to offset impacted and increased law enforcement personnel needs of agencies serving the proposed project?
49. Has a traffic study been developed for the proposed project that is specific to this site and this project, and not just generic to the proposed industry?
50. Are there ponds, marshes, bogs, swamps or other wetlands on or near the site?
51. Is the property listed on or eligible for listing on the National Register of Historic Places?
52. Does the applicant anticipate hiring a workforce from outside of the immediate community? If so, from what sources will the applicant recruit its workforce?
53. Please identify by assessor parcel number and physical street address or location, each and all sites considered by the applicant, prior to selecting the subject site as the preferred site.
54. What procedures are proposed for adjacent neighbors who wish to legitimately complain of excessive light or glare?
55. Please respond to following issue: Overall, the plan to site five casinos in the Route 17 corridor is an affront and danger to the existing communities. It is ironic that the remedy for their supposed problem - economic stagnation - is a wholly disproportionate influx of nuisances including casino gambling and induced growth, pollution traffic and social ills.
56. Please respond to following issue: The DEIS fails to take any account of one of the most significant impacts: the introduction and prominence of casino gambling on central-southeastern Sullivan. There is no assessment of the impact on the social fabric. This is absurd since arguably no commercial activity will have as significant an impact on community character as casino gambling, particularly five casinos. No mitigation is even arguably complete unless the social support for gambling impacts on the community is fully funded.
57. What is the projected weekly, daily and hourly traffic count for the site, and how does this translate to an annual traffic increase that impacts adjacent properties and neighborhoods?
58. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
59. What mitigations in terms of personnel, monitoring systems, training and counseling programs is the applicant proposing to minimize the impact of anticipated crime associated with the gambling industry?
60. How will a project workforce impact local community housing needs, projected over the next ten years?
61. Are there active rills and gullies on the project site?
62. Are there usual and customary children's play areas within the vicinity of the project site?
63. How will the project impact existing public transportation facilities of the community?

64. Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1,000 feet), or railroads (within 3,000 feet)?
65. How will the applicant mitigate incinerators?
66. Does the project comply with 24 CFR 51, Subpart B that requires a Noise Assessment for proposed new construction?
67. Please identify an anticipated customer and weekly/daily/hourly traffic count associated with each commercial or ancillary use planned in the near-term and long-term use of the project site.
68. If the site is not currently listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list, should it be? If not, why not?
69. Will the project affect or be affected by hazardous streets?
70. Is the project within 2 and 1/2 miles from the end of a runway at a military airstrip?
71. What procedures or guidelines will be developed that allows community members or adjacent property owners to formally complain about inordinate or unanticipated noise?
72. Please respond to following issue: Governor Pataki himself, the chief proponent of the plan to put five casinos in the Sullivan-Route 17 corridor, has recognized the need for a cumulative impact assessment. In officially commenting on the Stockbridge-Munsee casino the Governor has specifically advised the BIA to conduct such an assessment before approving any of the casinos.
73. Has the applicant studied the current housing stock and occupancy rates of adjacent communities?
74. Is the project located within a floodplain designated on a current FEMA flood map (24 CFR Part 55)?
75. Are there proposed air pollution generators associated with the proposed project?
76. Are there other hazardous terrain features?
77. Is the project compatible with surround areas in terms of land use?
78. Is there any indication of currently distressed vegetation?
79. Will the project influence or be unduly influenced by postponed maintenance?
80. Describe the site elevations and any accommodations required for significant slopes.
81. Does the proposed project comply with public all safety requirements for fire safety, in accordance with state and federal law?
82. Will the project affect or be affected by nuisance odors? What mitigations are proposed?
83. How will the applicant assess project site light and glare to adjacent properties?
84. Will the project affect or be affected by dangerous intersections?
85. Has the State Historic Preservation Office (SHPO) been notified of the project and requested to provide comments?
86. Are there usual and customary recreational areas in the vicinity of the project site that are currently utilized by the adjacent community, and if so, how will the users of these recreation areas be affected by the project?
87. Is the project compatible with surround areas in terms of building density?
88. How will the applicant assure the local government and surrounding community that costs associated with increased water supply needs of the project will be fully accommodated by the applicant, and not a burden imposed upon local governments, local water districts or providers, or local property owners?
89. Is there paved access to the project site?
90. Will the project be affected by wind/sandstorm concerns?
91. Are there established biking and pedestrian pathways at or near the vicinity of the project site, and if so, what mitigations does the applicant propose to ensure the safety and non-interference of use of these public pathways?
92. Will the proposed project affect a sole water source or other aquifer?
93. How will any proposed private transportation systems impact and/or coordinate with public transportation systems currently in operation?
94. How will the applicant mitigate heavily traveled highways, adjacent and onsite road systems?
95. Please respond to following issue: The pollution from such added traffic will damage air quality in the area, and exacerbate unhealthy conditions. Sullivan County residents already suffer from a disproportionate and growing number of respiratory problems. There is no justification for subjecting such individuals to a relatively sudden and serious deterioration in air quality and resulting threat to their health.
96. What mitigations are proposed for water supplies of the proposed project that will not affect or will ameliorate water supplies of adjacent residential neighborhoods businesses, and other land uses currently receiving adequate water?
97. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
98. Is there indication of cross-lot runoff, swales, drainage flows on the property?
99. What law enforcement and public safety plans have been developed for the proposed project that will be commensurate with area law enforcement and public safety needs projected over a ten year period?
100. How will the applicant mitigate power generators?

101. Are there any unresolved hazardous materials issues at the proposed site that could the state, county or a municipality to be determined to be potential responsible party?
102. Will the project influence or be unduly influenced by incompatible land uses?
103. Are there unusual conditions on the site?
104. Are there drainage ways streams, rivers, or coastlines on or near the project site?
105. Does the property's area of potential effects include an historic district or property?
106. Is the project located within a coastal barrier designated on a current FEMA flood map or Department of Interior coastal barrier resources map?
107. Are there visual indications of filled ground? What assurances has the applicant developed to ensure soil stability for construction footprint and impervious surfaces?
108. What mitigations (i.e. traffic signals, traffic security personnel, shuttle services) are proposed to ameliorate significant traffic increase and activity associated with the proposed project? What is this cost and how will it be accommodated without affecting costs of adjacent local governments?
109. Has a traffic study calculated existing road maintenance requires with anticipated road maintenance or road expansion needs to accommodate the project? What are project costs associated with this subject?
110. Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the vicinity of the project site?
111. Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?
112. Have structural borings or dynamic soil analysis been requested in association with geological studies?
113. How will the applicant contribute to a stable and affordable housing stock supply consistent with the applicant's proposed workforce housing needs?
114. For each alternative site considered by the applicant, please describe the level of analysis conducted, and explain why the specific site was rejected, in preference for the proposed site of the applicant.
115. For each alternative site considered by the applicant, please identify the process and professionals that made determinations that have ultimately assessed the proposed site as the environmentally preferred site.
116. Will the project be impacted by poisonous plants, insects or animals onsite?
117. Will private transportation systems be required and/or implemented in association with the project?
118. How will the applicant ensure that increased capacity needs of public transportation will be accommodated at the sole expense of the applicant and not the adjacent local governments?
119. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
120. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
121. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
122. How will the applicant mitigate large parking facilities (1,000 or more cars)?
123. Is the project located in a predominantly minority or low-income neighborhood?
124. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of hard (i.e., robbery, vandalism, assault) and soft (white-collar larceny, embezzlement, fraud) crime traditionally associated with the gambling industry entrenching into a community previously unaffected by gambling?
125. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
126. How will activity at the proposed site impact resources of local, county and state law enforcement resources, over a projected ten-year period?
127. What is the proximity of public schools to the project site?
128. Are there waste materials or containers on site?

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 18 2005

Ms. Gina Molinet
PO Box 321
Livingston Manor, NY 12758

Dear Ms. Molinet:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You provided a form letter with a place to add your name and address, listing 128 questions about the project. We are not answering each question by number since most are clearly addressed in the DEIS. Please read the DEIS where you will find your questions answered. We are enclosing a copy of the DEIS CD ROM for your convenience. The Adobe Acrobat version can be searched for key words to assist you in your quest for more knowledge about the project. If you still find unanswered questions, please consider that such questions may not be related to the project's potential impact. Each Federal agency is required by the National Environmental Policy Act to establish its own standards and requirements to fulfill the law. This DEIS meets the standards established by the Bureau of Indian Affairs and analyzes the relevant potential impacts required by the Bureau.

Your questions appear to be centered around a few primary areas so we will attempt to help you understand the controls and mitigations that are designed to minimize impacts in these areas.

The project site was subjected to an Environmental Site Assessment (ESA) according to standards established by the American Society of Testing Materials (ASTM). There were numerous environmental concerns resulting from previous uses of the property where we required correction. The automobile salvage yard and mining operation have since been remediated to standards established by the State of New York and verified by a Federal environmental professional. As trust property, the site would be subject to all environmental regulations established by the Environmental Protection Agency (EPA). Potential operational environmental impacts are therefore subject to EPA control.

Since the potential impacts are projections into the future, where there is no available data, our projections may be limited, but we can still have controls built into the process. As an example, the potential impacts of five casinos are not known at this time but controls are built into the process to provide mitigation for such unknown impacts. The Bureau of Indian Affairs has only received applications from three tribes, so projecting impact beyond the known data would be pure speculation. We must consider potential impacts, but we also must consider whether the

project provides the means of mitigating potential impacts. By building controls into the process, even such unknowns can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues that you are concerned about, such as crime and other social issues. Each tribe also has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

03-31-05P02:57 RCVD

MAR 28 2005

Franklin Keel
Regional Director
Eastern Regional Office
Bureau of Indian Affairs
711 Stewarts Ferry Pike
Nashville, Tennessee 37214

Rating EC-2

Dear Mr. Keel:

The Environmental Protection Agency (EPA) has reviewed the draft environmental impact statement (DEIS) for the Stockbridge-Munsee Casino (CEQ #050047) located in Thompson, New York. This review was conducted in accordance with Section 309 of the Clean Air Act, as amended (42 U.S.C. 7609, PL 91-604 12(a), 84 Stat.1709), and the National Environmental Policy Act (NEPA).

Project Description:

The proposed project site consists of several parcels that comprise approximately 333 acres. These parcels will be taken into trust for the Stockbridge-Munsee Tribe by the Bureau of Indian Affairs. The project is proposed to be built in two phases. The first phase consists of a main facility approximately 584,000 square feet in size that includes 3000 slot machines, 190 gaming tables, specialty bars and restaurants, a retail store area, children's areas, a 30,000 square foot multi-purpose area for a wide range of events such as conventions and sports venues, an employee area and back of the house. A 30,000 square foot warehousing and storage facility will be provided in a separate building located at the southern end of the site. A service station with eight pumps and a small convenience store will be located at the entrance to the casino. For Phase I, a total of 8,480 parking spaces will be provided in both surface lots and structured parking. Phase II consists of the construction of a 750 room hotel and a 1,020 space parking structure. The hotel will be located adjacent to the gaming facility and be approximately 500,000 square feet and fifteen stories. It will include additional restaurants and retail space.

Comments:

While the DEIS is clear and well written, we do have the following overall comments.

- The proposed project will require the filling of wetlands along the Neversink River. Based on a review of the information in the DEIS, the Clean Water Act Section 404 alternatives analysis is adequate. Most of the on-site construction activities will be located in a portion of the site that has been heavily impacted by previous sand and gravel mining activity and a more recent auto salvage facility. The proposed casino and associated activities will impact about 1.5 acres of wetlands and another 0.5 acres of pond and basin areas. About 700 linear feet of an intermittent stream will be impacted. The tribe has indicated that it will mitigate for these impacts on an almost 3:1 basis by the

creation of 4.3 acres of forested and emergent wetlands in a currently disturbed area of the site near the Neversink River. The mitigation will also include the creation of an additional 0.5 acres of open water and the restoration of approximately 800 linear feet of a stream. However, the DEIS does not contain specific information on this mitigation plan. Without this specific information, it will not be possible to determine if the plan is adequate to offset the unavoidable adverse impacts to the aquatic ecosystem from project construction. We suggest that the project proponents use the New York District of the Army Corps of Engineers' compensatory mitigation guidelines, issued on January 10, 2005 in the development of the wetland mitigation and monitoring plan for the project. The guidelines can be found at http://www.nan.usace.army.mil/business/buslinks/regulat/pnotices/mitfinal.pdf

- In addition, since the proposed activity will have stream impacts, we recommend that the project proponents use the Stream Mitigation Compendium, issued by the Corps and EPA on September 15, 2004, to evaluate the existing stream that will be impacted and to prepare the stream mitigation plan. This document can be accessed at: http://www.mitigationactionplan.gov/stream%20comp%20page.htm

- The Stockbridge-Munsee Tribe, the Village of Monticello, and the Town of Thompson have agreed to extend the Village water system to supply the potable water demand for the Casino Project. To do this, a new production well will be installed in the existing Village well field, and a new dedicated water line will be constructed from the well location to the site. The agreement does allow for other connections to the water infrastructure with the approval of the Village. As the construction of this water line may have indirect effects, including induced growth, changes in the pattern of land use and population density, please discuss and analyze all reasonably foreseeable indirect effects.

- Wastewater from the project will be sent to the Town of Thompson's Kiamesha Lake Sewer Treatment Facility through a new four mile long connection. According to the agreement between the tribe, the Town of Thompson and the Kiamesha Lake Sewer District, the connection shall be sized to handle sanitary sewage needs for possible expansion of the Sewer District. As the construction of this wastewater line may have similar indirect effects as the new water line, please discuss and analyze all reasonably foreseeable indirect effects.

- The DEIS does not include a discussion of the solid waste expected to be generated by the Stockbridge-Munsee Casino and how it is to be disposed. The direct and cumulative impacts of solid waste generation by the project and other developments to the solid waste facilities in Sullivan County must be discussed. EPA recommends that minimization techniques and recycling be incorporated into the project whenever possible. Additional information on this subject can be found in the EPA publication "Waste Reduction Tips for Hotels and Casinos in Indian Country" which can be found on the web at http://www.epa.gov/epaoswer/non-hw/tribal/pdftxt/casinotips.pdf.

- Concerning the direct impacts of traffic and air quality, the DEIS correctly states that transportation and general conformity are not required for the project because Sullivan County is in attainment of all current EPA National Ambient Air Quality Standards. However, Sullivan County is adjacent to Orange County, New York which is in non-attainment for EPA's 1-hour and 8-hour ozone standard and EPA's new PM2.5 standard.

Additionally, the new casino's proximity to the New York Metropolitan Area implicates Route 17 through Orange County as a major travel corridor to the casino. As such, the project sponsor should be working with the Orange County Metropolitan Planning Organization to include this project in Orange County's travel demand modeling so that traffic resulting from this project will be accounted for in Orange County's conformity determinations.

- As EPA stated in its December 6, 2004 comment letter on the St. Regis Mohawk Tribe Mohawk Mountain Casino and Resort, and discussed with Bureau of Indian Affairs on January 12, 2005, the cumulative impacts to traffic and air quality of all five casinos planned for Sullivan County must be analyzed in each casino's NEPA documentation. The cumulative impacts of all five casinos, due to both visitor traffic, employee traffic and ancillary traffic growth to the region must be included in the Final EIS for this project. EPA also recommends that all growth rates and modeling used in regional traffic forecasting be reviewed by the New York State Department of Transportation. Also, the RSN mixed use development in the Village of Monticello should be added to the list of future developments in the DEIS, and its impacts included in a cumulative traffic and air quality analysis. (Information on the RSN development was faxed by this office to the Bureau of Indian Affairs on January 13, 2005, and Rizzo Associates, consultants for this DEIS on February 18, 2005.)

- While the document did discuss the impact of new employees and their children on the economy and schools of Sullivan County, the cumulative impact of five casinos must be discussed.

- EPA notes the use of parking facilities to minimize the impact to the land surrounding the project, the use of a landscaping plan that will emphasize native plant communities and use of integrated pest management. We would also suggest that the tribe use pollution prevention and/or green building techniques whenever possible in the casino construction and operation.

As the DEIS does not include a detailed wetlands mitigation plan; analyze the indirect affects of the new water and sewer line; address solid waste disposal; nor thoroughly analyze the cumulative effects on traffic and air quality of the five casinos expected to be built in Sullivan County, EPA has rated the DEIS as EC-2, indicating that we have environmental concerns and that further information as described above is necessary (see enclosed rating sheet).

Sincerely yours,

Grace Musumeci for

John Filippelli, Chief
Strategic Planning and Multi-Media Programs Branch

Enclosure

SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION
Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of environmental quality, public health or welfare. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommend for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1-Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No Further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data , analysis, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From: EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 0 6 2005

Mr. John Filippelli
Strategic Planning and Multi-Media Programs Branch
US EPA, Region 2
290 Broadway
New York, NY 10007-1866

Dear Mr. Filippelli:

Thank you for providing comments on the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We would like to address your comments as follows.

(1) *Additional details are needed for the wetlands mitigation plan.*

Additional details will be provided.

(2) *EPA's Stream Mitigation Compendium is recommended for stream mitigation.*

This information will be forwarded to the contractor for inclusion where applicable.

(3) *Please discuss induced growth effects from having a new water line connected to the property.*

Additional information will be provided.

(4) *Please discuss induced growth effects from having a new sewer line connected to the property.*

Additional information will be provided.

(5) *Please provide information on the projected quantity and location where the casino operational waste will be disposed, and whether recycling will be used.*

Additional information will be provided.

(6) Route 17 will be used as a major travel corridor to the casino. The project sponsor should be working with the Orange County Metropolitan Planning Organization to include this project in Orange County's travel demand modeling to be accounted for in their conformity determinations.

The Orange County Metropolitan Planning Organization is welcome to use the traffic studies from the DEIS. Route 17 is a New York State Department of Transportation

controlled roadway. The Indian Gaming Regulatory Act (IGRA) requires the Tribe to negotiate a compact with the State to mitigate any potential impacts under State control. This compact is negotiated separately from the NEPA process, with the results not known until after the NEPA process complete.

(7) *The potential impacts of five casinos must be analyzed.*

The regulations (40 Code of Federal Regulations 1502.22) require the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. We only have applications from three tribes for casinos in Sullivan County. As stated in the DEIS, the information is unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that the proposed casinos will have similar drawing power and will be located within a short distance of Route 17. Without hard data it would be irresponsible to attempt to project quantitative impacts, and the speculation that will be presented must be considered subject to considerable error. The IGRA built controls into the process so that even such unknowns can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues, such as school impacts, crime and other social issues. Each tribe also has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

(8) *A five casino cumulative impact analysis is required for impacts on schools.*

See number 7 above.

(9) *EPA Region 2 recommends pollution prevention and green building techniques whenever possible.*

This recommendation will be forwarded to the Tribe.

For further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

ACTING Director, Eastern Region

March 14, 2005

Dear Mr. Chandler,

An extremely disturbing matter of real concern is happening in New York State with the EIS # 050047 Draft Environmental Impact Statement of the Stockbridge-Munsee Casino Project, Sullivan County, N.Y. being brought before the Legislature.

There are certainly other ways to raise money for our lagging budget without jeopardizing the lives of thousands of people by introducing casino gambling into New York State.

No-one even mentions the huge sums of money it takes to re-habilitate countless addicted gamblers. We all know there are many of them.

Has any-one ever thought about eliminating all "pork" from the annual budget for a few years? I assure you that no-one will suffer pork-wise and it could make a tremendous difference.

Please consider other ways to raise revenue — not casinos

Sincerely,
Eleanor Lane

RECEIVED
MAR 18 2005
By BSS

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 23 2005

Ms. Elain Lane
PO Box 157
Windhauf, NY 12496

Dear Ms. Lane:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your comments center on having the State of New York raise revenues by means other than supporting tribal casinos. We have no comment on how the State of New York raises money or how it spends the money it raises.

The Federal Indian Gaming Regulatory Act allows Indian gaming in any state that already has legalized gambling. It is illegal discrimination to allow any other type of gambling (including state lotteries) while disallowing Indian gaming. Since the State of New York has a lottery the State cannot legally discriminate against Indian gaming.

You also expressed concern over the cost to rehabilitate gambling addicts. In the local agreement between the Tribe and local government the Tribe is paying 15 million dollars annually to mitigate for any perceived negative social impact the casino may have. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions and increased load to community services and police that may be associated with the casino

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K. Lampe

ACTING Director, Eastern Region

112 Roosevelt Rd
Hyde Park NY 12538
March 20, 2005

Mr Franklin Keel, Regional Director
Bureau of Indian Affairs - Eastern Regional Office
711 Stewart's Ferry Pike
Nashville TN 37214

Attn: Mr Kurt Chandler

Dear Mr Chandler:

In reference to the EIS#050047, Draft Environmental Impact Statement of the Stockbridge-Munsee Casino Project, Sullivan County, NY.:

We are against the building of casinos in what is mostly rural Sullivan County. Surely there is a better way to settle tribal land claims. Sullivan County simply cannot handle this — its services are not sufficient to handle the growth.

RECEIVED
MAR 24 2005
By

Sincerely,
Eilene Peeling
Robert K. Peeling

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 2 2005

Ms. Eilene Peeling and Mr. Robert Peeling
112 Roosevelt Road
Hyde Park, NY 12538

Dear Ms. and Mr. Peeling:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) Your first issue appears to be how the tribal land claims were handled.

You appear to be aware that Governor Pataki has signed five land claim settlement agreements with Indian tribes in recent months. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. Some of these land claim settlements include supporting a casino as part of the settlement. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. The Indian Gaming Regulatory Act requires a compact between any tribe requesting a casino and the state where the casino is located. The purpose of this compact is to mitigate any impacts due to the casino for issues under state control such a Route 17 traffic and associate air quality impacts. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues. One alternative to the land clam settlement agreements would be to pay the tribes for these taken tribal lands. The choice for the State may come down to (1) receiving large sums of money by supporting tribal casinos or (2) paying out large sums of money to settle these land claims.

(2) You believe that local services are not capable of handling the growth.

The Tribe has a mitigation agreement with local government that annually provides 15 million dollars to mitigate any perceived impact that the casino may have. The Tribe is sensitive to the needs of the local community and is making every effort to display a good neighbor policy. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions and increased load to community services and police that may be associated with the casino. Regional growth also includes an inherent means of mitigation since any new resident that moves to the region would also pay taxes that support local services, just like everyone else. That

distributes the cost of services to a greater number of people. The history of the region shows that it has been able to support a much greater number of people than it currently does.

We also want to ensure you that there would be no unmitigated impacts in the region if all five proposed tribal casinos are built. Since we only have casino applications from three tribes, the data is currently unavailable to make a complete quantitative assessment. The additional narrative that will be provided in the Final Environmental Impact Statement will be based on assumption that all casinos would have similar drawing power and be close to route 17 in Sullivan County. Even without complete information we are confident that the impacts can be mitigated since each Tribe will have a State compact and local mitigation agreement designed to mitigate impacts.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

From: Mitchel R. Krasnoff
85 Bushville-Swan Lake Rd
Ferndale N.Y. 12734

Date: March 10, 2005

To: Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

Please find enclosed substantive issues regarding the Draft Environmental Impact Statement of the proposed Stockbridge-Munsee casino in the Town of Thompson in Sullivan County, New York. I respectfully request that all issues be answered and resolved in the Final Environmental Impact Statement with a copy of the responses sent to me. **Please respond by issue number.**

Thank you.

Respectfully,

Mitchel R. Krasnoff

enc.

1. Does the project site or neighborhood suffer from disproportionately adverse environmental effects on minority and low-income populations relative to the community-at-large?
2. How will the applicant mitigate heavily traveled highways, adjacent and onsite road systems?
3. Have structural borings or dynamic soil analysis been requested in association with geological studies?
4. Are there existing or abandoned transformers, fill/vent pipes, pipelines, drainage structures?
5. Please describe whether or how the applicant proposes to hire a local workforce, and how this potential transition of workers from current employment to future employment with the applicant might impact the local workforce?
6. Is there indication of cross-lot runoff, swales, drainage flows on the property?
7. If the site is not currently listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list, should it be? If not, why not?
8. How will the applicant contribute to a stable and affordable housing stock supply consistent with the applicant's proposed workforce housing needs?
9. Will the project influence or be unduly influenced by incompatible land uses?
10. What mitigations are proposed for water supplies of the proposed project that will not affect or will ameliorate water supplies of adjacent residential neighborhoods businesses, and other land uses currently receiving adequate water?
11. Has the State Historic Preservation Office (SHPO) been notified of the project and requested to provide comments?
12. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
13. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
14. Please respond to following issue: The DEIS fails to take any account of one of the most significant impacts: the introduction and prominence of casino gambling on central-southeastern Sullivan. There is no assessment of the impact on the social fabric. This is absurd since arguably no commercial activity will have as significant an impact on community character as casino gambling, particularly five casinos. No mitigation is even arguably complete unless the social support for gambling impacts on the community is fully funded.
15. Will the project affect or be affected by dangerous intersections?
16. Is there any indication of currently distressed vegetation?
17. How will the project impact existing hotels, motels, B&Bs RV facilities and other overnight tourism lodging facilities?
18. Does the applicant propose to handle or sell explosives (fireworks) or propose to store fire-prone materials such as liquid propane, gasoline, or other storage tanks above or below ground?
19. Will the project be affected by wind/sandstorm concerns?
20. Will the project affect or be affected by hazardous streets?
21. Please project estimates of revenue associated with each gambling, commercial or retail site and equate that to an equivalent sales tax loss of disposable income to adjacent local communities.
22. How will the applicant assure the local government and surrounding community that costs associated with increased water supply needs of the project will be fully accommodated by the applicant, and not a burden imposed upon local governments, local water districts or providers, or local property owners?
23. Is there paved access to the project site?
24. How will the applicant mitigate power generators?
25. Have soil reports or studies or borings been made for the project site or the area? If so, what are the findings of soil studies accomplished?
26. Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1,000 feet), or railroads (within 3,000 feet)?
27. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of an Indian gambling casino upon the foreseeable disposable income loss to adjacent commercial, retail, restaurant, recreational and lodging facilities, over the next ten years?
28. Will the project influence or be unduly influenced by inadequate off-street parking?
29. Will the project influence or be unduly influenced by transition of land uses?
30. Is the project within 2 and 1/2 miles from the end of a runway at a military airstrip?
31. What is the proximity of public schools to the project site?
32. Is the project compatible with surround areas in terms of land use?
33. Is the property listed on or eligible for listing on the National Register of Historic Places?
34. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
35. Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?
36. What is the projected weekly, daily and hourly traffic count for the site, and how does this translate to an annual traffic increase that impacts adjacent properties and neighborhoods?

37. What procedures are proposed for adjacent neighbors who wish to legitimately complain of excessive light or glare?
38. How will the applicant assess project site light and glare to adjacent properties?
39. For each alternative site considered by the applicant, please identify the process and professionals that made determinations that have ultimately assessed the proposed site as the environmentally preferred site.
40. How will activity at the proposed site impact resources of local, county and state law enforcement resources, over a projected ten-year period?
41. Please respond to following issue: Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed Indian territory, and the placement of casinos is foreign and offensive to the community. There is no basis for this wholesale intrusion into the community mores and ethics.
42. Is the project located within a coastal barrier designated on a current FEMA flood map or Department of Interior coastal barrier resources map?
43. Is the property located within or directly adjacent to an historic district?
44. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
45. Does the project proposal include a full inventory and assessment of all hazardous materials associated with the project?
46. What mitigations in terms of personnel, monitoring systems, training and counseling programs is the applicant proposing to minimize the impact of anticipated crime associated with the gambling industry?
47. Is the project within 3,000 feet from the end of a runway at a civil airport?
48. What cost mitigations is the applicant proposing to offset impacted and increased law enforcement personnel needs of agencies serving the proposed project?
49. How will the applicant ensure that increased capacity needs of public transportation will be accommodated at the sole expense of the applicant and not the adjacent local governments?
50. What mitigations will ensure that onsite and offsite light and glare will comport with adjacent local government light, glare and signage requirements?
51. Are there pools of liquid or soil staining, chemical spills, abandoned machinery, cars, refrigerators, etc.?
52. How will the applicant mitigate large parking facilities (1,000 or more cars)?
53. Is the site currently served by an adequate and acceptable water supply?
54. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
55. Does the applicant anticipate hiring a workforce from outside of the immediate community? If so, from what sources will the applicant recruit its workforce?
56. Has the applicant developed a public safety evacuation and rescue plan for customers, and does the plan accommodate projected customers based upon high or low attendance that is associated with hours of operations, weekdays, holidays, and special events?
57. What mitigations (i.e. traffic signals, traffic security personnel, shuttle services) are proposed to ameliorate significant traffic increase and activity associated with the proposed project? What is this cost and how will it be accommodated without affecting costs of adjacent local governments?
58. Will the proposed project affect a sole water source or other aquifer?
59. Will the project be impacted by poisonous plants, insects or animals onsite?
60. Has a noise contours map been developed for the proposed project and does it show Day-night average sound level (abbreviated as DNL)?
61. How will any proposed private transportation systems impact and/or coordinate with public transportation systems currently in operation?
62. Are there drainage ways streams, rivers, or coastlines on or near the project site?
63. Does the project comply with Executive Order (E.O.) 11990, Protection of Wetlands, which discourages federal funding of new construction or filling in wetlands and compliance is required with the wetlands decision-making process (§ 55.20 of 24 CFR Part 55)?
64. Has a traffic study calculated existing road maintenance requires with anticipated road maintenance or road expansion needs to accommodate the project? What are project costs associated with this subject?
65. How will a project workforce impact local community housing needs, projected over the next ten years?
66. Are there ponds, marshes, bogs, swamps or other wetlands on or near the site?
67. Are there other hazardous terrain features?
68. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
69. Will private transportation systems be required and/or implemented in association with the project?
70. Is there evidence of slope erosion or unstable slope conditions on or near the site?
71. Is the project located within a floodplain designated on a current FEMA flood map (24 CFR Part 55)?

72. Please respond to following issue: It is unfair and wrong to at once transform the traffic in the region from generally clear with some limitations during rush hour, to generally busy and congested and overloaded during peak hours. Mobility would be significantly infringed, and those who disproportionately rely on automobiles, such as businesses, would be badly damaged.
73. Does the proposed project comply with public all safety requirements for fire safety, in accordance with state and federal law?
74. Are there unprotected water bodies on site?
75. Is the project compatible with surround areas in terms of building density?
76. Please identify an anticipated customer and weekly/daily/hourly traffic count associated with each commercial or ancillary use planned in the near-term and long-term use of the project site.
77. Is the proposed building footprint located in a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?
78. Please respond to following issue: The DEIS fails to account for any of the environmental or social impacts of five casinos. The people deserve and the law demands a full, competent assessment of cumulative impact given Governor Pataki's plan to imposing such a burden on (indeed sacrifice) Sullivan County to mitigate state budget problems and avoid the land claim litigation.
79. Are there any unresolved hazardous materials issues at the proposed site that could the state, county or a municipality to be determined to be potential responsible party?
80. What additional sanitary sewer and wastewater disposal systems are required and how will expansions of such infrastructure impact existing, connecting infrastructure in terms of capacity and annual cost?
81. Will the proposed project increase a need for onsite or offsite daycare facilities for children, and how will the applicant accommodate such need, inclusive of safety of children to and from day care facilities?
82. Is the site located within 3,000 feet of a toxic or solid waste landfill site?
83. How will current sanitary sewers and waste water disposal systems be impacted by the proposed project, and at what cost?
84. For each alternative site considered by the applicant, please describe the level of analysis conducted, and explain why the specific site was rejected, in preference for the proposed site of the applicant.
85. Please respond to following issue: Governor Pataki himself, the chief proponent of the plan to put five casinos in the Sullivan-Route 17 corridor, has recognized the need for a cumulative impact assessment. In officially commenting on the Stockbridge-Munsee casino the Governor has specifically advised the BIA to conduct such an assessment before approving any of the casinos.
86. Are there active rills and gullies on the project site?
87. What are the previous uses of this site and what residual impacts affect the project or are affected by the project?
88. What is the total anticipated impervious surface coverage estimated for the proposed project?
89. Is the project compatible with surround areas in terms of height, bulk, and mass?
90. Are there usual and customary recreational areas in the vicinity of the project site that are currently utilized by the adjacent community, and if so, how will the users of these recreation areas be affected by the project?
91. Will the project influence or be unduly influenced by postponed maintenance?
92. Will the project be affected by seismic faults, or fractures?
93. Do public school buses travel the road systems associated with the project site, and if so, how will traffic mitigations proposed by the applicant ensure safe and timely schedules for public school transportation needs?
94. What percentage of the project site is proposed for impervious surface, and how does this surface impact existing elements such as a sole water source or other aquifer?
95. Were underground storage tanks ever located on the site? If so, provide documentation that all underground storage tanks have been identified, located and appropriately removed by qualified professionals, using current techniques in compliance with 40 CFR Part 280.
96. Please respond to following issue: There is no analysis of induced growth, contrary to federal requirements, the public interest and common sense. It is not possible to rationally assess the impacts of the casinos without at least a general review of the buildout which will accompany it. Simply relying on local zoning is neither analysis nor mitigation of these growth-sprawl issues.
97. Will the project affect or be affected by nuisance odors? What mitigations are proposed?
98. Please respond to following issue: The pollution from such added traffic will damage air quality in the area, and exacerbate unhealthy conditions. Sullivan County residents already suffer from a disproportionate and growing number of respiratory problems. There is no justification for subjecting such individuals to a relatively sudden and serious deterioration in air quality and resulting threat to their health.
99. What mitigations are proposed to accommodate traffic generated by the proposed project with existing traffic counts and flows at and adjacent to the project site?
100. Are there proposed air pollution generators associated with the proposed project?
101. Are there visual indications of filled ground? What assurances has the applicant developed to ensure soil stability for construction footprint and impervious surfaces?

102. How will a project workforce impact local housing over-crowding and code enforcement conditions that might impact adjacent communities, projected over the next ten years?
103. Has a traffic study been developed for the proposed project that is specific to this site and this project, and not just generic to the proposed industry?
104. Are there established biking and pedestrian pathways at or near the vicinity of the project site, and if so, what mitigations does the applicant propose to ensure the safety and non-interference of use of these public pathways?
105. Does the project comply with 24 CFR 51, Subpart B that requires a Noise Assessment for proposed new construction?
106. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
107. Will the project influence or be unduly influenced by obsolete public facilities?
108. Is the project compatible with surround areas in terms of building type (low/high-rise)?
109. Describe the site elevations and any accommodations required for significant slopes.
110. Are there unusual conditions on the site?
111. Will the project influence or be unduly influenced by building deterioration?
112. Has the applicant studied the current housing stock and occupancy rates of adjacent communities?
113. Please identify by assessor parcel number and physical street address or location, each and all sites considered by the applicant, prior to selecting the subject site as the preferred site.
114. How will the applicant mitigate incinerators?
115. Are there current sanitary sewers and waste water disposal systems serving the site?
116. Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the vicinity of the project site?
117. What procedures or guidelines will be developed that allows community members or adjacent property owners to formally complain about inordinate or unanticipated noise?
118. Are there waste materials or containers on site?
119. How will the project impact existing public transportation facilities of the community?
120. Are other natural resources visible on site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project?
121. Is the project located in a predominantly minority or low-income neighborhood?
122. If the applicant proposed to construct hotel or motel facilities at or adjacent to the proposed project, please calculate the estimated impact of business to existing tourist facilities, and the projected hotel occupancy tax loss to adjacent local governments, over the next ten years.
123. Has a traffic study accommodated existing traffic counts experienced at the project site, and then projected appropriate increased traffic counts based upon days of the week, hours of the day or night, and special events?
124. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of hard (i.e., robbery, vandalism, assault) and soft (white-collar larceny, embezzlement, fraud) crime traditionally associated with the gambling industry entrenching into a community previously unaffected by gambling?
125. Please respond to following issue: Overall, the plan to site five casinos in the Route 17 corridor is an affront and danger to the existing communities. It is ironic that the remedy for their supposed problem - economic stagnation - is a wholly disproportionate influx of nuisances including casino gambling and induced growth, pollution traffic and social ills.
126. Are there usual and customary children's play areas within the vicinity of the project site?
127. Does the property's area of potential effects include an historic district or property?
128. What law enforcement and public safety plans have been developed for the proposed project that will be commensurate with area law enforcement and public safety needs projected over a ten year period?

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 25 2005

Mr. Mitchel R. Krasnoff
85 Bushville Swan Lake Road
Ferndale, NY 12734

Dear Mr. Krasnoff:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You provided a form letter with a place to add your name and address, listing 128 questions about the project. We are not answering each question by number since most are clearly addressed in the DEIS. Please read the DEIS where you will find your questions answered. We have already provided a copy of the DEIS CD ROM to a member of your household. The Adobe Acrobat version can be searched for key words to assist you in your quest for more knowledge about the project. If you still find unanswered questions, please consider that such questions may not be related to the project's potential impact. Each Federal agency is required by the National Environmental Policy Act to establish its own standards and requirements to fulfill the law. This DEIS meets the standards established by the Bureau of Indian Affairs and analyzes the relevant potential impacts required by the Bureau.

Your questions appear to be centered around a few primary areas so we will attempt to help you understand the controls and mitigations that are designed to minimize impacts in these areas.

The project site was subjected to an Environmental Site Assessment (ESA) according to standards established by the American Society of Testing Materials (ASTM). There were numerous environmental concerns resulting from previous uses of the property where we required correction. The automobile salvage yard and mining operation have since been remediated to standards established by the State of New York and verified by a Federal environmental professional. As trust property, the site would be subject to all environmental regulations established by the Environmental Protection Agency (EPA). Potential operational environmental impacts are therefore subject to EPA control.

Since the potential impacts are projections into the future, where there is no available data, our projections may be limited, but we can still have controls built into the process. As an example, the potential impacts of five casinos are not known at this time but controls are built into the process to provide mitigation for such unknown impacts. The Bureau of Indian Affairs has only received applications from three tribes, so projecting impact beyond the known data would be pure speculation. We must consider potential impacts, but we also must consider whether the

project provides the means of mitigating potential impacts. By building controls into the process, even such unknowns can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues that you are concerned about, such as crime and other social issues. Each tribe also has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K Lampe

ACTING Director, Eastern Region

NOTES 3/18/05

Mr Keil;
Kurt Chandler;

RE: Draft environmental impact statement
Stockbridge Waxman
Casino
Town of Thompson
Sull Co N.Y.

Question How do the construction sites plan to provide septic and sanitary accomodations for the workers until they have completed their work. Where do they plan dispose of this waste?

M. Krasnoff
85 Bushville-Swanlake Rd
Ferndale N.Y. 12734

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 12 2005

Mr. Mitchel R. Krasnoff
85 Bushville Swan Lake Road
Ferndale, NY 12734

Dear Mr. Krasnoff:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You ask how the construction site plans to provide septic and sanitary accommodations for the workers, and where do they plan to dispose this waste. Page 15, Section 2.2 provides this information. Portable toilets will be contracted for use on site with the waste disposal determined by the contractor.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

3/23/05

03-28-05P02:36 RCVD

Mr. Keel,
Mr. Chandler,

I am part of the environment. I am impacted by the proposal. I experience anxiety, fear distrust. I worry about not having a say in my future and the use and loss of my Country's land.

How can you tell me "Its OK"?

I feel that my peace of mind and freedom that I enjoy moving thru and about my Country (Sullivan) is being threatened, and this is by a foreign source that doesn't recognize the laws & rules that I and the other citizens here do. This foreign source is to promote a VICE on a Grand Scale. This threatens me, the Sullivan County Citizens and the environment

that we all live in, and which we will have to share with God knows who & what we are all impacted by it, so I ask again, how do you say, "Oh, it'll be OK"? and make it believable

MITCHEL R KRASNOFF
55 Bushville-Swankuko Rd
Ferndale N.Y. 12734

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Mr. Mitchel R. Krasnoff
85 Bushville Swan Lake Road
Ferndale, NY 12734

Dear Mr. Krasnoff:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You note that the potential for casinos in Sullivan County impacts your peace of mind, and that you believe that they promote vice on a grand scale. Your concerns will be taken into consideration.

Your note indicated that you consider the tribes to be foreign to Sullivan County. Please consider that Sullivan County was part of the Six Nations (Iroquois) territory for hundreds of years. It is true that the Stockbridge-Munsee land claim does not include Sullivan County, nor is the Bureau of Indian Affairs aware of Mohican historical sites within Sullivan County. While the casino is off-reservation, the Indian Gaming Regulatory Act allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

451A Little Britain Road
Newburgh, NY 12550

Fax (845)565-3099

Hudson Valley Building and Construction Trades Council

BUILD IT UNION

L.Todd Diorio *Laborers Local 17* President
Steve Quaranto *Sheet Metal Workers Local 38* Vice President
James Malcolm *Carpenters Local 19* Vice President
Tony Speziale *I.U.P.A.T. D.C.9* Vice President
Sam Fratto *IBEW Local 363* Vice President
Bob Ambrosetti *Plumbers and Steamfitters Local 373* Treasurer
Mike Gaydos *Ironworkers Local 417* Recording Secretary

RECEIVED
MAR 16 2005
By

March 11, 2005

Mr. Franklin Keel
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart's Ferry Pike
Nashville, TN 37214

Dear Sir:

Last night I had the opportunity to attend and speak at the public hearing in reference to the DEIS related to the Stockbridge-Munsee project in Rock Hill New York.

The ability for people to comment publicly and by writing to the Bureau of Indian Affairs has been open long enough. Everyone has had the time to comment and there is still over two weeks remaining if they wish to do so. Many of the anti-casino supporters will be sending letters to the Bureau of Indian Affairs asking for a 45-day extension to the comment period. This is just another stall tactic by this small anti-group. If they had real issues they would be putting them in writing instead of prolonging this process.

On behalf of the 30 trade locals and 25, 000 members I represent, I urge you not to extend the comment period any longer.

Sincerely,

L. Todd

L. Todd Diorio
President

Boilermakers Local 5 • Bricklayers Local 5 • Tile, Marble & Terrazzo BAC Local 7 • Roofers Local 8 • Painters DC 9 • Laborers' Local 17 • Carpenters Local 19 • Plumber and Steamfitters Local 21 Operating Engineers Local 30 • Sheetmetal Workers Local 38 • Asbestos, Heat & Frost Local 40 • Sheetmetal Workers Local 83 • Asbestos Workers Local 91 • Operating Engineers Local 106 • Operating Engineers Local 137 • Sheetmetal Workers Local 137 • Elevator Constructors Local 138 • Asbestos/Lead Workers Local 201 • IBEW Local 363 • Plumbers and Steamfitters Local 373 • Ironworkers Local 417 Teamsters Local 445 • Operative Plasterer and Cement Mason's Local 530 • Road Sprinkler Fitters Local 669 • Millwrights Local 740 • United Cement Mason's Union Local 780 • Operating engineers Local 825 • Laborers' Local 1000 • Millwrights Local 1163 • Resilient Floor Coverers Local 2287

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 18 2005

Mr. L Todd Diorio
Hudson Valley Building and Construction Trades Council
451A Little Britain Road
Newburgh, NY 12550

Dear Mr. Diorio:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have noted that the request for an extension of the public comment period by other persons is not justified and is only a "stall tactic". After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Dear Franklin Reel,

I am a mother of young children. My husband and I chose to live in Sullivan County, to enjoy the beauty of the countryside while raising our children in a quiet, peaceful environment.

It is with great distress that we are being informed of casinos opening in our area. One would be devastating, let alone five! Sullivan County would no longer be the pleasant area which its residents enjoy. There would be all kinds of low class people - wild people zooming around. Imagine how much more traffic there would be and consequential accidents. There would be a rise in crime and addictions.

Do we want this to happen to our county? How many of Sullivan County's peace loving citizens will remain here? We are happy here, and do not want to move. Please reconsider all gambling plans and its impact on the community, before making any final decision.

Thank you for your kind consideration to this matter.

Sincerely,
Judith Weiss

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Ms. Judith Weiss
No Address Provided
Fax: (845) 434-1009

Dear Ms. Weiss:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your concerns appear to be crime, traffic and impacts on community character.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

Casino designers worked with local planners to minimize the traffic impacts the casino may have on the local population. In Sullivan County the traffic impacts from the casino are expected to be minimal due to these mitigation measures. While some potential impacts are unavoidable, the casino designers put in a great deal of thought into site selection, selecting a site close to Route 17, to minimize impacts. The local mitigation agreement between the Tribe and local government provides 15 million dollars annually to cover any increase in local costs for schools, local roads and social services such as gambling addictions due to the casino. The Tribal-State compact required by the Indian Gaming Regulatory Act (IGRA) is intended to mitigate impacts under State control. If the State chooses to the funds as intended by IGRA, the traffic and related safety and air quality along Route 17 should improve.

Regional growth and increased commerce are projected side effects of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Confirmation Report - Memory Send

Page : 001
Date & Time: 22-Apr-2005 08:50am
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	785
Date	:	22-Apr 08:42am
To	:	☎88454341009
Number of pages	:	002
Start time	:	22-Apr 08:42am
End time	:	22-Apr 08:44am
Pages sent	:	002
Status	:	OK

Job number : 785 *** SEND SUCCESSFUL ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Ms. Judith Weiss
No Address Provided
Fax: (845) 434-1009

Dear Ms. Weiss:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your concerns appear to be crime, traffic and impacts on community character.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

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dear sirs,

my name is meir weiss. i am eight years old. i live in sullivan county. i love living here, and growing up here. i go to school here. i heard my parents talking. they said there will soon be casinos here. that means sullivan county will change. our neighbors might be very bad people. i do not want that to happen! i do not want my parents to decide to move! i love it here. please do not allow gambling to happen here.

love,
meir weiss

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Ms. Meir Weiss
No Address Provided
Fax: (845) 434-1009

Dear Ms. Weiss:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You note that your parents may move if casinos are approved in Sullivan County. They believe bad people may move into your neighborhood. You do not want to move.

If the casino is approved, more people will move to Sullivan County. Some of them may not share the same values as your parents. The Bureau of Indian Affairs will take your viewpoint into consideration.

We appreciate the fact that you, as an eight year old, have taken the time to prepare a letter to express your views on the proposed casino. We commend you; you have made a good start to being a participative citizen of the United States.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Confirmation Report — Memory Send

Page : 001
Date & Time: 22-Apr-2005 08:44am
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	778
Date	:	22-Apr 08:39am
To	:	☎88454341009
Number of pages	:	001
Start time	:	22-Apr 08:41am
End time	:	22-Apr 08:42am
Pages sent	:	001
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Job number : 778 *** SEND SUCCESSFUL ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Ms. Meir Weiss
No Address Provided
Fax: (845) 434-1009

Dear Ms. Weiss:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You note that your parents may move if casinos are approved in Sullivan County. They believe bad people may move into your neighborhood. You do not want to move.

If the casino is approved, more people will move to Sullivan County. Some of them may not share the same values as your parents. The Bureau of Indian Affairs will take your viewpoint into consideration.

We appreciate the fact that you, as an eight year old, have taken the time to prepare a letter to express your views on the proposed casino. We commend you; you have made a good start to being a participative citizen of the United States.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Dear Franklin Reel,

Several years ago, I heard about Indians settling in Sullivan County. A friend of mine, who was at that time a Sullivan County resident, has been working with one of the Indian chiefs. For several years they have been growing hydrapholic lettuce.

It seems as if the area in which this is taking place, has been given to them as a tribe settlement. However, this land is off-reservation. These tribes are foreign to our community. We have no tribal lands here.

What is most disturbing, is the course which this is taking. Why are hydrophollic lettuce now sprouting into casinos? Can a peaceful agricultural project, blossom into gambling? Will we quietly sit back and watch our county crumble by activities that are a perversion of Federal law?

When the white men came to America, they civilized our land and developed a peace loving country. Will the Indians be allowed to once again take over? They will "scalp" our standard of morality, chanting songs of crime and addictions. Please put serious thought into this issue, and STOP the development of casinos.

Sincerely,
Abraham Weiss

P.S. As for my friend, his family moved out of the state, and he travels back and forth. So, what does he care? He just collects the cash!!

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Mr. Abraham Weiss
No Address Provided
Fax: (845) 434-1009

Dear Mr. Weiss:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You note that you have a friend that worked with a tribal project growing hydroponic lettuce in Sullivan County. You ask how an agricultural project could grow into a casino. The Bureau of Indian Affairs is not aware of any relationship between the two projects.

Your first concern appears to be that the proposed casinos for Sullivan County are off-reservation. Many American Indian tribes have had a long history of poverty and lack of economic opportunity. Congress recognized that the physical locations of reservations limit tribal income generation capabilities and passed the Indian Gaming Regulatory Act (IGRA) to specifically address that problem. IGRA provides that federally recognized tribes have the right to establish a casino in their home state, if that state already has any form of legalized gambling, including a State lottery. New York already has a State lottery, and the State legislature authorized casinos in the Sullivan County region. The Stockbridge-Munsee Community Band of Mohican Indians currently reside in Wisconsin instead of New York as they once did, but filed a land claim for the loss of their former treaty property in New York. While all of the proposed Tribal casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large

Your second issue appears to be standards of morality, crime and addictions. Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local

communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather. The Tribe's mitigation agreement with local government annually provides 15 million dollars to mitigate any perceived impact that the casino may have. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions, local roads and increased load to community services and police that may be associated with the casino.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Confirmation Report — Memory Send

Page : 001
Date & Time: 22-Apr-2005 08:47am
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

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Date	:	22-Apr 08:41am
To	:	☎88454341009
Number of pages	:	002
Start time	:	22-Apr 08:42am
End time	:	22-Apr 08:43am
Pages sent	:	002
Status	:	OK

Job number : 781 *** SEND SUCCESSFUL ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Mr. Abraham Weiss
No Address Provided
Fax: (845) 434-1009

Dear Mr. Weiss:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You note that you have a friend that worked with a tribal project growing hydroponic lettuce in Sullivan County. You ask how an agricultural project could grow into a casino. The Bureau of Indian Affairs is not aware of any relationship between the two projects.

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New York State Department of Environmental Conservation
Division of Environmental Permits, 4th Floor
625 Broadway, Albany, New York 12233-1750
Phone: (518) 402-9167 • **FAX:** (518) 402-9168
Website: www.dec.state.ny.us

Denise M. Sheehan
Acting
Commissioner

March 28, 2005

Mr. Franklin Keel, Regional Director
Eastern Regional Office
Bureau of Indian Affairs
711 Stewarts Ferry Pike
Nashville, TN 37214

Re: **Proposed Stockbridge - Munsee Casino**
Town of Thompson, Sullivan County
(DEC No. 3-4846-292/1)

Dear Mr. Keel:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the Stockbridge - Munsee Casino proposed for the Town of Thompson in Sullivan County. The expansion of the Environmental Assessment into a full Draft Environmental Impact Statement provides more detail and addresses the Department of Environmental Conservation's previous comments, provided in letters dated January 29, 2003, October 3, 2003, October 6, 2003 and December 15, 2003.

As you are aware, Governor Pataki has requested that the New York State Legislature approve an additional two casinos in the Sullivan County area. If approved, these additional casinos may change the cumulative impacts of the casinos in regard to such issues as water, wastewater, traffic, air quality and induced growth. The Department urges the Bureau of Indian Affairs to ensure that appropriate consideration be given to the cumulative impacts that five casinos may have on the environmental resources and infrastructure in this region to the extent such information is reasonably available. Ideally, one comprehensive analysis of the cumulative impacts of five casinos in Sullivan County should be prepared and this analysis should be included as a part of each casino's environmental record. We understand that the additional two sites for casino developments are expected to be proposed imminently, which would help enable a realistic assessment that includes considerations for these additional sites. We look forward to reviewing any new information when it becomes available for this and any other subsequent casino proposal.

We understand that the Stockbridge - Munsee are currently developing such an analysis to be included in their Final Environmental Impact Statement. We applaud this effort. This could be the framework for additional cumulative impact analysis of future casinos. Any cumulative impact analysis undertaken should be done in the context of relevant comprehensive resource management plans including the joint Comprehensive Plan for the Village of Monticello and the Town of Thompson adopted in 1999, and relevant state and local transportation plans.

Once again, thank you for the opportunity to comment on this document.

Sincerely,

Charles B. Gardner

Charles B. Gardner
Environmental Analyst II

c: G. Allen
G. Bruening
M. Moran
P. Duke
M. Naughton

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 0 8 2005

Mr. Charles B. Gardner
New York State Department of Environmental Conservation
Division of Environmental Permits, 4th Floor
625 Broadway
Albany, NY 12233-9168

Dear Mr. Gardner:

Thank you for providing comments on the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We would like to address your comments as follows.

(1) *An analysis of the potential impacts of five casinos should be prepared, ideally as one comprehensive analysis.*

As already noted in the DEIS, the Final Environmental Impact Statement (FEIS) will include additional information. The regulation 40 Code of Federal Regulations 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. As stated in the DEIS, information is currently unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos.

The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that all the proposed casinos will have similar drawing power and will be located within Sullivan County close to Route 17. Since the specific size and location of two of the proposed casinos are unknown, it would be irresponsible to attempt to project full quantitative impacts that would be subject to considerable error.

The Federal action triggering the National Environmental Policy Act (NEPA) is the fee-to-trust transfer process for each individual tribal casino property. Each requires a separate analysis for these individual decisions. The additional narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

The Indian Gaming Regulatory Act (IGRA) built controls into the process so that even the unknown impact of five casinos can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments is intended to cover the local issues, such as school impacts, crime and other social issues. Under IGRA each tribe also has to make a compact with the state where the casino is located. The intention of a state compact under IGRA is for the mitigation of potential impacts under state control. IGRA disallows payments to the state in lieu of taxes. State compacts commonly take a fixed percentage of slot machine revenues. This proportional' funding provides proportional mitigation for any state-controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

(2) *Any cumulative impact analysis undertaken should be done in the context of relevant comprehensive resource management plans including the joint Comprehensive Plan for the Village of Monticello and the Town of Thompson adopted in 1999, and relevant state and local transportation plans.*

Your recommendation will be forwarded to the contractor for inclusion in the FEIS as appropriate.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Robert K. Gaffney

ACTING Director, Eastern Region

Box 487
So. Fallsburg, NY 12779
March 17, 2005

RECEIVED
MAR 21 2005
By

To: Mr. Franklin Keel
Director
BIA Eastern Regional Office
Nashville TN

RE: Draft EIS of Stockbridge-Munsee Proposed Casino at Bridgeville, NY---Sullivan County

Dear Mr. Keel:

We are very, very concerned with the environmental impacts (as well as social and economic) of the proposed casino---and , of course, of all five proposed casinos.

We request an extension of the deadline of the DEIS to May 12th so that proper study of it and an expert response can be done.

We also request a study of the cumulative impacts of all five casinos. This must be done. Even Governor Pataki is asking for this.

Thank you very much, and we do hope fervently that you grant the deadline extension request.

Yours truly,

Shyama Schafer

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 24 2005

Ms. Shyama Schafer
P.O. Box 487
South Fallsburg, NY 12779

Dear Ms. Schafer:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have requested an extension of the public comment period for this project. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K [illegible]

ACTING Director, Eastern Region

3/21/05

To: Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional office
711 Stewart Ferry Pike
Nashville TN
Attn: Kurt Chandler

I've been living in Sullivan County for over 5½ years and I'm hearing that people that are strangers to our peaceful community are trying to build casinos in our community. "Where is the world holding". Don't people realize that these unwanted casinos will destroy me, my wife and my 4 children. We are already struggling with the high taxes and we don't need more things to higher them. We are already suffering from traffic on the 17 in the summer and these people want to kill it for us in the winter also. "Where is the world holding". I could go on and on but words can not express my feelings towards these casinos. I hope that these casinos don't ever happen for the sake of my self my family my community and for the sake of the whole world.

Phil E. Heinemann
53 Laurel Park Rd Apt C13
Fallsburg N.Y. 12733

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 0 1 2005

Mr. Phil Heinemann
53 Laurel Park Road Apartment C-13
Fallsburg, NY 12733

Dear Mr. Heinemann:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You express concern that unwanted casinos will destroy you, your wife and children. You say that you do not need anything else that would raise your taxes. The casino should have no direct impact on the amount of local taxes you pay. The Tribe has a local mitigation agreement that is intended to offset any increased costs associated with the casino. The local mitigation agreement provides $15,000,000 annually to cover any increase in local costs for schools, local roads and social services such as gambling addictions due to the casino. Induced regional growth and an expanding economy is a projected side effect of the casino. You would have to consult with your local government representatives to determine whether regional growth would impact your local taxes.

Your State taxes should not be impacted by the casino, although the casino will result in a large increase in State revenues through the Tribal compact and induced regional growth. The land claim settlement agreements signed between the State and Indian tribes will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. Some of these land claim settlements include supporting a casino as part of the settlement. One alternative to allowing casinos would be to pay the tribes for these taken tribal lands. The choice for the State may come down to (1) receiving large sums of money by supporting tribal casinos or (2) paying out large sums of money to settle these land claims. New York State residents who oppose any State tax increase as a means to balance the State budget may also support tribal casinos, due to the revenues the casinos would provide to the State.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

County Fountain Supplies, inc.

P.O. Box 162 • 31 Pleasant Street • Monticello, New York 12701
(845) 794-4266 • FAX: (845) 791-4565

March 17, 2005

Mr. Franklin Keel, Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart's Ferry Pike
Nashville, TN 37214

Dear Mr. Keel

Thank you for taking the time to listen to all of us at the recent hearing in Monticello. I'm sure after listening to the majority of the crowd supporting this project, you realize how important it is for it to move forward as quickly as possible. Therefore, I see no reason to extend the comment period beyond March 28th. Any assistance you can render to help move this project along will be greatly appreciated.

Respectfully,

Gary Tugender
President

RECEIVED
MAR 21 2005
By

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 24 2005

Mr. Gary Tugender
County Fountain Supplies
P.O. Box 162
31 Pleasant Street
Monticello, NY 12701

Dear Mr. Tugender:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have noted that the request for an extension of the public comment period by other persons is not justified. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K [illegible]

ACTING Director, Eastern Region

25 Mar 05

MAR 24 '05

DAVID BRESLAUER
14 PARNESS RD AL
FALLSBURG NY 12733

FRANKLIN KEEL, REGIONAL DIRECTOR
BUREAU OF INDIAN AFFAIRS
EASTERN REGIONAL OFFICE
711 STEWART FERRY PIKE
NASHVILLE, TN 37214

DEAR SIRS:

PLEASE ADD OUR NAMES TO THE LIST OF SULLIVAN COUNTY RESIDENTS WHO VIGOROUSLY OPPOSE THE BUILDING OF ANY GABLING CASINO IN THIS COUNTY.

THE TRIBES WHO ARE PROPOSING TO BUILD HERE ARE ALL FOREIGN TO OUR COUNTY AND COMMUNITY — THERE ARE NO TRIBAL LANDS HERE. THE INTRUSION OF CASINOS AND THE RESULTING DEVASTATION WHICH WILL AFFECT BOTH THE ENVIRONMENT AND THE QUALITY OF LIFE IN THIS COMMUNITY IS TOTALLY UNWARRANTED.

AS LONG TIME RESIDENTS OF THE COUNTY WE ATTEST THAT WE KNOW NOONE WHO WILL BENEFIT FROM CASINOS AND WE ALL STAND TO LOSE VERY MUCH IN TERMS OF AIR QUALITY, POLLUTION, INCREASED TAXES, INCREASED CAR INSURANCE, INCREASED CRIME AND ADDICTION.

MANY OF OUR FRIENDS AND NEIGHBORS LIVE HERE BECAUSE OF THE FACT THAT THIS AREA IS NOT POLLUTED WITH CASINO-RELATED LIFESTYLES. ATTEMPTING TO SITE THE CASINOS IN SULLIVAN COUNTY IS A PERVERSION OF FEDERAL LAW, AND WOULD BE EXTREMLY DETRIMENTAL TO OUR COMMUNITY

SINCERELY,

DAVID BRESLAUER

DENA BRESLAUER

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Mr. David Breslaver
14 Parness Road Apt. A-2
Fallsburg, NY 12733

Dear Mr. Breslaver:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have expressed concerns about crime, addictions, the proposed casinos being off-reservation, pollution and insurance.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

The regional growth would include casino employees and related support service personnel. While some people applaud regional growth due to the economic benefits, others deplore it. The taxes that residents pay for community services are unrelated to the presence of casinos. Studies show that the induced regional growth and increased commerce provides increases in local and state tax revenues without raising taxes for residents. The Indian Gaming Regulatory Act (IGRA) disallows payments from the tribes to government agencies in lieu of taxes, but allows mitigation payments that are intended to directly address the impacts. The intention under IGRA is for the government agency that receives these payments to use them to do the roadwork, hire the personnel, or otherwise support the programs that may be impacted. Mitigation payments to the State through the Tribal-State compact are intended to cover issues such as Route 17 traffic and related air quality deterioration. The Tribe's mitigation agreement with local government annually provides 15 million dollars to mitigate any perceived impact that the casino may have. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is

intended to offset the costs of any social impacts associated with the casino, including gambling addictions, local roads and increased load to community services and police that may be associated with the casino. Regional growth also includes an inherent means of mitigation since any new resident that moves to the region would also pay taxes that support local services, just like everyone else. That distributes the cost of services to a greater number of people. The history of the region shows that it has been able to support a much greater number of people than it currently does.

Many American Indian tribes have had a long history of poverty and lack of economic opportunity. Congress recognized that the physical locations of reservations limit tribal income generation capabilities and passed IGRA to specifically address that problem. IGRA provides that federally recognized tribes have the right to establish a casino in their home state, if that state already has any form of legalized gambling, including a State lottery. New York already has a State lottery, and the State legislature authorized casinos in the Sullivan County region. The Stockbridge-Munsee Community Band of Mohican Indians currently reside in Wisconsin instead of New York as they once did, but filed a land claim for the loss of their former treaty property in New York. While all of the proposed tribal casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large.

Casino planners worked with the local government in developing local roadway modifications that are designed to minimize local traffic impacts. The Tribe will be paying for these modifications through the local mitigation agreement. Improvements that may be needed for Route 17 are up to the State government. The Tribe provides mitigation funds that are intended to mitigate such impacts through the Tribal-State compact. The State has the right to choose how and where to use these funds. If these funds are used as intended the traffic and air quality issues should be fully mitigated. While your insurance company can choose to do as it wishes, the roadway mitigations should prevent an increase in accident rates that would cause it to rise.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Fax Cover Sheet

This facsimile is being transmitted
from the office of the

Rock Hill United Methodist Church
254 Rock Hill Drive
PO Box 4
Rock Hill, NY 12775
Phone/Fax: (845) 796-2826
Email: rockhillfamily@in4web.com

To: Bureau of Indian Affairs
Attn: Kurt Chandler
615 467-2939

From: Pastor Steven M. Knutsen

Date: 3/27/05

Total # pages including cover: 6

May God bless you richly, now and always!

March 27, 2005

Pastor Steven M. Knutsen
PO Box 4
Rock Hill, NY 12775
(845) 796-3833

Mr. Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214

Dear Director Keel:

I am writing in regard to the proposed Stockbridge-Munsee casino site under consideration for Bridgeville, in rural Sullivan County, NY.

I have heard many of the arguments for and against the casinos coming to this area of New York State. My opinion is that they should not be allowed to locate here. Our communities are fragile, our residents would be adversely affected, and the Native American interests would not be best served by this plan of Governor George Pataki to locate five major Native American Indian owned gambling resorts all within this county.

I serve a United Methodist church with 196 precious members whose lives would be forever changed for the worse if even one casino were to be built. This plan to bring gambling to our locale is ill considered and opposed by most of the residents within Sullivan County.

I urge you to refuse the approval of the EIS #050047, Draft Environmental Impact Statement of the Stockbridge-Munsee Casino Project for Sullivan County, NY.

Sincerely,

Steven M. Knutsen

Steven M. Knutsen
Pastor, Rock Hill United
Methodist Church

Honorable Senator John Bonacic March 3, 2005

Thank you sir, for allowing me the opportunity to speak to this hearing committee in regard to my understanding of the impact of the governor's five casino plan for Sullivan County.

I know that the purpose of this hearing is not to discuss the pros or cons of the gambling issue but to assess the impacts of the proposed casinos for the people of Sullivan County, the surrounding counties, the rest of New York, and those beyond our state lines.

I have followed the development of the various casino proposals for several years and I have seen the effect that the ongoing negotiations between our county government, local town boards, business owners, trade union representatives, Native American tribes and nations, and the residents of our nearby communities have had on the people of Sullivan County and their relationships with their local elected officials. There is now a lack of confidence in the intent of some of our local representatives to truly bring forth workable plans that would be in the best interest for all the residents here in Sullivan County. It is most unfortunate that the six county legislators who recently voted to support the governor's five casino plan seem to think, as do many other elected officials in New York, that gambling can solve the economic problems of New York State. One very negative impact in this issue is the overwhelming dependence on gambling, here in New York, as a way to bring in increased revenue.

Sadly, the warnings are being ignored against our government's growing dependence on what is basically an extraction industry, and the trend is becoming even more widespread. Many Sullivan County citizens had called for a public voter referendum, and are still calling for a referendum, to better gauge the facts about where the people of Sullivan County stand on the matter of five huge gambling resorts being built here.

I state here that the relationship of the people of Sullivan County with our "five casino or none" approving legislators is a thing of negative impact because gambling itself is not a harmless entertainment option for anyone. Without a voter referendum to guide their decision, they have broken trust with their constituents. Inherent in gambling is losing. We must not take a chance, and I repeat, chance, on a plan for our people's future that depends on an industry whose very essence involves the loss for many for the gain of few. Gaming, gambling, whatever we deign to call it, is exploitative, the few get rich, the majority lose. That's it- that's the impact of gambling- the majority must always come out a loser- or gambling would not be profitable in the first place. That is the impact of casino gambling that scares me the

most because the people of Sullivan and beyond who can least avoid the tempting lure of "hitting it big" will only come away with less to spend on their personal and/or family needs.

I see first-hand every day the effects that even small-scale gambling has on the local folks. Time after time, in our local stores and other outlets, the lotto players and scratch-off ticket players walk away, not as winners, but as those who sought to win but did not. Many here, if not most, do not have the income to spare in fruitless pursuit of wealth, yet our state encourages them to "be in it to win it." The biggest negative impact is our being encouraged to gamble by those officials at the state and local level who see gambling as a viable answer to the state's economic woes, when, in fact, the product of gambling is the creation of losers. All across the board, we lose, because gambling brings false hope, even at the already preposterous level of ultimate false hope in its being the cure for an increasingly ill state budget. The state seems to be buying into that chancy premise of "hope" to a degree that scares us to whom gambling is abhorrent in the first place.

I, and many of the "Voice of the Electorate" (V.O.T.E.) people in Sullivan County here today, ask you, Senator Bonacic, to answer this: "Do we, as the citizens of Sullivan County, have the democratic right to a vote by way of a referendum on this matter of five casinos or not?"

We ask you to take the lead in securing our rights as citizens of Sullivan County and also as citizens of the State of New York."

Please, Senator, do your very best to help us. I thank for hearing me on this matter.

Sincerely,

Steven M. Knutsen
PO Box 4 Rock Hill, NY 12775
Pastor of the Rock Hill United Methodist Church

Main Identity

From: "Rock Hill UM Church" <rockhillumchurch@in4web.com>
To: "Mark H. Chatterton" <hnnyac@aol.com>
Sent: Friday, March 11, 2005 2:52 PM
Subject: An appeal

Dear Rev. Dr. Mark Chatterton and my brothers and sisters in Christ of the New York Annual Conference:
God bless you all.
I write to inform you of an impending bit of legislation which could wreck havoc on the fragile communities nearby and the people of Sullivan County, New York.
Governor George Pataki has proposed the development of five major Native American owned gambling casinos; all to be located within Sullivan County. In addition to relying even more heavily on gaming/gambling to salvage an increasingly ill state economy, he plans to settle land claims from tribes and nations (even two with no reservation lands in NY) in this manner. The Bureau of Indian affairs is soliciting comments up until Monday, March 28, 2005, on this matter.
I serve the people of the Rock Hill United Methodist Church, 196 precious souls whose lives will be forever changed if these casinos are allowed to be built. The first casino site which is under consideration is just up the next hill in Bridgeville, less than two miles from where we have our worship and ministry gatherings. This proposed site would, purportedly, settle the land claims of the Stockbridge-Munsee Band of Mohicans, from Wisconsin.
Could you pray for us? Could you do even more?
I urge you to write now to Governor George Pataki and ask him to reconsider his ideas about how best to settle the land claim issues of the Native Americans which are now facing the State of New York. We don't want to deny anyone (Native American or otherwise) fair treatment under the law, however, our social principles deplore gambling and there must be a more dignified way of serving all people while still providing for our future as the State of New York.
The nature of Sullivan County is predominately rural, with many low-income families. Jobs here can be difficult to come by. Those who want these casinos to be built point to the creation of many new jobs (and the resulting commerce) as a good reason to support the governor's plan. Unfortunately , most of these jobs would not even begin to meet the basic income levels needed for families to survive here in Sullivan County or elsewhere. Many businesses would be adversely affected, due to the draw of local incomes into the casinos rather than the existing local economy. Casinos are part of an extraction industry which relies on the losses of many to provide for the gain of few.
The roads, schools, hospitals, police, and emergency services within Sullivan County simply cannot handle the growth that would come if even one of these casinos was built.
Please research the matter yourselves or call me for more information (kindly leave a message if I'm not at home): Steve Knutsen (845) 796-3833.
You can address a letter to the governor at your convenience, however, I do want those of you who can, to write the BIA prior to March 28th.
The letters should be addressed to:

Mr. Franklin Keel, Regional Director
Bureau of Indian Affairs- Eastern Regional Office,
711 Stewart's Ferry Pike
Nashville, TN 37214
Attn: Mr. Kurt Chandler

phone: (615) 467-1700/fax (615) 467-2939

Try to get your letters in the mail prior to March 23, 2005. You can fax your letters up until Monday, March 28, 2005.
Please make reference (in your letters to Nashville) to the EIS #050047, Draft Environmental Impact Statement of the Stockbridge-Munsee Casino Project, Sullivan County, NY. Our ecology is threatened, our social fabric will be torn apart, our economy will suffer rather than prosper, and our government will decay at both the state and local level if these plans are allowed continue.
We ask you, as our brothers and sisters in Christ, to realize the connection that we share as United Methodists and stand against this threat to our decent way of life by writing a letter expressing your solidarity with us who are

in the very shadow of this proposed casino development.

Yours in Christ, only by the grace of God,
Steve Knutsen

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Mr. Steven Knutsen
P.O. Box 4
Rock Hill, NY 12775

Dear Mr. Knutsen:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have raised concerns about potential community character impacts. This is considered a social impact issue, subject to resolution through the local mitigation agreement.

The Indian Gaming Regulatory Act (IGRA) provides for mitigation of impacts through local government agreements and a compact with State government. In the local agreement between the Tribe and local government, the Tribe is paying 15 million dollars annually to mitigate for any perceived negative social impact the casino may have. That money is intended to offset the costs of any social impacts associated with the casino, including gambling addictions and increased load to community services and police that may be associated with the casino, as well as local roads and traffic impacts. The State compact is designed to mitigate all impacts under State control such as traffic and air pollution along Route 17. If these funds provided by the tribe are used by local and State governments to mitigate impacts as intended by IGRA, the local social issues and Route 17 issues should all be resolved.

Community character issues are subjective, with people having different preferences. While this will be taken into consideration, the legal right of participants often take precedence in the Federal decision making process.

One right that must be considered is the right for a tribe to have a casino under the IGRA. Many American Indian tribes have had a long history of poverty and lack of economic opportunity. Congress recognized that the physical locations of reservations limit tribal income generation capabilities and passed the Indian Gaming Regulatory Act to specifically address that problem. The IGRA provides that federally recognized tribes have the right to establish a casino in their home state, if that state already has any form of legalized gambling, including a State lottery. New York already has a State lottery, and the State legislature authorized casinos in the Sullivan County region. The Stockbridge-Munsee Community Band of Mohican Indians currently reside in Wisconsin instead of New York as they once did, but filed a land claim for the loss of their former treaty property in New York. The IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land

located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

As already noted in the DEIS, the Final Environmental Impact Statement (FEIS) will include additional information. The regulation 40 Code of Federal Regulations (CFR) 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. As stated in the DEIS, information is currently unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that all the proposed casinos will have similar drawing power and will be located within Sullivan County close to Route 17. Since the specific size and location of two of the proposed casinos are unknown, it would be irresponsible to attempt to project full quantitative impacts that would be subject to considerable error. The additional narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Rec'd 28 Mar 05

Tabak Family
Woodridge, NY 12789

March 28, '05

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214

Attention: Kurt Chandler

Dear Mr. Chandler,

I am writing in reference to the proposed gambling casinos for Sullivan County, NY. I sincerely hope that the casinos will not be approved. Please understand that we chose to live here because of the peace and quiet that this county offers. I understand that Native Americans have no valid claim to Sullivan County. Therefore, it is hard for me to understand why we would have a Native American run business in this area, which is not an Indian reservation or the likes. Please understand that a casino will bring immorality, pollution, crime and traffic, among other things to our area. We were hoping to raise our young children in a peaceful place with a moral atmosphere. We hope that you will consider the damage that this will do to our family and many other young families and choose not to legalize gambling in Sullivan County.

I appreciate the time you took to read this and hope that this plan can be avoided.

Thank you,

Mr. and Mrs. Tabak and family

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Memorandum for the Record

A comment letter was received within the published comment period for the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. This letter was received from:

Mr. and Mrs. Tabak

This comment letter did not have a return address, did not have a fax number, and did not have complete names. It was typed and not signed. It cannot be acknowledged so no reply is provided.

Realty

March 10, 2005

Dear Sir:

I have four grandchildren who enjoy going to Holiday Mountain year- round. Many hundreds of children and adults use Route 17 exits 107, 108 and 109 to get to Holiday Mountain and back. All visitors to this amusement area are in danger due to excessive traffic predicted in that area due to casinos. School busses also bring in neighboring school children. One who means to enjoy a fun day there should not have to worry about an accident due to traffic congestion and worse, due to a tired, stressed...and perhaps inebriated casino patron. This is presently a healthy entertainment for our children and teens in particular. Teens, including my grandson who is 16 and drives, are relatively inexperienced drivers. Overwhelmingly increased traffic will put our residents in harm's way.

Also, the air is fresh there, especially when shooshing down a slope. Diesel trucks and tour busses would contaminate our air considerably. Our children do not need to breathe their soot and other contaminants emitted. Surely we have enough people dying from lung cancer, asthma and other respiratory maladies in addition to heart attacks. We do NOT need this imported air pollution!
So, with any casino, our police will be busier with crime and traffic problems. Emergency vehicles will be busier. Worse, the coroner may be busier, too.
Our job as adults is to protect our children. There must not be a casino in this heavily trafficked area of Rt. 17.

In addition to the aforementioned comments, please extend the time when written comments can be received to May. This weighty issue is worthy of extending comment time for all parties.

Sincerely,

Sally J. Gladden
20 Pine Top Street
Woodridge, NY 12789
845-434-0209
email: G_sally@lycos.com

Real Estate Services
MAR 15 2005
BY:

RECEIVED
MAR 14 2005
By

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 24 2005

Ms. Sally J. Gladden
20 Pine Top Street
Woodridge, NY 12789

Dear Ms. Gladden:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You are concerned about the additional traffic along Route 17 exits 107, 108 and 109 that would be created by casino construction in the area. You believe that your grandchildren driving on the same roads as casino patrons would be in danger. While it is true that additional traffic would be created in the region, the casino designers have worked with local planners to minimize any dangers and minimize the traffic impacts as much as reasonably possible. It is not possible to eliminate all roadway dangers, and additional traffic added to any formerly rural setting requires adjustments by local townspeople. Tribal projects, such as this one, are not intended to add inconvenience or reduce safety for any person, although that can sometimes be an unintended side effect for any project. Project designers for tribal casinos take a great deal of care when designing local roadway changes to accommodate casino traffic, because they know how important it is to keep good public relations. Having a "good neighbor policy" is common for tribal casinos and this sensitivity to local public opinion makes tribal casinos take extra care to do things the right way. The Tribe will be paying for all local roadways changes necessary due to casino impacts in order to assure roadway safety, for both the benefit of casino patrons and local citizens.

You are concerned about air pollution caused by the additional traffic. Air quality impacts due to traffic are directly related to the amount of stop-and-go traffic encountered. With any increase in traffic there will be a small increase in air pollution, but smooth flowing traffic produces far less air pollution than congested traffic. Efficient traffic planning minimizes stop-and-go traffic to minimize air pollution. Casino project planners have worked with local government in developing roadway changes that minimize impact. Accordingly, Sullivan County air quality impacts are expected to be minimal. The project will not cause the Clean Air Act National Ambient Air Quality Standards to be exceeded in Sullivan County.

You are also concerned about crime and any additional police and emergency vehicles that may be needed. The local mitigation agreement requires the Tribe to pay 15 million dollars annually to pay for any additional local services needed as a result of the casino.

OFFICE	FIRO
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OFFICE	RD
SURNAME	PB
DATE	3/21
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You requested an extension of the public comment period for this project. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

(S) Robert K Impson

ACTING Director, Eastern Region

Z:620:KChandler:kc:03172005:6154671677Z:\Natural_Resources\Environmental\Letters & Memo's\Stockbridge-Munsee\sally gladden.doc:grs43_16/7

Eastern Regional Office
Mail Log – Out Going Mail
March 25, 2005
Environmental Quality Services
Mr. Kurt G. Chandler, Environmental Scientist

COPY

Ms. Sally J. Gladden
20 Pine Top Street
Woodridge, NY 12789

RE: Reply for concern of DEIS / Proposed Stockbridge-Munsee Casino (additional traffic on Route 17 existing on 107, 108 and 109).

Mailed by:
Ramah Red Wing, OA Clerk

0.06oz @ $0.37 cents

P. O. Box 100
Glenford, NY 12433
March 12, 2005

RECEIVED
MAR 17 2005
By

Mr. Franklin Keel, Regional Director
Bureau of Indian Affairs—Eastern Regional Office
711 Stewart's Ferry Pike
Nashville, TN 37214
Attn: Mr. Kurt Chandler

Dear Mr. Chandler:

Being a resident of New York State, I am well aware of the fiscal problems faced by our State government, the problem year after year of coming up with a budget in a timely fashion, the ever increasing taxes that are levied, etc. etc. Governor Pataki faces a difficult challenge, to say the least. Besides that, there is the on-going challenge of dealing with land claim issues from many Native Americans.

No one should be denied fair treatment under the law, and God alone knows all about the past history of our country in dealing with Native Americans. As our society has gradually become a gambling society, many Native Americans have seized upon what appears to be a wonderful opportunity to make lots of money—building and operating casinos. This has disturbed me for a long time. Casinos are part of an industry that extracts money from the many to provide for the gain of a few. Isn't there a better way to help Native Americans have their rightful share in the economy and to truly prosper than to establish casinos often at the expense of those people already in the area where they are built. The hope of many new jobs doesn't seem to work out as well as promised. The strain on the businesses and all the local services, to say nothing of the effects upon the ecology and the whole nature of the area, are incalculable until it's too late.

I am concerned particularly about the EIS #050047, Draft Environmental Impact Statement of the Stockbridge-Munsee Casino Project, Sullivan County, NY. Governor Pataki has proposed the development of five major Native-American-owned casinos all within the same county—Sullivan County which has a history of attracting many people from the New York City area to the large hotels that used to cater to their vacationing needs. Now, it appears that as these hotels have been fading out, casinos will replace them. I do not live in Sullivan County, but if I did I would be appalled. As a fellow New York Stater, I am expressing my dismay and concern for those who do live there. There has to be a better way to settle Indian land claims than to go in this harmful direction that our good governor is proposing.

Very truly yours,

Carol Wood

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 12 2005

Ms. Carol Wood
P. O. Box 100
Glenford, NY 12433

Dear Ms Wood:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You express concern that the support Governor Pataki has given to tribal casinos may be the wrong means of providing restitution to Indian tribes for land claims and a history of unfair treatment in our country. You also consider that casinos may be a harmful to Sullivan County, even though you live elsewhere in the State. You also believe that there should be other economic opportunities open to tribes.

You appear to be aware that Governor Pataki has signed five land claim settlement agreements with Indian tribes in recent months. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. Some of these land claim settlements include supporting a casino as part of the settlement. The monetary benefit to the State of New York for supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues. One alternative would be to pay the tribes for these taken tribal lands. The choice for the State may come down to (1) receiving large sums of money by supporting tribal casinos or (2) paying out large sums of money to settle these land claims.

Many Indian tribes struggle economically, and many Indians have a history of living in poverty. When reservations were established, many were intentionally located far from major population centers. This isolation has historically limited the economic opportunities for these tribes. Congress recognized this fact and established the Indian Gaming Regulatory Act (IGRA) to give tribes a chance to compete economically and have some means of supporting tribal social and health programs. IGRA allows Indian gaming in any state that already has legalized gambling. Since the State of New York has a lottery the State cannot discriminate against Indian gaming.

Before the State of New York considered the legalization of gambling they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes both the negative and positive potential impacts of casinos. It also documents the induced growth effect that causes regional growth and an expanding economy. The result is an increase in tax revenues for both state and local governments.

IGRA requires off-reservation casinos to receive the support of the local community. This support in Sullivan County is evidenced by the local mitigation agreement that provides $15,000,000 annually to mitigate any casino related impacts within the county. Many merchants in Sullivan County support the casino due to the projected economic opportunities related to regional growth. Sullivan County has a 30 year history of a declining economy. In the public hearing, long time Sullivan County residents told how their children, who grew up there, now have to live elsewhere in order to make a living. Many of the local residents who object to the project also object to regional growth. Others object to all forms of gambling. As with any public issue there are proponents of both sides. Tribes also fall on both sides of the gaming issue. Tribes with other economic opportunities such as mineral resources on their reservation or tourism may choose to avoid gaming. Other tribes that have few other economic opportunities embrace it as a means to support tribal social and health programs. For many tribes the choice is between having a casino and doing well financially or doing without and struggling economically.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Mr. Franklin Keel, Regional Director
Bureau of Indian Affairs- Eastern Regional Office,
711 Stewart's Ferry Pike
Nashville, TN 37214
Attn: Mr. Kurt Chandler

RECEIVED
MAR 17 2005
By

March 13, 2005

Dear sir:

Concerning EIS #058047 Draft Environmental Impact Statement of the Stockbridge -Munsee Casino Project proposed for Sullivan County, N.Y. I strongly object to the casino plan for the same reasons that the United Methodist Church opposes this project.
Addictive gambling hobbies as well as addictive drugs serve no benefit to the participants or the environment that surrounds such activities.
Gov. Pataki is clearly (to me) making a huge mistake if he supports this plan. If he does, I will not only not vote for him again but I will work actively against his election. This is all I can do to try to help save N.Y. from the fate of this casino project and the degradation of the Native Americans themselves.

Sincerely,

Alice Belt

Alice Belt
Copake, N.Y.

c.c. Gov. Pataki

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 0 1 2005

Ms. Alice Belt
P. O. Box 188
Copake, NY 12516

Dear Ms Belt:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You note that you strongly object to gambling and will work against the re-election of Governor Pataki for supporting gambling. The comment period for the DEIS is intended to solicit comments on the DEIS, and not the detriments or benefits of gambling.

You may be aware that Governor Pataki has signed five land claim settlement agreements with Indian tribes in recent months. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. Some of these land claim settlements include supporting a casino as part of the settlement. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues. One alternative would be to pay the tribes for these taken tribal lands. The choice for the State may come down to (1) receiving large sums of money by supporting tribal casinos or (2) paying out large sums of money to settle these land claims. In light of the State budget issues, you may understand why the Governor signed these settlement agreements.

The moral and ethics issues regarding casinos, while pertinent and substantial, must be placed behind the legal rights of the Tribe to have a casino in the Federal decision making process. Moral and ethics issues are also pertinent to the rights of tribes as sovereign Indian nations that were displaced from their homelands. The Sullivan County casino is a key ingredient in settling the Stockbridge-Munsee land claim with the State of New York. The Federal Indian Gaming Regulatory Act allows Indian gaming in any state that already has legalized gambling. It is discrimination to allow any other type of gambling (including state lotteries) while disallowing Indian gaming. Since the State of New York has a lottery the State cannot discriminate against Indian gaming.

Your letter associates gambling addictions with the Stockbridge-Munsee casino. In the local agreement between the Tribe and local government the Tribe is paying $15,000,000 annually to mitigate for any perceived negative social impact the casino may have. The Tribe is sensitive to the needs of the local community and is making every effort to display a good neighbor policy. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions and increased load to community services and police that may be associated with the casino.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

March 10, 2005

Franklin Keel
Director
Eastern Regional Oggice
711 Stewart's Ferry Pike
Nashville, TN 37214

Real Estate Services

MAR 1 5 2005

BY:

Realty

Dear Mr. Keel,

I am writing to request an extension for the written comment phase of the EIS 050047, Draft EIS Stockbridge-Munsee Casino Project. Please review this letter, and hopefully others you have received, and decide to extend this phase until May 12, 2005.

I am requesting this so that adequate time may be given for concerned parties to review the document and respond with the depth that such a serious matter requires. The area of Sullivan County concerned in this EIS is as fragile as it is lovely. Further review is needed to ensure that proper consideration is given to it's protection.

Thank you for your consideration.

Sincerely,

Lauren Dougherty

Lauren Dougherty
19 Lake View Ct.
Rock Hill, NY 12775

RECEIVED
MAR 1 4 2005
By

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 18 2005

Ms. Lauren Dougherty
19 Lake View Ct.
Rock Hill, NY 12775

Dear Ms. Dougherty:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have requested an extension of the public comment period for this project. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

PO Box 253
So. Fallsburg NY 12779
March 10, 2005

Franklin Keel
Director
BIA Eastern Regional Office
711 Stewart's Ferry Pike
NASHVILLE TN 37214

Realty Real Estate Services
MAR 15 2005
BY:

RE: Stockbridge-Munsee DEIS public Comment deadline EXTENSION

Dear Mr. Keel —

I am writing to REQUEST an extension of 45 days for the public comment deadline on the Stockbridge-Munsee Casino project DEIS in Bridgeville, NY to MAY 12TH.

We really need this time to do a proper review of such a huge document — & the project has such profound environmental concerns raised for our area. We're doing the right thing, having the experts look it over — but we need more time, please, sir. —

Thank you —

Tina Hazarian
Resident of Sullivan County
Homeowner
Business owner

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MAR 14 2005
By

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 18 2005

Ms. Tina Hazarian
PO Box 253
South Fallsburg, NY 12779

Dear Ms. Hazarian:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have requested an extension of the public comment period for this project. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

7714 Route 11
Narrowsburg, NY 12764
March 16, 2005

My name is Lorraine B. Halloran I live at 7714 Route 97 Narrowsburg, New York. I have been a resident of the community for _18_ years.

I am very concerned with the level of air pollution which the five planned casinos will cumulatively cause, in particular ground level ozone and particulates from the millions of traffic trips that these facilities will generate annually.

I have severe asthma, and have been afflicted since 1986. At times I have serious difficulty breathing. I take Advair Disk's inhaler 100/50 two times a day, and Singular (pills) once a day at night.

I travel throughout Sullivan and Orange Counties for medical attention, particularly to the Catskill Regional Medical Center in Harris and to Middletown. I have to take Route 17 B and Route 17 to get to Middletown every other week, unless I'm having problems, in which case I go every week.

During a bad attack, if circumstances prevent me from getting immediate or very prompt help, I might die. I have emergency Albuterol inhalers in my car, my pocketbook and throughout my home because if I have trouble it is hard to talk to have my husband get it for me. My doctor suggested having it close by at all times. One trigger for an attack is air pollution from automobile and diesel exhaust fumes. When I inhale too many fumes or chemicals I have to use my Albuterol emergency inhaler every 4 hours.

For these reasons, the increased traffic and pollution from several casinos would be a multiple threat to my health. First, the pollution is a trigger for asthma attacks. Excitement or stress is a second trigger. If I'm sitting in traffic, potential feelings that my breathing is laboring could themselves cause an attack due to my very concern for the immobility.

The environmental statement's failure to look at the impacts of all of the casinos is an affront to me. The assertion that there will be no impact of multiple casinos on traffic congestion, air pollution or sprawl is ludicrous and unworthy of serious consideration. The prospective casino development, without adequate review or mitigation threatens my health. I moved to Sullivan County from my previous home in Metuchen, New Jersey specifically to escape the air pollution and fumes which plagues the metropolitan area.

Sincerely
Lorraine B Halloran

RECEIVED
MAR 21 2005
By

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 0 1 2005

Ms. Lorraine B. Halloran
7714 Route 97
Narrowsburg, NY 12764

Dear Ms. Halloran:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your first concern is the potential air pollution from five casinos in the region. While the Governor of New York has signed land claim settlement agreements with five tribes, that is no guarantee that each of these documents will result in a casino being built in Sullivan County. Congress still has to approve these land claim settlement agreements. The Bureau of Indian Affairs has only received applications from three tribes, so the potential impact from these potential casinos are still not known. The size, location and drawing power of the casino make a large difference in the potential impact. Such unknown information prevents an accurate analysis of the potential impacts of five casinos. The Final Environmental Impact Statement will present as much information as possible, but it may not include an accurate prediction of impacts from five casinos due to the unknown information.

The Indian Gaming Regulatory Act (IGRA) built controls into the process to anticipate such potential impacts due to such unknown information. By building controls into the process, even such unknowns can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues, such as crime and other social issues. Each tribe also has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

It is obvious from your comments that your serious health issues are a real concern, and that additional traffic could interfere with receiving timely medical care. Tribal casinos are projected to be a large funding source for the New York State government. The funds provided through the State compact are intended to mitigate issues such as traffic related impacts that are under State control. If the State chooses to use the money as IGRA intended, the additional traffic lanes along Route 17 would alleviate rather than exacerbate Route 17 traffic congestion and air quality

problems. Predicting Route 17 impacts are subject to large errors because the State has the right to choose how to use the mitigation funds. The degree and kind of mitigation the State may choose can vary significantly. State compacts are negotiated separately from the NEPA process and the details are usually not known until after NEPA is complete. That is why such information cannot be included in the mitigation details in the DEIS.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Franklin Keel
Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart's Ferry Pike
Nashville, TN 37214

Dear Mr. Keel,

My wife and I attended the public hearing at Monticello High School on March 10, 2005. We listened to all the speakers and were pleased that the overwhelming majority of speakers and attendee's were in favor of the Stockbridge Monsee Band of Mohican Proposal.

In fact, I attend most of the public hearings regarding Indian Gaming. It is to my dismay that there is any resident in Sullivan County that would be apposed to this project. Part of their strategy is to delay, postpone and extend, anything which might set back this project.

The time for action is today. Everybody both pro and con has had ample time to express themselves. Please do not extend our comment period. All that must be said can be said before March 28. In all fairness the Indian Nations and the citizens of Sullivan County have waited long enough. Any unjust extension of time only compounds the expenses involved and depressed the spirits of those who believe these projects will revitalize our community.

Yours truly,

Raymond Nargizian

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MAR 18 2005
By

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 23 2005

Mr. Raymond Nargizian
38 Dura Drive
Monticello, NY 12701

Dear Mr. Nargizian:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have noted that the request for an extension of the public comment period by other persons is not justified, noting that their only purpose is to delay the project. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

ACTING Director, Eastern Region

MAR 17 2005

By

PO Box 185
Thompsonville NY 12784
March 16, 2008

Mr. Franklin Keel
Eastern Regional office Director
BIA
711 STEWARTS FERRY PIKE
NASHVILLE TN 37214

Dear Mr. Keel: RE STOCKBRIDGE-MUNSEE DEIS on CATSKILL CASINO PROJECT IN BRIDGEVILLE NY - REQUEST DEADLINE EXTENSION

I RESPECTFULLY REQUEST, AS A BUSINESS OWNER AND HOME OWNER IN SULLIVAN COUNTY — VERY NEAR THIS PROPOSED SITE - THAT THE DEDLINE FOR PUBLIC COMMENT BE EXTENDED TO MAY 12TH 2005.

WE NEED THIS EXTRA TIME FOR PROPER STUDY AND RESPONSE TO DEIS ON A PROJECT

THAT WILL TOTALLY AND FOREVER
ALTER THIS RURAL AREA.

PLEASE GRANT REQUEST FOR
DEADLINE EXTENSION.

THANK YOU.

MS. LOIS ALBRIGHT

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Ms. Lola Albright
PO Box 185
Thompsonville, NY 12784

MAR 18 2005

Dear Ms. Albright:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have requested an extension of the public comment period for this project. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

FAMILY FOOTCARE GROUP, LLP

MARC J. HUDES, D.P.M., D.A.B.P.S.
RICHARD A. RUBIN, D.P.M., D.A.B.P.O.P.P.M.
PAUL B. ATLAS, D.P.M., D.A.B.P.S.
NANCY ANN CONDRO, D.P.M., D.A.B.P.O.P.P.M.
GREGG K. ATLAS, D.P.M., C.W.S., D.A.B.P.S.

SULLIVAN COUNTY

427 BROADWAY, SUITE 2
MONTICELLO, NY 12701
(845) 794-7741
FAX: (845) 794-0228

COLONIAL SQUARE MALL
1987 ROUT 52, SUITE 7
LIBERTY, NY 12754
(845) 292-5200
FAX: (845) 292-2719

GROVER-HERMAN DIV.
CRMC
CALLICOON, NY 12723
(845) 794-7741

ORANGE COUNTY

772 EAST MAIN ST.
SUITE 2
MIDDLETOWN, NY 10940
(845) 343-FOOT (3668)
FAX: (845) 346-0587

400 STATE ROUTE 17M
SUITE 17
MONROE, NY 10950
(845) 492-TOES (8637)
FAX: (845) 492-2068

156 PIKE STREET
PORT JERVIS. NY 12771
(845) 856-7700

ULSTER COUNTY

112 SHOP RITE BLVD.
ELLENVILLE, NY 12428
(845) 647-1321

Realty
Real Estate Services
MAR 1 5 2005
BY:

Franklin Keel
Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart's Ferry Pike
Nashville, TN 37214

3/11/05

Dear Mr Keel,

I was at the public comment meeting at Monticello High School last night and from what I understand, there has been a request to prolong the decision making process on the Stockbridge-Muncee project. As I said before, we have waited too long already.
In my opinion, there is nothing more that has to be said for this project that has not already been said to move on from this point. Please do not delay this project any longer. We needed it 30 years ago , so we certainly need it now. Thank you for your time.

Sincerely,

Marc Hudes D.P.M.,D.A.B.P.S.

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MAR 1 4 2005
By

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 18 2005

Mr. Marc Hudes
Family Foot Care Group
427 Broadway, Suite 2
Monticello, NY 12701

Dear Mr. Hudes:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have noted that the request for an extension of the public comment period by other persons is not justified. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Mid-Hudson Group
P.O. Box 1012
Poughkeepsie, NY
12602

SIERRA CLUB
FOUNDED 1892

Roberta Clements
P. O. Box 406
High Falls, NY
12440

March 20, 2005

Franklin Keel, Director
Eastern Regional Office
Bureau of Indian Affairs
711 Stewart's Ferry Pike
Nashville, TN 37214

Fax (615) 467 – 1701

George Skibine
Director of Office of Indian Gaming
Bureau of Indian Affairs
United State Department of Interior
1849 C Street, NW, Mail Stop 4600
Washington D.C. 20240
Fax (202) 273 – 3153

Dear Sirs:

I am writing in support of a recent letter sent to you by attorney Philip Gitlin requesting an extension on the review period of the DEIS for the Stockbridge-Munsee Casino Project. (EIS #050047). As was noted, this is an extremely long document that requires thorough review and evaluation and a 45 day extension until May 12, 2005 is warranted. The development of casinos is a critical social and environmental issue in this region, and is also a new issue to this region, and should be given ample time to be reviewed, discussed, and commented on by the public.

Thank you so much for your attention to this matter.

Roberta Clements

Roberta Clements
Sierra Club Mid Hudson Group
Sierra Club Atlantic Chapter

RECEIVED
MAR 25 2005
By

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 1 2 2005

Ms. Roberta Clements
Sierra Club Mid-Hudson Group
P.O. Box 1012
Poughkeepsie, NY 12602

Dear Ms. Clements:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You requested an extension of the comment period. The comment period was not extended. All comments must have been received by March, 28 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

RABBI TZVI ABBA GORELICK
President - Yeshiva Gedolah Zichron Moshe
60 LAUREL PARK ROAD
FALLSBURG, NEW YORK 12733
Phone: 845-434-8125 Fax: 845-434-1009

March 27, 2005

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler

Dear Mr. Chandler,

As a resident of Sullivan County, New York, I am deeply disturbed with the plans for Indian Casinos. All the members of my congregation (over 780 individuals) are intensely opposed to gambling in our county.

It will be extremely disruptive to our lifestyle. At present, the rural ambiance of our area is conducive to our spiritual and physical well-being. Casinos will bring traffic congestion, pollution, noise and crime to a quiet peaceful region. On behalf of all our members I beg you to do all you can to stop the development of Indian casinos in Sullivan County.

Sincerely yours,

Rabbi Tzvi Abba Gorelick

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Rabbi Tzvi Abba Gorelick
Yeshiva Gedolah Zichron Moshe
60 Laurel Park Road
Fallsburg, NY 12733

Dear Rabbi Gorelick:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You believe the proposed casino projects will impact your spiritual and physical well being. You briefly mention traffic, congestion, pollution, noise and crime. In the local agreement between the Tribe and local government the Tribe is paying 15 million dollars annually to mitigate any perceived negative social impact the casino may have. The Tribe is sensitive to the needs of the local community and is making every effort to display a good neighbor policy. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions and increased load to community services and police that may be associated with the casino, as well as local roads and traffic impacts.

A potential impact from the casinos on community character is a very sensitive issue that can also be very subjective due to personal preferences. Concerning such issues the legal rights of the various participants usually takes precedence in the Federal decision making process.

You may be aware that several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790.

The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K [illegible]

ACTING Director, Eastern Region

Hankins AG
PO Box 285
Callicoon Center, NY 12724

Website: www.hankinschurch.org

urgent

facsimile

To:	**Franklin Keel, Regional Director**
Fax Number:	1 615 4672939

From:	**Rev. Robert J Paquet, Ph.D.**
Fax Number:	845-482-5864
Business Phone:	(845) 887-4597
Home Phone:	(845) 482-5864

Pages:	6
Date/Time:	3/11/2005 12:01:07 PM
Subject:	Casinos in Sullivan County NY

Franklin Keel, Regional Director

Bureau of Indian Affairs

Eastern Regional Office

711 Stewart Ferry Pike

Nashville, TN 37214

Attn: Kurt Chandler (615) 467-1677

GAMBLING: A MORAL ISSUE?

Please take the time to read this. It may not have all the statistical data you might like but it does contain some thoughts pertinent to the quality of life for the families and children of Sullivan County.

My name is Pastor Bob Paquet and I reside in Callicoon Center, NY. As a pastor and a citizen of Sullivan County I want to urge Governor Pataki, the members of the BIA, the Sullivan County Legislature, Senator Bonacic and members of the Housing, Construction, and Community Development Committee to consider the real issue pertaining to casinos and legalized gambling. It is a moral issue!

As the "government" (of the people? by the people? and for the people?) tries to determine how much money we should ask from the casino interests to deal with the *projected, expected and certain* increase in crime, counseling of problem gamblers, bankruptcy, abused children and broken families, little if any thought seems to be given to the people who will be affected. It has been falsely assumed by those advocating casinos that we will have casinos (against the will of the people) and the issue now being addressed seems to be, "Since history tells us *(a proven fact)* that there are many adverse consequences of legalized gambling, how do we placate the opposition, minimize the damage that will occur, and still make a lot of money? So what if a few lives are destroyed."

Please consider the real impact of five casinos on the residents of Sullivan County.
As those who represent us, you have a responsibility to consider the welfare of all the people. How many destroyed and ruined lives are you willing to allow? If your decisions only destroy one person is that allowed or must fifty or a hundred be destroyed? How much is a single life worth? If it was your son or daughter, or mother or father, what would it be worth? Is money more important than people's lives? There is an abundance of data documenting and substantiating the harmful effects of gambling on individuals, families and communities. I ask you how much is the life of an individual worth? Is legalized gambling justified for the sake of jobs and money when the lives of thousands of individuals could be destroyed?

Moreover, in a world where the definition of moral values is in question I want to remind you that from the founding of our nation moral values have been derived from the Judeo-Christian principles revealed in the Bible by the God of Abraham, Isaac and Jacob. I also want to remind you that when you approve of any legislation or create any laws you are in fact creating a value – by giving government approval or disapproval to a particular course of action you create a value. I realize that there are some of you who will say, "What does this have to do with anything? We can do whatever seems right in our own eyes. There is no God or life after death." To you I would say, "What if the Bible is true?" Death is universal among humans and if the Bible is true there are going to be some who will have a very rude awakening.

How can any of you believe that history will not repeat itself in Sullivan County? History, research, and competent scientific studies have shown multiple times that legalized gambling causes increased suffering for thousands. Yet, somehow the great State of New York, its Governor and many who represent us think that they can defy all odds and bring prosperity to our state by legalizing casino gambling. I am afraid that if you continue on the path you are going we will all, WEEP WHAT YOU ARE SOWING."

Please consider the following:
I. GAMBLING IS NOT LOVING OTHERS AS YOURSELF
Mark 12:28-31

"And one of the scribes came and heard them arguing, and recognizing that He had answered them well, asked Him, "What commandment is the foremost of all?" [29] Jesus answered, "The foremost is, 'Hear, O Israel! The Lord our God is one Lord; [30] and you shall love the Lord your God with all your heart, and with all your soul, and with all your mind, and with all your strength.' [31] "The second is this, 'You shall love your neighbor as yourself.' There is no other commandment greater than these."

Jesus commanded us to "Love our neighbors as ourselves." When you gamble or encourage gambling, you do not love your neighbor as yourself. You are trying to take something from your neighbor, for yourself, and he is getting nothing in return. For you to win at gambling, others must lose.

In addition to the monetary loss, gambling hurts homes and families in many other ways. In areas where casino gambling has been legalized, it has been reported that:

- **Gambling plays a part in 1/3 of divorces**
- **Domestic abuse cases increased over 300% in a 4-year period**
- **Calls to one Gulf Coast Women's Center crisis line in Florida doubled within 3 years after the introduction of Casinos.**

The National Gambling Impact Study Commission reported, ***"Children of compulsive gamblers are often prone to suffer abuse, as well as neglect, as a result of a parental problem or pathological gambling."***

After they legalized casino gambling in the state of Mississippi, pawn shops became the fastest growing business in the state, as people pawned their possessions to pay their gambling debts.

In Kansas City, the number of pawn shops increased from 4 to 38 after casinos came to the area (Judy Thomas, "Pawnshops, Casinos thrive in KC Market," The Kansas City Star, August 21, 1995, A1).

These are only a few of the devastating statistics.

Can we really say, "I love my neighbor when we are willing to contribute to the legal destruction of his life, the life of his children and family and the corruption of the community in which he lives?

II. GAMBLING PREYS ON THE POOR

Proverbs 14:21

He who despises his neighbor sins, But happy is he who is gracious to the poor.

Proverbs 14:31

He who oppresses the poor reproaches his Maker, But he who is gracious to the needy honors Him.

The Bible makes it very clear that we are not to oppress the poor. Gambling preys on the desperation of the poor:

According to the National Gambling Impact Study Commission:

- **Those with incomes less than $10,000 spend more on lottery tickets than any other income group.**
- **On the national average, lottery gamblers with household incomes under $10,000 bet nearly 3 times as much on the lottery as those with incomes of more than $50,000.**
- **High school dropouts spend 4 times as much as college graduates.**
- **When the lottery was introduced in Kentucky, the stores in one community reported a 17% drop I grocery sales.**
- **Gambling and lotteries in particular, are a tax on those who can least afford it.**

III. GAMBLING LEADS CHILDREN ASTRAY
Luke 17:1-2
" And He said to His disciples, "It is inevitable that stumbling blocks should come, but woe to him through whom they come! [2] "It would be better for him if a millstone were hung around his neck and he were thrown into the sea, than that he should cause one of these little ones to stumble."

The Bible, God's Word, says that we have a responsibility to teach children correctly, and that those who lead children astray will pay a terrible price - gambling hurts children.
George Meldrum of the Delaware Council on Gambling Problems says, "This is the first generation of kids growing up when gambling is legal and available virtually nationwide." The result? According to a Florida high school gambling survey in 1995:

- **90% of all teens surveyed reported gambling at some time in their life. 6.6% of them are already problem or compulsive gamblers.**
- **Nationally, 1 in 10 teenagers have a gambling problem and 1 in 8 college students do.**

IV. GAMBLING IS BASED ON GREED AND COVETOUSNESS
Exodus 20:17
"You shall not covet your neighbor's house; you shall not covet your neighbor's wife or his male servant or his female servant or his ox or his donkey or anything that belongs to your neighbor."
1 Tim. 6:9-10
"But those who want to get rich fall into temptation and a snare and many foolish and harmful desires which plunge men into ruin and destruction. [10] For the love of money is a root of all sorts of evil, and some by longing for it have wandered away from the faith, and pierced themselves with many a pang."
Why do people gamble? In a recent national poll, 2/3s of respondents stated that the reason they gamble is to win money. The Apostle Paul specifically warns us about the love of money, and God specifically forbids coveting what others own. Gambling breaks both of those commands. In addition, gambling also displays a lack of trust in God's provision and dissatisfaction in what He has already provided.
As a Christian, a pastor and a citizen of Sullivan County I oppose Casino gambling and will use whatever influence I have to encourage others to do the same. I will not call evil good nor will I call good evil.
Isaiah 5:20 *"Woe to those who call evil good, and good evil; Who substitute darkness for light and light for darkness; Who substitute bitter for sweet, and sweet for bitter!"*
According to the Bible the God-ordained purpose of government is to protect the welfare of its citizens and to suppress evil. State-sanctioned gambling does the opposite.
Romans 13:1-5 *" Let every person be in subjection to the governing authorities. For there is no authority except from God, and those which exist are established by God. [2] Therefore he who resists authority has opposed the ordinance of God; and they who have opposed will receive condemnation upon themselves. [3] For rulers are not a cause of fear for good behavior, but for evil. Do you want to have no fear of authority? Do what is good, and you will have praise from the same; [4] for it is a minister of God to you for good. But if you do what is evil, be afraid; for it does not bear the sword for nothing; for it is a minister of God, an avenger who brings wrath upon the one who practices evil. [5] Wherefore it is necessary to be in subjection, not only because of wrath, but also for conscience' sake."*
In conclusion, I urge you to consider the TOTAL IMPACT of casino gambling. Does the "money" justify the broken lives?

Pastor Robert J. Paquet, Ph.D. **bowtie1215@hvc.rr.com**
PO Box 285 **(845) 482-5864**
Callicoon Center, NY 12724

DOCUMENTATION TO CONSIDER
Ref: http://www.nyproblemgambling.org/
(The information below was taken from this website.).

The New York Council on Problem Gambling is a not-for-profit corporation, under contract with the State Office of Mental Health and Department of Health, dedicated to increasing public awareness about problem and compulsive gambling and advocating for support services and treatment for persons adversely affected by gambling.

Problem Gambling Information & Prevalence Studies

In the past decade alone, gambling opportunities have increased substantially in and around New York State. Further, the gambling industry is pursuing strategies to increase participation among the general population, and in particular is making active efforts to appeal to women, young adults and families through a variety of means. Gambling is also now available in New York State via the Internet and is accessible to underage persons.

Gambling has become such a mainstream activity across New York State that for many families, the caregivers of children (e.g. parents, grandparents and other family members) are the primary persons encouraging and/or enticing participation by underage persons (e.g. lottery or card playing, horse racing and sports betting, etc.). Moreover, as gambling is embedded in several cultures, it is introduced to many children very early in life. At the same time, gambling addiction among children remains largely unacknowledged by government and society as a whole. In fact, although gambling often begins as a recreational activity, for some teenagers and young adults, gambling can become a problem, like addictions to drugs, alcohol or tobacco.

Unlike alcohol or drugs, compulsive gambling has been called the "hidden disorder" because it is not detectable with a blood, breath or urine test and gamblers do not look different from their peers. This further complicates identifying a problem gambler until s/he has progressed into the late stages of the disorder. A teenager or young adult addicted to gambling may experience severe ups and downs, fail in school, steal money from parents, family members or others; and even commit crimes for money in order to gamble. A person addicted to gambling may also consider suicide as a way out.

The Council recently released a prevalence study conducted among the adolescent population to document the scope of problem gambling in New York. This study reviewed many aspects, including but not limited to, gambling participation among youth; the prevalence of problem gambling; the primary gambling activities presenting the greatest difficulties; the relationship between gambling and alcohol/drug use and other mental health disorders; the age respondents started gambling; the location of the primary gambling venue; the categories of persons problem gamblers are engaging in the activity with; and the amount and type of debt owed.

A comparison between the adolescence prevalence study and the Council's 1996 adult prevalence study was also made. The 1996 prevalence study by the Council revealed that New York State has the unfortunate distinction of having the highest prevalence for lifetime problem gambling (7.3%) and the second largest percentage of current prevalence (3.6%) in the nation, in comparison to states having similar studies conducted. Based upon this information, there are more than three-quarter million residents who have had problems due to gambling at some point during the course of their lives and at least an additional one-quarter million New Yorkers who are currently experiencing serious to severe difficulties (50% of whom are women).

In New York, 2.4% (±1.09%) of the total sample of adolescent respondents were classified as problem gamblers, the most serious classification of gambling-related difficulties among youth. Another 14.0% (±2.05%) of the total sample of adolescent respondents were classified as gamblers at risk for developing gambling problems.

Based on the prevalence rates, it is estimated that there are between 15,400 and 41,000 adolescents in New York who have experienced severe problems with their gambling and between 135,000 and 193,000 whose gambling involvement has caused them difficulties in the past or, more likely, places them at risk for developing gambling-related difficulties in the future.

Please also note that these statistics do not include the millions of New Yorkers adversely affected by the problem gambler's activities.

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 18 2005

Rev. Robert J. Paquet
Hankins AG
PO Box 285
Callicoon Center, NY 12724

Dear Rev. Paquet:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You present a compelling argument against gambling. However, the comment period for the DEIS is intended to solicit comments on the DEIS, and not the detriments or benefits of gambling. Before the State of New York considered the legalization of gambling they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The result is an increase in tax revenues for both state and local governments. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

In the local agreement between the Tribe and local government the Tribe is paying 15 million dollars annually to mitigate for any perceived negative social impact the casino may have. The Tribe is sensitive to the needs of the local community and is making every effort to display a good neighbor policy. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions and increased load to community services and police that may be associated with the casino.

The moral and ethics issues regarding casinos, while pertinent and substantial, must be placed behind the legal rights of the Tribe to have a casino in the Federal decision making process. Moral and ethics issues are also pertinent to the rights of tribes as sovereign Indian nations that were displaced from their homelands. The Stockbridge-Munsee Community filed a land claim against the State of New York for being illegally displaced from their land in Madison and Oneida Counties. The land claim settlement with the State of New York that provides for the casino in Sullivan County is a key ingredient in settling that land claim. The Federal Indian Gaming Regulatory Act allows Indian gaming in any state that already has legalized gambling. It is illegal discrimination to allow any other type of gambling (including state lotteries) while disallowing Indian gaming. Since the State of New York has a lottery the State cannot legally discriminate against Indian gaming.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Sosha M. Kitevits
17 Estate Drive
Fallsburg, NY 12733
Fax/Phone: 845-436-6634

March 27, '05

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
FAX: 615-467-2939
Attn: Kurt Chandler

Dear Mr. Chandler,

I am horrified at the prospect of having casinos in the Sullivan County area. I have been living in the county for nearly four years, and I feel that the peaceful, calm, friendly nature of the county would be severely compromised if even one casino would area – and certainly if there would be five! The crime level would rise dramatically, as has been proven in every other place where casinos have opened. Traffic will increase, causing driving difficulties, accidents, and higher car insurance rates; air pollution from the casino players traveling and the added dwellings will spoil this beautiful rural area. The lack of available housing will cause rents to rise, raising the cost of living for the residents of the county.

I understand that the casinos are being built as part of a land claims settlement. However, these five proposed casinos are all off reservation. The tribes are foreign to our community and have no land here. It is a perversion of Federal law to site the casinos in Sullivan County, and would be extremely detrimental to our community.

It is unthinkable to consider opening even one casino without a comprehensive study of the effect that all five casinos planned would have on the area.

As a resident of Sullivan County, I demand that a study of the effect of these casinos be commissioned immediately, and that all plans for the casinos be halted pending the results of these studies.

Thank you for your consideration.

Sincerely,

Sosha M. Kitevits

Sosha M. Kitevits

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Ms. Sosha Kitevits
17 Estate Drive
Fallsburg, NY 12733

Dear Ms. Kitevits:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have raised concerns over a loss of peace, and introduction of crime, traffic, pollution, rising rent, the fact that the casinos are off-reservation, and the lack of a five casino cumulative analysis. The Indian Gaming Regulatory Act (IGRA) provides for mitigation of impacts through local government agreements and a compact with State government. In the local agreement between the Tribe and local government, the Tribe is paying 15 million dollars annually to mitigate for any perceived negative social impact the casino may have. That money is intended to offset the costs of any social impacts associated with the casino, including gambling addictions and increased load to community services and police that may be associated with the casino, as well as local roads and traffic impacts. The State compact is designed to mitigate all impacts under State control such as traffic and air pollution along Route 17. If these funds provided by the tribe are used by local and State governments to mitigate impacts as intended by IGRA, the local social issues and Route 17 issues should all be resolved. You would still have to deal with regional growth impacts, but they have the inherent funding of an increased tax base as new residents move into the county. The loss of peace and quiet is subjective, with people having different tolerance levels and needs. While this will be taken into consideration, the legal right of participants often take precedence in the Federal decision making process.

While these casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

As already noted in the DEIS, the Final Environmental Impact Statement (FEIS) will include additional information. The regulation 40 Code of Federal Regulations (CFR) 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. As stated in the DEIS, information is currently unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that all the proposed casinos will have similar drawing power and will be located within Sullivan County close to Route 17. Since the specific size and location of two of the proposed casinos are unknown, it would be irresponsible to attempt to project full quantitative impacts that would be subject to considerable error. The additional narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K [illegible]

ACTING Director, Eastern Region

Shimon Kitevits
17 Estate Drive
Fallsburg, NY 12733
Fax/Phone: 845-436-6634

March 27, '05

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
FAX: 615-467-2939
Attn: Kurt Chandler

Dear Mr. Chandler,

We, as a county feel betrayed that those who control land appropriation will not stand up for our basic inalienable human rights to lead a normal life in our current simple happy society. We protest this endeavor, which will introduce the lowest elements of society and every level of crime in our county. We feel that this is an absolute stab in the back.

Even someone who enjoys gambling would never place a casino in his backyard, exposing his family and children to all the ills that surround a casino. Please respect our desire not to have a casino in our backyard.

We trust that as regional director you will surely put a stop to any such plans.

We thank you very much for your time and consideration.

Sincerely,

Shimon Kitevits

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 0 2005

Mr. Shimon Kitevits
17 Estate Drive
Fallsburg, NY 12733

Dear Mr. Kitevits:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your main concern appears to be impacts on crime and community character. In the local agreement between the Tribe and local government, the Tribe is paying 15 million dollars annually to mitigate for any perceived negative social impact the casino may have. The Tribe is sensitive to the needs of the local community and is making every effort to display a good neighbor policy. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions and increased load to community services and police that may be associated with the casino, as well as local roads and traffic impacts.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K Lampe

Director, Eastern Region
ACTING

March 27, 2005

136 Brickman Road
Fallsburg, NY 12733

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler

Dear Sirs:

I am writing to seriously object to the proposal to open casinos in the Catskills. It would have a disastrous impact on the county and our community. There are no tribal lands here and these casinos do not belong OFF-RESERVATION - in our community. No study has been done on the impact of 5 casinos but I know it would surely be detrimental to the local, non-gambling residents. Not even one casino should be built before a study on all 5 has been done.

Thank you for your consideration,

Jessica Esther Strauss

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Ms. Jessica Strauss
136 Brickman Road
Fallsburg, NY 12733

Dear Ms. Strauss:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) Your first issue appears to be the potential cumulative impact analysis for five proposed casinos.

As already noted in the DEIS, the Final Environmental Impact Statement (FEIS) will include additional information. The regulation 40 Code of Federal Regulations (CFR) 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. As stated in the DEIS, information is currently unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that all the proposed casinos will have similar drawing power and will be located within Sullivan County close to Route 17. Since the specific size and location of two of the proposed casinos are unknown, it would be irresponsible to attempt to project full quantitative impacts that would be subject to considerable error. The additional narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

The Indian Gaming Regulatory Act (IGRA) built controls into the process so that even the unknown impact of five casinos can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments is intended to cover the local issues, such as school impacts, crime and other social issues. Under IGRA each tribe also has to make a compact with the state where the casino is located. The intention of a state compact under IGRA is for the mitigation of potential impacts under state control. IGRA disallows payments to the state in lieu of taxes. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state-controlled issue such as roads and air quality, regardless of

whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

(2) Your second issue appears to be the fact that these casinos are all off-reservation.

While these casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

YESHIVA GEDOLAH - ZICHRON MOSHE

- *Zichron Moshe High School*
- *College For Advanced Talmudic Research*
- *Kollel-Post Graduate School*
- *Cheder Elementary School*

03-28-05P12:00 RCVD

Rabbi Tzvi Abba Gorelick
Dean
Rabbi Eli Dov Wachtfogel
Rosh Yeshiva

March 27, 2005

BY TELEFAX AND U.S. MAIL
Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214

Attn: Kurt Chandler

Re: Stockbridge-Munsee Casino Draft Environmental Impact Statement

Dear Mr. Keel:

I write on behalf of the faculty and students Yeshiva Gedolah Zichron Moshe, a school of Jewish study in Fallsburg. The Yeshiva includes an elementary-secondary school for children, and a post-secondary academy for young men in rabbinical and other Jewish studies. The Yeshiva is registered and certified by the New York State Education Department. It was established in 1969, and has been growing steadily for over 35 years at this same location. I serve as administrator and chief rabbi of the Yeshiva.

For the reasons explained below, we object to both the planned development of five casinos in Sullivan County, and to the Draft Environmental Impact Statement (DEIS) for the Stockbridge-Munsee proposal for Bridgeville. In short, the casinos would radically alter the moral and tangible character of our community, upon which we substantially rely, and the DEIS fails to account whatsoever for these impacts.

The Yeshiva is part of, and has a leadership role in, a broader community of Orthodox Jews in the areas of Sullivan County in close proximity to the planned casinos. The Yeshiva helps anchor the religious life of this community. Many local people appreciate the Yeshiva as a place of worship, and hundreds of observant Jews have built and own vacation homes within short distances from our campus to comply with

LAUREL PARK ROAD/P.O.B. 580 / SOUTH FALLSBURG, NEW YORK 12779-0580 / 845-434-5240

YESHIVA GEDOLAH - ZICHRON MOSHE

- *Zichron Moshe High School*
- *College For Advanced Talmudic Research*
- *Kollel-Post Graduate School*
- *Cheder Elementary School*

Rabbi Tzvi Abba Gorelick
Dean
Rabbi Eli Dov Wachtfogel
Rosh Yeshiva

religious requirements to walk to Sabbath services. As a result, we have become a focal point of the community's economic and physical development.

In our 3½ decades here we have lived peaceably and in harmony with the local community in the Town of Fallsburg and Sullivan County. We are an asset to the local community, contributing to the economy and political process.

The vast majority of our students, particularly our rabbinical and post-secondary students, come from downstate New York. Our comparatively secluded Yeshiva campus provides an opportunity for the children of our friends, relatives and co-religionists to focus on the challenging religious curriculum we offer, without the distractions and social degradation encountered elsewhere. This enables them to immerse themselves in the deep study required of Talmudic learning, and continues the tradition of the many hallowed Torah academies of our European heritage. The families of our students have come to rely on our more wholesome physical and social environment to assist them in their study and personal growth. Indeed, in my opinion, such relative seclusion and environmental quality is essential to our program. Our school is virtually free of the crime and drug use which plague so many other institutions.

The plans for development of five casinos in the area, including four in the neighboring Town of Thompson, threatens to significantly damage this environment. The physical degradation from increased pollution and sprawling growth is the most tangible impact. Additionally, the change in community character, as gambling-related businesses and other entities expand and gambling increases as a factor in the social fabric would offend our culture and beliefs. High stakes gambling is antithetical to Orthodox Jewish culture and theology. Under our Halachic law, gambling-related risks are vulgar and offensive because there is no reasoned or consensual exchange of value between the parties. This plan and its natural consequences would single-handedly change our currently appropriate and conducive setting for religious learning to a negative and vulgar environment.

We are dismayed that the DEIS fails to analyze or even discuss these impacts. At best, the DEIS makes passing mention of the possibility of pathological gambling and increased crime but essentially fails to review the potential impacts in greater depth, or

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- *Zichron Moshe High School*
- *College For Advanced Talmudic Research*
- *Kollel-Post Graduate School*
- *Cheder Elementary School*

בס"ד

Rabbi Tzvi Abba Gorelick
Dean
Rabbi Eli Dov Wachtfogel
Rosh Yeshiva

propose any serious mitigation. We are the detail which the DEIS has ignored amid all the projections of economic development which it recites.

Development of five casinos in the area is would betray the environmental qualities which inspired the founding of the Yeshiva in South Fallsburg, and the enormous investment of money and personal effort which has sustained it in the decades since. And our individual contribution pales in comparison to the investment and effort of the thousands of religious families which have located in the area. Conversion of our neighboring town to a regional center of high stakes commercial gambling – from its current environment free of such blight - is unfair and prejudicial to our community and to all of the religious people in Sullivan County. To do so without a full study of this plan, is even more offensive and a violation of the National Environmental Policy Act.

We urge you to study these impacts further, and as a result of them, to deny your approval to this threat to the way of life we have established in Sullivan County.

Thank you for your consideration. Please contact me at 845 434 5240 if I can provide any further information.

Sincerely yours,

Rabbi Eli Dov Wachtfogel
Rosh Yeshiva

REDW/rk

LAUREL PARK ROAD/P.O.B. 580 / SOUTH FALLSBURG, NEW YORK 12779-0580 / 845-434-5240

United States Department of the Interior

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Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

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Rabbi Eli Dov Wachtfogel
Yeshiva Gedolah – Zichron Moshe
Laurel Park Road
P.O. Box 580
South Fallsburg, NY 12779-0580

Dear Rabbi Wachtfogel:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) You state that you object to the planned development of five casinos and to the DEIS. You note that the casinos would alter the moral and tangible character of the community, and the DEIS fails to account for these impacts.

Regional growth is a projected impact induced by the project. The regional growth would include casino employees and related support service personnel. It is possible that many of these new residents may not share your religious beliefs. While some people applaud regional growth due to the economic benefits, others deplore it. Additional traffic would be added to regional roads, which also requires mitigation. Depending on the distance of your institution to the proposed casino location, it is possible that some of this traffic could interfere with your religious practice of walking on the Sabbath. These types of issues are under local control and the Tribe is making suitable payments to mitigate such impacts. For the issues under local control, we assure that mitigation arrangements are in place, but the local authorities provide the mitigation. Additional housing would have to be built in the region, but some people eagerly await the greater commerce that a casino would bring. The Tribe is paying 15 million dollars annually to the local government to mitigate perceived impacts. This local agreement is intended to mitigate potential impacts related to schools, roads and social problems such as crime and gambling addictions. The local government can also choose to use that money to support those on a fixed income impacted by inflation. Please refer to "The Report of the New York State Task Force on Casino Gambling" for additional details on potential casino impacts on communities. It is being incorporated by reference. It documents potential crime and other impacts. Your letter and our response will be made part of the FEIS to document the potential impacts on your institution for the public record. This issue will also be taken into consideration should the Bureau of Indian Affairs make the decision for this project.

(2) You believe that five casinos would betray the environmental qualities that inspired the founding of your institution, and that a full study is needed.

As already noted in the DEIS, the Final Environmental Impact Statement (FEIS) will include additional information. The regulation 40 Code of Federal Regulations (CFR) 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. As stated in the DEIS, information is currently unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that all the proposed casinos will have similar drawing power and will be located within Sullivan County close to Route 17. Since the specific size and location of two of the proposed casinos are unknown, it would be irresponsible to attempt to project full quantitative impacts that would be subject to considerable error. The additional narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K. Lamph

ACTING Director, Eastern Region

Attention : Mr. Kurt Chandler

March 24, 2005

Dear Mr. Chandler,

As a satisfied member of our peaceful Sullivan County, I was dismayed and outraged to hear about the proposed casinos in our area.

Some of our concerns are: The crime rate, noise level, health problems and traffic accidents will increase dramatically. The casinos (even one!) will devastate our communities!!

Please spare my fellow community members and me from this impending trouble that this will cause us.

We have heard that these casinos are all OFF-RESERVATION. The land claims settlements are NOT our problem. These tribes are foreign to our community. We have no tribal lands here.

Siting casinos here is a perversion of Federal Law.

<u>Please</u> <u>Please</u> take this letter into consideration when making your important and responsible decision.

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 2 2005

Mr. L. Hamburger
No Address Provided
Fax: (845) 434-4669

Dear Mr. Hamburger:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) Your first issue appears to be crime and other social impacts.

In the local agreement between the Tribe and local government the Tribe is paying 15 million dollars annually to mitigate for any perceived negative social impact the casino may have. The Tribe is sensitive to the needs of the local community and is making every effort to display a good neighbor policy. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions and increased load to community services and police that may be associated with the casino, as well as local roads and traffic impacts.

Before the State of New York considered the legalization of gambling they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The result is an increase in tax revenues for both state and local governments. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

(2) Your second issue appears to be the fact that these casinos are all off-reservation.

While these casinos are all off-reservation, the Indian Gaming Regulatory Act allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keller

Director, Eastern Region

Confirmation Report - Memory Send

Page : 001
Date & Time: 22-Apr-2005 12:34pm
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	796
Date	:	22-Apr 12:32pm
To	:	☎88454344669
Number of pages	:	002
Start time	:	22-Apr 12:32pm
End time	:	22-Apr 12:34pm
Pages sent	:	002
Status	:	OK

Job number : 796 *** SEND SUCCESSFUL ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 2 2005

Mr. L. Hamburger
No Address Provided
Fax: (845) 434-4669

Dear Mr. Hamburger:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) Your first issue appears to be crime and other social impacts.

In the local agreement between the Tribe and local government the Tribe is paying 15 million dollars annually to mitigate for any perceived negative social impact the casino may have. The Tribe is sensitive to the needs of the local community and is making every effort to display a good neighbor policy. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions and increased load to community services and police that may be associated with the casino, as well as local roads and traffic impacts.

Before the State of New York considered the legalization of gambling they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The result is an increase in tax revenues for both state and local governments. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler

98 Lobo Lane
Mountaindale
NY 12763
3/23/05

Dear Sir,

We are very gravely concerned at the prospect of Casinos and gambling being brought into Sullivan County. There is no study of any kind on the cumulative impact of five casinos here. I insist that a study of the impact of all five must be done before any ONE casino can proceed.

Five casinos will devastate this county and is certainly not healthy for children growing up here. Gambling and crime destroy future generations

These five proposed casinos are all OFF-RESERVATION

The land claims settlements are not our problem. These tribes are foreign to our community, we have no tribal lands here. Attempting to site the casinos in Sullivan County is a perversion of federal law and detrimental in the extreme to our community.

There is no upgrade for Route 17 in the DEIS.

Car insurance rates will rise due to the enormous increase in traffic and consequent accidents.

Air quality, poor at present, will get much worse.

With thousands of new workers, there will be thousands of new dwellings required, which will become fixed source pollutors - No mention in DEIS.

Property and school taxes will go up.

Acute shortage of housing will mean renters and those on fixed

incomes will be in trouble.

Crime, addictions, etc will increase dramatically.

I repeat, Gambling, which brings crime, will destroy future generations.

Raymond Lefkowitz

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Mr. Raymond Leflront
98 Lobo Lane
Mountaindale, NY 127763

APR 2 1 2005

Dear Mr. Leflront:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) Your first issue appears to be the potential cumulative impact analysis for five proposed casinos.

As already noted in the DEIS, the Final Environmental Impact Statement (FEIS) will include additional information. The regulation 40 Code of Federal Regulations (CFR) 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. As stated in the DEIS, information is currently unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that all the proposed casinos will have similar drawing power and will be located within Sullivan County close to Route 17. Since the specific size and location of two of the proposed casinos are unknown, it would be irresponsible to attempt to project full quantitative impacts that would be subject to considerable error. The additional narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

The Indian Gaming Regulatory Act (IGRA) built controls into the process so that even the unknown impact of five casinos can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments is intended to cover the local issues, such as school impacts, crime and other social issues. Under IGRA each tribe also has to make a compact with the state where the casino is located. The intention of a state compact under IGRA is for the mitigation of potential impacts under state control. IGRA disallows payments to the state in lieu of taxes. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state-controlled issue such as roads and air quality, regardless of

whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

(2) Your second issue appears to be the fact that these casinos are all off-reservation.

While these casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues. One alternative would be to pay the tribes for these taken tribal lands. The choice for the State may come down to (1) receiving large sums of money by supporting tribal casinos or (2) paying out large sums of money to settle these land claims.

(3) You state that there is no up-grade to Route 17 planned in the DEIS.

Route 17 is considered a State controlled road, so any upgrade for Route 17 would have to be provided by the State of New York. The Bureau of Indian Affairs (BIA) approval process for casino projects must comply with National Environmental Policy Act (NEPA), but must also comply with IGRA. NEPA is intended to analyze and then plan mitigation for any negative impact due to a Federal action. The Federal approval process under IGRA requires mitigation provisions as an integral part of the approval process, rather than just planned mitigation in the FEIS as required under NEPA. IGRA thereby exceeds NEPA requirements. Even when unknown information prevents full analysis under NEPA, full mitigation is already provided for by IGRA through the local mitigation agreement and State compact. State compacts are negotiated separately from the NEPA process and the results are not known until after NEPA is complete. The State must determine what mitigations are necessary for issues that are under State control, and the State has the right to choose how to use those funds. If the State uses the Tribal mitigation funds as intended by IGRA, Route 17 traffic will be fully mitigated. It is up to the State to determine whether that would result in additional traffic lanes along Route 17, a light rail system or other appropriate means. If the State performs the needed mitigation as IGRA intended, air quality and traffic problems should be greatly reduced.

(4) You also express concerns over regional growth.

Regional growth is a projected impact induced by the project. While some people applaud regional growth due to the economic benefits, others deplore it. Additional traffic will be added to regional roads, which also requires mitigation. These types of issues are under local control and the Tribe is making suitable payments to mitigate such impacts. For the issues under local control, we assure that mitigation arrangements are in place, but the local authorities provide the mitigation. The areas under direct BIA control concern the Tribal casino trust property. Trust property is also subject to environmental controls issued by the Environmental Protection Agency. Controls and mitigations are in place for every project aspect to assure that the project does not have the impacts you fear. Additional housing would have to be built in the region, but some people eagerly await the greater commerce that a casino would bring. The Tribe is paying 15 million dollars annually to the local government to mitigate perceived impacts. This local agreement is intended to mitigate potential impacts related to schools, roads and social problems such as crime and gambling addictions. The local government can also choose to use that money to support those on a fixed income impacted by inflation.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

STATE OF NEW YORK
EXECUTIVE CHAMBER
ALBANY 12224

GEORGE E. PATAKI
GOVERNOR

February 25, 2005

Dear Mr. Keel:

I write to provide certain information to assist the Secretary of the Interior in determining that the Class III gaming facility proposed by the Stockbridge-Munsee Community ("Tribe") in the Town of Thompson, Sullivan County would not be detrimental to the surrounding community pursuant to 25 U.S.C. §2719(b)(1)(A).

I strongly support Class III gaming in the Catskill region – and Sullivan County in particular – as an important element in the economic revitalization of the region. In furtherance of this goal, I signed into law Chapter 383 of the Laws of 2001, which authorized up to three Class III gaming facilities in the counties of Sullivan and Ulster. These facilities are expected to create thousands of new jobs and generate millions of dollars in new investments in this historic resort community. More recently, I have proposed legislation to increase the number of authorized Class III gaming facilities in the Catskill region from three to five. This legislation would also ratify the land claim settlement agreement that the State and Tribe entered into on December 7, 2004 as part of a comprehensive package that would resolve each of the pending Indian land claims in Central and Northern New York, including the Cayuga, Oneida, Stockbridge and Mohawk land claims.

The Tribe's proposal appears to be comprehensive and carefully considered. The project site for this world-class resort and casino is located adjacent to Exit 107 of State Route 17, which is scheduled to become Interstate 86. The project will accommodate a projected 10 million visitors per year, spur economic development in the region and create approximately 5,000 new jobs. The Tribe has already executed an agreement with Sullivan County to mitigate the impacts of the project on the surrounding area.

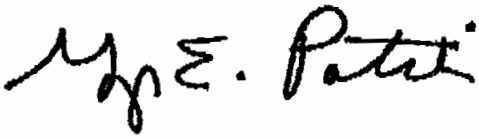
I am advised that the Tribe has prepared a draft environmental impact statement to analyze the potential environmental impacts related to the project. Among other things, the environmental review process requires that the public and involved agencies be given an opportunity to provide substantive comment on a project. I am confident that any environmental issues raised during this process will be addressed to the Secretary's satisfaction.

In assessing the environmental impacts relating to the project, there may be issues arising from the cumulative impacts of locating five casinos in the Catskill region. Therefore, I urge the Bureau of Indian Affairs (as lead agency under the National Environmental Policy Act) to ensure that appropriate consideration is given to the cumulative impacts that five casinos in the Catskill region may have on the community's local resources and that an analysis of any such impacts be included within the environmental impact statements prepared for each of the casino projects. It is my understanding that the Tribe is currently developing such an analysis. Once complete, the Tribe's cumulative impact analysis will provide an assessment of the cumulative impacts associated with five casinos, which may then be incorporated into the analysis prepared for each of the other casino projects and supplemented as appropriate.

The Tribe's project will have far reaching positive economic impacts in the Catskill region. In addition, this project represents a significant benefit to the State and the residents of Madison and Oneida Counties insofar as this process is furthering the settlement of a long-standing Indian land claim. Overall, I am confident that this project will further an ongoing, cooperative relationship between the State and Tribe.

In sum, I believe that the Tribe's proposed casino has tremendous potential to benefit the Tribe and the local community. Assuming that the Secretary determines that the proposed casino would be in the Tribe's best interest and would not be detrimental to the surrounding community, I look forward to my review of that determination in accordance with 25 U.S.C. § 2719(b)(1).

Very truly yours,



Mr. Franklin Keel
Director, Eastern Region
United States Department of the Interior
Bureau of Indian Affairs
711 Stewarts Ferry Pike
Nashville, Tennessee 37214

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 0 6 2005

Governor George E. Pataki
State of New York
Executive Chamber
Albany, NY 12224

Dear Governor Pataki:

Thank you for providing your letter of support for the proposed Stockbridge-Munsee Casino.

As you have noted, the Final Environmental Impact Statement (FEIS) for the proposed Stockbridge-Munsee Casino will include additional information on the cumulative impacts of the potential five casinos. However, at this point in time we only have applications from three tribes for casinos in Sullivan County. When a tribe submits a casino fee-to-trust application they include a preliminary Environmental Assessment (EA) or preliminary Environmental Impact Statement (EIS). Our staff then works with the tribe and the contractor to develop an acceptable National Environmental Policy Act (NEPA) document. The information that is required includes a marketing study that projects the number of casino visitors based on the size and location of the casino. After the marketing study is developed the traffic study can be developed, based on the projected number and origin of casino visitors. Potential air quality impacts usually depend on the traffic study. Without applications from the two additional tribes with which you signed land claim settlement agreements, we do not have sufficient information to provide a full quantitative analysis of cumulative impacts for five potential casinos.

The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that the proposed casinos will have similar drawing power and will be located within a short distance of Route 17. The original three casino State approval allowed for casinos in both Sullivan and Ulster Counties. A casino in Ulster County would have a much different impact. Without hard data it would be irresponsible to attempt to project full quantitative impacts, and the estimated projections that we plan to include in the FEIS must be considered subject to considerable error. The narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

At this point, without the hard data necessary for a full analysis, our environmental staff estimates that an additional traffic lane along Route 17 may be needed to accommodate the potential traffic from five casinos in Sullivan County. Casino patrons have their choice of venues and may not tolerate traffic slow-downs when easier choices are available, even when the roads are rated at higher capacity. Three casinos represent a slowing of traffic by changing the level of service (LOS) along congested areas of Route 17. Five casinos could slow the traffic down further or even discourage casino patrons from going to Sullivan County. Either result would not be acceptable for many people. The economic benefits to the State from these casinos should make adding a traffic lane to Route 17 an achievable mitigation. When you consider the loss of casino patrons that could result from traffic congestion, a cost-benefit analysis should make State mitigation measures that improve traffic flows to Sullivan County economically attractive. It would also address a major concern being raised by residents of neighboring Orange County.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Robert K Emple

ACTING Director, Eastern Region

3/28/05

TO: FRANKLIN KEEL, REGIONAL DIRECTOR
BUREAU OF INDIAN AFFAIRS
EASTERN REGIONAL OFFICE
711 STEWART FERRY PIKE
NASHVILLE TN, 37214
ATTN: KURT CHANDLER

WE ARE VERY UPSET OF THE THOUGHT TO BRING CASINOS IN OUR AREA. THESE WILL RUIN OUR COMMUNITY, OUR HIGHWAYS, BRING CRIME TO THIS PEACEFUL AREA, & INCREASE TAXES & POLUTION. THIS IS UNFAIR, AS THEY ARE OFF RESERVATION AND HAVE NO RIGHT INTRUDING ON US.

WE HOPE THIS WILL NOT HAPPEN!

ELCHONON SEPTIMUS
AND FAMILY
845 436 0440
53 LAUREL PK. RD. CM
FALLSBURG N.Y.
12733

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Mr. Elchonon Septimus
53 Laurel Park Road Apt. C-14
Fallsburg, NY 12733

Dear Mr. Septimus:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have expressed concerns about crime, taxes, pollution and the proposed casinos being off-reservation.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

The regional growth would include casino employees and related support service personnel. While some people applaud regional growth due to the economic benefits, others deplore it. The taxes that residents pay for community services are unrelated to the presence of casinos. Studies show that the induced regional growth and increased commerce provides increases in local and state tax revenues without raising taxes for residents. The Indian Gaming Regulatory Act (IGRA) disallows payments from the tribes to government agencies in lieu of taxes, but allows mitigation payments that are intended to directly address the impacts. The intention under IGRA is for the government agency that receives these payments to use them to do the roadwork, hire the personnel, or otherwise support the programs that may be impacted. Mitigation payments to the State through the Tribal-State compact are intended to cover issues such as Route 17 traffic and related air quality deterioration. The Tribe's mitigation agreement with local government annually provides 15 million dollars to mitigate any perceived impact that the casino may have. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is

intended to offset the costs of any social impacts associated with the casino, including gambling addictions, local roads and increased load to community services and police that may be associated with the casino. Regional growth also includes an inherent means of mitigation since any new resident that moves to the region would also pay taxes that support local services, just like everyone else. That distributes the cost of services to a greater number of people. The history of the region shows that it has been able to support a much greater number of people than it currently does. It is expected that new housing would be built in the region and rents may relate to a housing shortage, if that should arise. The local government also can choose to use the Tribal mitigation funds to assist those on a fixed income.

Casino planners worked with the local government in developing local roadway modifications that are designed to minimize local traffic impacts. The Tribe will be paying for these modifications through the local mitigation agreement. Improvements that may be needed for Route 17 are up to the State government. The Tribe provides mitigation funds that are intended to mitigate such impacts through the Tribal-State compact. The State has the right to choose how and where to use these funds. If these funds are used as intended the traffic and air quality issues should be fully mitigated. Improvements to traffic along Route 17 should also reduce air pollution.

Many American Indian tribes have had a long history of poverty and lack of economic opportunity. Congress recognized that the physical locations of reservations limit tribal income generation capabilities and passed IGRA to specifically address that problem. IGRA provides that federally recognized tribes have the right to establish a casino in their home state, if that state already has any form of legalized gambling, including a State lottery. New York already has a State lottery, and the State legislature authorized casinos in the Sullivan County region. The Stockbridge-Munsee Community Band of Mohican Indians currently reside in Wisconsin instead of New York as they once did, but filed a land claim for the loss of their former treaty property in New York. While all of the proposed tribal casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Bureau of Indian Affairs

Attention: Kurt Chandler
Franklin Keel, Regional Director

I was totally shocked to hear the latest news, that you are planning on opening 5 casinos in the neighborhood. This will totally devastate our county. There will be a lot more crime and addictions here which we don't want and don't need.

The five casinos are all off-reservation. It is not our problem. These tribes are foreign to our community and we have no tribal lands here.

Attempting to site the casinos here is a perversion of federal law and extremely detrimental to our community.

This will cause pollution, increase in car insurance, and an increase in rent.

Thank you in advance

Mr. & Mrs. Gershon Grossman
59 Laurel Park Road Apt. E4
Fallsburg, NY 12733

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Mr. Gershon Grossman
59 Laurel Park Road Apt. E-4
Fallsburg, NY 12733

Dear Mr. Grossman:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have expressed concerns about crime, addictions, the proposed casinos being off-reservation, pollution, insurance and rent.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

The regional growth would include casino employees and related support service personnel. While some people applaud regional growth due to the economic benefits, others deplore it. The taxes that residents pay for community services are unrelated to the presence of casinos. Studies show that the induced regional growth and increased commerce provides increases in local and state tax revenues without raising taxes for residents. The Indian Gaming Regulatory Act (IGRA) disallows payments from the tribes to government agencies in lieu of taxes, but allows mitigation payments that are intended to directly address the impacts. The intention under IGRA is for the government agency that receives these payments to use them to do the roadwork, hire the personnel, or otherwise support the programs that may be impacted. Mitigation payments to the State through the Tribal-State compact are intended to cover issues such as Route 17 traffic and related air quality deterioration. The Tribe's mitigation agreement with local government annually provides 15 million dollars to mitigate any perceived impact that the casino may have. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is

intended to offset the costs of any social impacts associated with the casino, including gambling addictions, local roads and increased load to community services and police that may be associated with the casino. Regional growth also includes an inherent means of mitigation since any new resident that moves to the region would also pay taxes that support local services, just like everyone else. That distributes the cost of services to a greater number of people. The history of the region shows that it has been able to support a much greater number of people than it currently does. It is expected that new housing would be built in the region and rents may relate to a housing shortage, if that should arise. The local government also can choose to use the Tribal mitigation funds to assist those on a fixed income.

Many American Indian tribes have had a long history of poverty and lack of economic opportunity. Congress recognized that the physical locations of reservations limit tribal income generation capabilities and passed IGRA to specifically address that problem. IGRA provides that federally recognized tribes have the right to establish a casino in their home state, if that state already has any form of legalized gambling, including a State lottery. New York already has a State lottery, and the State legislature authorized casinos in the Sullivan County region. The Stockbridge-Munsee Community Band of Mohican Indians currently reside in Wisconsin instead of New York as they once did, but filed a land claim for the loss of their former treaty property in New York. While all of the proposed tribal casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki and the Tribes. The agreements provide a Sullivan County casino, in lieu of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large.

Casino planners worked with the local government in developing local roadway modifications that are designed to minimize local traffic impacts. The Tribe will be paying for these modifications through the local mitigation agreement. Improvements that may be needed for Route 17 are up to the State government. The Tribe provides mitigation funds that are intended to mitigate such impacts through the Tribal-State compact. The State has the right to choose how and where to use these funds. If these funds are used as intended the traffic and air quality issues should be fully mitigated. While your insurance company can choose to do as it wishes, the roadway mitigations should prevent an increase in accident rates that would cause it to rise.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

03-28-05P12:17 RCVD

Mr. Franklin Keel
Regional Director
Eastern regional Office
Bureau of Indian Affairs

In appendix I of the deis, the casino group say they plan to generate their own power and heat, using diesel generators to the tune of 400 gallons of diesel fuel per hour. They plan to store over 100,000 gallons of fuel on the banks of our river. Besides the obvious danger of storing this fuel alongside the river, there is a more subtle danger. In their charts, they show the amount of nitrous oxide 191 tons a year, and sulfphur dioxide, 58 tons a year that will be released into the atmosphere from these generators. What ever happened to clean energy. And what happens to these gases when it rains as it so often does here in the catskills? It combines with the water forming sulphuric acid in one case, and falls back to the earth, or unfortunately, the neversink. It will kill everything in the river.

Without detailing the NYS DEC concerns over the models the developers have used to construct water usage and waste flows, I will simply take the simplistic approach they employ. They compare themselves favorably to the Mohican Sun casino in Conneticut.

in appendix m of the DEIS, the water usage from the Sun Casino in Aug of 2002 was over a million gallons a day. This directly contradicts the 534,000 gpd they have contracted from the Village of Monticello, and who at this point, only has a 900,000 gpd surplus. Add three more casinos, at least one of them double the size of this one and you could easily see 4 to 5 million gallons of water a day being drawn up from the aquifer. Although I am not a hydrologist, I know the amount of water is not limitless, and I don't believe there is enough water to support these casinos.

All the waste water from four casinos will go into the Town of Thompson treatment plant. At this point, they have capacity to treat another 1.3 million gpd, so there is no capacity for more casinos. If 80 to 90 percent of the water used is returned to the river we would increase the flow of effluent to the Neversink by almost 4 million gpd, or about 60cfs. the effects of this amount of water to such a pristine river environment could devastate the habitat in one dry summer. The releases from the Neversink Dam have historically not been much more than that.

The increased flows would affect compacts made on flows through out the Delaware River system. Nyc could lower releases from Cannonsville Dam to meet targets at the Montague gauge station, thus endangering an accord only recently agreed to, one that would preserve the DelawareRiver sporting community. Or worse yet, releases from the Neversink Dam could be reduced, cutting flows to the upper part of the river, which is stressed during the summer months. Lowere flows from the dam and increased flows of effluent could be a killing blow to the Neversink Gorge, truly one of the hidden jewels of the east..

The gorge is host to abundant wildlife. Wild browns and beautiful brook trout. Bears and eagles share the land with hikers, bird watchers, and fishermen. It is one of those last great places in the east. The State of NewYork, along with the Open Space Institute, and other conservation organizations has been acquiring parcels in this area to protect the Unique Area of the Neversink from just this type of developement.

This project will need further review to ensure that the Unique Area of the Neversink is not imperiled.

Michael Canazon

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 11 2005

Mr. Michael Canazon
No Address Provided
Fax: 845 292 0129

Dear Mr. Canazon:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) You note the potential use of a diesel generator and question the fate of the exhaust gases.

Tribal trust lands are under the jurisdiction of the Environmental Protection Agency (EPA) for all environmental issues. If the Tribe decides to pursue the use of a diesel generator, they would first have to apply for a discharge permit from the EPA if the discharged pollutants meet EPA volume limits. If the EPA grants the permit, the Tribe would have to limit the discharge of pollutants to EPA limits designated on their permit. As noted in Section 5.8.3 there are various types of discharge permits. If the exhaust exceeds the allowable permit limit the Tribe would be required to install a scrubber or other means of making sure that the permit limits are continually met. While sulfur dioxide and nitrogen oxides discharged into the atmosphere do have the potential to return to the earth as acid rain, the EPA allowed concentrations would not be high enough to cause a perceptible change in pH in the Neversink River that would cause fish to die. EPA would never allow such a discharge.

(2) You question whether the aquifer could support the water removal required for 5 casinos or whether the surface waters can accept the discharged waste.

That information is not yet known. We do not have applications from two of the tribes in question so we do not know their exact location to determine the impacts on the aquifer or where waste would be discharged. The St. Regis Band of Mohawk Indian's (Mohawk) project includes an on-site drinking water source and an on-site wastewater treatment plant. The well water depression would not extend beyond the Mohawk property boundary so their impact is minimal. The Village of Monticello potable water and the Thompson Kiamesha Wastewater Treatment Plant will be contracted for use by the Stockbridge-Munsee. The Village of Monticello will request an additional permit for a well to service the Stockbridge-Munsee casino. The Cayuga Nation would use the same facilities in use by Monticello Raceway. These facilities would be within the limits of the

established permits. If another newly proposed casino or other major development is located in between the current proposals there may be potential for impact based on the water demand by the newly proposed project and other local projects. Such additional development would require a complete analysis and the permit holder would also require approval from the Delaware River Basin Commission. The aquifer and discharge limit requirements will have to be carefully examined in any new project proposal. A US Geological Service Hydrologist has volunteered to assist the Bureau of Indian Affairs in aquifer analysis for future tribal proposals. All new wastewater treatment discharges are expected to require tertiary treatment to meet stream standards before disposal.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Confirmation Report — Memory Send

Page : 001
Date & Time: 13-Apr-2005 04:48am
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	685
Date	:	13-Apr 04:47am
To	:	☎88452920129
Number of pages	:	002
Start time	:	13-Apr 04:47am
End time	:	13-Apr 04:48am
Pages sent	:	002
Status	:	OK

Job number : 685 *** SEND SUCCESSFUL ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 1 1 2005

Mr. Michael Canazon
No Address Provided
Fax: 845 292 0129

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Fax 615 467 2939

To: Franklin Keel Regional Director
Bureau of Indian Affairs
Eastern Regional office
711 Stewart ferry pike
Nashville TN 37214
Att: Kurt Chandler

I am writing about the proposed casinos in Sullivan county NY.
We are against it, and we ask you to please not approve it.
For the following points

1) Taxes will go up on our property
2) The money that they will provide each year to the local government (I think it mentioned about 15 million) does not cover the increased cost, and not to mention that in 20 years this amount will be far from enough.
3) Of my kids have breathing problems I am very much concerned about the increased traffic.
4) One of the biggest concerns here which I don't see mentioned a lot, is that what happens if it does not work out, (like the games now in place, which they didn't have luck) then they will use the land for other options and do whatever they want, basically having a foreign nation in our own backyard, in our county.

Sincerely
Chayim fried

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Mr. Chayim Fried
No Address Provided
Fax (845) 796-1708

Dear Mr. Fried:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your concerns are noted to be (1) higher property taxes, (2) you do not consider the local mitigation funding to be sufficient nor indexed to inflation, (3) traffic related air quality may impact your children's breathing, and (4) tribal trust land located in Sullivan County is not under local control, equivalent to a foreign nation in your back yard.

Regional growth is projected to be an induced impact of the project. With regional growth more people are available to spread out the cost of local government services. Whether local government raises or lowers taxes may not be related to the casino project. Before the State of New York considered the legalization of gambling they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos. It also documents the induced growth effect that causes regional growth and an expanding economy. This study shows that due to increased commerce and regional growth local and state tax revenues increase without raising tax rates.

The local mitigation agreement is between the Tribe and local government. The Bureau of Indian Affairs does not participate in those negotiations. The sufficiency of the agreement funds, and applicability of using an inflation index, is up to the negotiators. A tribal casino can be considered to be equivalent to any other local business except for the fact that tribal trust property is tax exempt. Since the Indian Gaming Regulatory Act (IGRA) disallows payments in lieu of taxes, the mitigation payment is supposed to directly relate to the potential impact. The local and State government cannot collect business taxes, income taxes or property taxes for the casino site. If a large industrial park or major league ball field were placed in Sullivan County, many of the impacts would be similar. Yet most local governments would not ask for a local mitigation agreement from those businesses. Some local governments even give such businesses a tax break. They know that such businesses increase local revenues by employing people and increasing commerce. The casino is similar to such businesses in employing a large number of people that would induce growth. New residents, including casino employees and related service personnel all pay taxes just like everyone else. Regional growth occurs throughout the country without businesses moving to an area paying mitigation fees. These regional growth impacts

already have the inherent mitigation funding of an increased tax base from the new residents. The local agreement providing fifteen million dollars annually should be much greater than any loss of local taxes due to the tax exempt status of tribal trust land for many years to come.

Sullivan County is a Clean Air Act National Ambient Air Quality Standards attainment area and the casino will not affect the attainment status of the region. Although IGRA disallows payments to the State in lieu of taxes, it allows payments to mitigate potential impacts through the compact signed between the State and Tribe. If the State chooses to use the mitigation funds as intended by IGRA, the Route 17 impacts would be fully mitigated. This should alleviate all traffic and air quality concerns.

Tribal trust lands are not subject to taxes, but they are not a foreign nation. From time immemorial this area was Native American lands. As a result of non-native contact many Native Americans have been displaced from their original homelands. This proposed casino is part of land claim settlement agreement signed by Governor Pataki. The agreement provides, in part, a Sullivan County casino, in lieu of their claimed land. The land claim settlement agreement will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. Tribal trust lands are still subject to Federal environmental laws and regulations. The Tribal trust lands would be under the direct jurisdiction of the Environmental Protection Agency for all environmental issues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Confirmation Report - Memory Send

Page : 001
Date & Time: 22-Apr-2005 08:46am
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	779
Date	:	22-Apr 08:40am
To	:	☎88457961708
Number of pages	:	002
Start time	:	22-Apr 08:44am
End time	:	22-Apr 08:46am
Pages sent	:	002
Status	:	OK

Job number : 779 *** SEND SUCCESSFUL ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Mr. Chayim Fried
No Address Provided
Fax (845) 796-1708

APR 21 2005

Dear Mr. Fried:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your concerns are noted to be (1) higher property taxes, (2) you do not consider the local mitigation funding to be sufficient nor indexed to inflation, (3) traffic related air quality may impact your children's breathing, and (4) tribal trust land located in Sullivan County is not under local control, equivalent to a foreign nation in your back yard.

Regional growth is projected to be an induced impact of the project. With regional growth more people are available to spread out the cost of local government services. Whether local government raises or lowers taxes may not be related to the casino project. Before the State of New York considered the legalization of gambling they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos. It also documents the induced growth effect that causes regional growth and an expanding economy. This study shows that due to increased commerce and regional growth local and state tax revenues increase without raising tax rates.

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03/27/05

To: Mr. Franklin Keel, Regional Director
Bureau of Indian Affairs,

We, my family of 6 and my entire community has enjoyed living the catskills for many years, an area free of city pollution, an area where crime is relatively low, an area where traffic is not a problem.

We are very afraid that this is all about to end. The casinos being proposed will have a disastrous effect on the entire region. The area is not prepared, roads are small, the highway (Rt 17) is not equipped, rent and insurance will go up dramatically and only as time goes on as many workers and bettors will move to the area and crime will ofcourse follow also. Also, everyone knows the addictions that are caused by casinos thereby destroying families & friendships, as it has already done in all other areas in the world where casinos have been introduced.

We BEG OF YOU to STOP this unnecessary and potential killer coming to our area, before it is too late.

Sincerely,
Yitshak Alter

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Mr. Yitshak Alber
No Address Provided
Fax: (845) 434-1009

Dear Mr. Alber:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You express concern over a potential loss of peace and quiet. Regional growth and increased commerce are a projected side effect of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration.

You express concern over crime and addictions. Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

You also mention the potential for increased traffic, accidents and higher insurance rates. The local mitigation agreement between the Tribe and local government provides 15 million dollars annually to cover any increase in local costs for schools, local roads and social services such as gambling addictions due to the casino. Casino designers worked with local planners to minimize the traffic impacts the casino may have on the local population. In Sullivan County the traffic impacts from the casino are expected to be minimal due to these mitigation measures. While some potential impacts are unavoidable, the casino designers put in a great deal of thought into site selection, selecting a site close to Route 17, to minimize impacts. The Indian Gaming Regulatory Act (IGRA) requires the Tribe to have a compact with the State to mitigate impacts for State controlled issues such as Route 17 traffic and related air quality impacts. If the State uses the funds provided by the Tribe as intended by IGRA, the traffic along Route 17 will be fully mitigated and air quality should improve. Whether that results in an additional traffic lane,

light rail system or other means is up to the State. With the traffic situation improved there is no reason to raise your insurance rates.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Confirmation Report - Memory Send

Page : 001
Date & Time: 22-Apr-2005 08:50am
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	784
Date	:	22-Apr 08:42am
To	:	☎88454341009
Number of pages	:	002
Start time	:	22-Apr 08:42am
End time	:	22-Apr 08:44am
Pages sent	:	002
Status	:	OK

Job number : 784 *** SEND SUCCESSFUL ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

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Dear Mr Keel,

It is to the dismay of myself and of the entire community which I belong that there is a plan to open casinos in Sullivan County.

Let me explain with a few brief words my situation: I moved up here to be able to benefit from a quiet and peaceful lifestyle in a surrounding which ~~provide~~ provides this.

Just imagine what a difference even one casino would cause in effect. That is without mention of the crime rate, and extra financial burden of raised taxes.

Please consider these points carefully, and do not let us down.

Thanking you for your consideration,

Julian Koopfler
49 ESTATE DRIVE
FALLSBURG
NY 12733

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Mr. Julian Knopfler
64 Estate Drive
Fallsburg, NY 12733

Dear Mr. Knopfler:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You express concern over a potential loss of peace and quiet. Regional growth and increased commerce are a projected side effect of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration.

You express concern over crime. Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

You believe that the casinos would raise your taxes. Studies show that casinos induce economic and regional growth that raises local and State tax revenues without raising tax rates for residents. The tribe is also paying 15 million dollars per year to local government to mitigate any impact related to the casino, including impacts to schools, roads, emergency services etc.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Att: Kurt Chandler

Dear Sir,

This letter is to let you know how very aggravated I am about the proposal to open casinos in my neighborhood. I am working very hard to raise my family in an area where they are hopefully as least exposed to crime, drugs, and other bad influences. I am sure you realize that casinos are certainly not going to benefit me in any way! All land claim settlements are not my problem. Let the casinos go far - Far - Far away from me and my children.

Thank you for understanding.

Tyba Reznik

67 Laurel Pk Rd B5
Fallsburg NY 12733

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Ms. Tyba Reznik
67 Laurel Park Road Apt. G-5
Fallsburg, NY 12733

Dear Ms. Reznik:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have expressed concerns about crime, drugs and other bad influences on your children.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

The Tribe's mitigation agreement with local government annually provides 15 million dollars to mitigate any perceived impact that the casino may have. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions, local roads and increased load to community services and police that may be associated with the casino. Regional growth may have the potential to impact the community character.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

To Whom This May Concern:

I am writing to you regarding the opening of five (5) casinos in the vicinity, with the hope that you will be of help. As a long-term resident of Sullivan County I have always felt it to be my privilege to reside in this peaceful, serene environment. It has therefore been a great disappointment for me to learn of the pending establishment of these gambling centers. I feel that were these casinos to open it would spoil the calm atmosphere which has always prevailed. It would encourage frivolous activity which when unbridled may easily lead to improper behavior and a higher crime rate. It would be unfortunate, to say the least, if our neighborhood would turn from a serene one to a dangerous one. Allowing these casinos to open would, indirectly, cause just that. I feel it my right, as a dutiful citizen to protest. I, along with many neighboring families, have chosen Sullivan County as a place to live precisely because of its peaceful characteristics. We enjoy living here, away from the hub-bub of city life, and we would be terribly upset if you allow these casinos to be used publicly. We view this as an impending doom and disaster upon our community and hope that you understand and take apropiate action. Thank You.

Yours truly,

Anne Green

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Ms. Anne Green
No Address Provided
Fax: (732) 730-0760

Dear Ms. Green:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You express concern over a potential loss of peace and quiet. Peace and quiet are relative measures that are subject to individual tolerance levels. Regional growth and increased commerce are a projected side effect of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration.

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For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Confirmation Report - Memory Send

Page : 001
Date & Time: 22-Apr-2005 08:51am
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	783
Date	:	22-Apr 08:41am
To	:	☎87327300760
Number of pages	:	001
Start time	:	22-Apr 08:47am
End time	:	22-Apr 08:51am (Resend time :22-Apr 04:51pm)
Pages sent	:	000
Status	:	NG 80

Job number : 783 *** SEND FAILED ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Ms. Anne Green
No Address Provided
Fax: (732) 730-0760

APR 2 1 2005

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For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Confirmation Report - Memory Send

Page : 001
Date & Time: 22-Apr-2005 11:27am
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	792
Date	:	22-Apr 11:23am
To	:	☎87327300760
Number of pages	:	001
Start time	:	22-Apr 11:24am
End time	:	22-Apr 11:27am (Resend time :22-Apr 07:27pm)
Pages sent	:	000
Status	:	NG B0

Job number : 792 *** SEND FAILED ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Ms. Anne Green
No Address Provided
Fax: (732) 730-0760

APR 2 1 2005

Dear Ms. Green:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You express concern over a potential loss of peace and quiet. Peace and quiet are relative measures that are subject to individual tolerance levels. Regional growth and increased commerce are a projected side effect of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration.

You express concern over crime. Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. In most cases the percent of crimes in local communities around a casino is related to the population and, does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Confirmation Report — Memory Send

Page : 001
Date & Time: 22-Apr-2005 12:37pm
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	797
Date	:	22-Apr 12:32pm
To	:	☎87327300760
Number of pages	:	001
Start time	:	22-Apr 12:34pm
End time	:	22-Apr 12:37pm (Resend time :22-Apr 08:37pm)
Pages sent	:	000
Status	:	NG B0

Job number : 797 *** SEND FAILED ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Ms. Anne Green
No Address Provided
Fax: (732) 730-0760

APR 2 1 2005

Dear Ms. Green:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You express concern over a potential loss of peace and quiet. Peace and quiet are relative measures that are subject to individual tolerance levels. Regional growth and increased commerce are a projected side effect of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration.

You express concern over crime. Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

26 March 2005

03-28-05A08:51 RCVD

ENV.

Mr. Franklin Keel
Director
Bureau of Indian Affairs
Eastern Regional Office

By FAX

RE: Comments on Stockbridge-Munsee DEIS

Dear Mr. Keel:

My comments fall into two categories:

First: I want to note that the exit from Route 17 (107) to the proposed casino is known to residents to be unreliable, if not dangerous, in the winter season. The exit is uphill, ices quickly in the winter, and is known locally as a site for accidents as well as for cars being unable to negotiate the hill and sliding back and/or off road. Added traffic at this exit from a proposed casino would of course exacerbate the problems.

Second: The proposed casino would back to the Neversink River. This is a pristine and fragile waterway that crosses the county to eventually merge into the Delaware. It is noted for its scenic beauty and as one of the county's prime fishing (primarily trout fishing) attractions. Fishing in Sullivan County is not only of traditional importance to residents, but it is a major tourist attraction to the County; a variety of subsidiary businesses rely on fishermen-tourists, and would be severely adversely impacted if they no longer came here.

The hatching and survival of the fish in the river depend on very precise water conditions and temperatures, which cannot help but be disrupted, even destroyed, by the effluent from this proposed casino. (Please note that effluent from some of the other proposed casino sites could also impact the Neversink, compounding the severe problem.)

Additionally, on the river just below the site of the proposed Stockbridge-Munsee casino is an area known as the Neversink Gorge. New York State has designated the Gorge as a unique area that is under state protection so that it will remain in its present pristine condition. This condition depends on the quality and quantity of water from the Neversink and from the many small rivulets that feed into it. The Gorge will not survive the effluent, uncontrolled both as to temperature and quantity, from a casino built above it. The Gorge's protected status demands that this proposed casino not be built on this

site.

The mitigation to the effluent problem proposed in the Stockbridge-Munsee DEIS is more than inadequate; there is, in effect, no way that the devastating damage this casino will cause to the Neversink and the Gorge can be mitigated.

Finally, but by no means of least importance, according to the DEIS, the proposed casino owners plan to generate their own power and heat, with on-site diesel generators that will use some 400 gallons of fuel per hour. They also plan to store more than 100,000 gallons of fuel on-site, on the banks of the Neversink. Barring the obvious, unacceptable danger of fuel spills and accidents, the generators will release into the atmosphere each year tons of nitrous oxide and sulfur dioxide. When the weather is rainy, as it so often is in the Catskills, the gasses released by the generators will combine, in one case, with the rainwater to form sulfuric acid which will fall back onto the earth--or in this case, into the Neversink--where it will effectively kill everything in the river.

This must not be permitted to happen.

In closing, let me just note what you are already aware of: The Stockbridge-Munsees are an out-of-state tribe. They have no claim to Sullivan County land; they are asking that an off-reservation "nation" be created here, a dubious concept that is currently under increasing scrutiny.

For these reasons (and there are many others which I haven't addressed) I ask that you find that the environmental impact of this proposed casino is so severely negative that the project cannot reasonably be allowed to proceed.

Thank you for your consideration.

Very truly yours,

Joan Thursh

Joan Thursh

25 Todd Road / Woodbourne, New York 12788

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Ms. Joan Thursh
25 Todd Road
Woodbourne, NY 12788

Dear Ms. Thursh:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) You note that Route 17, Exit 107 to the proposed casino is dangerous in winter.

The exit is proposed to be realigned as part of the State's conversion of Route 17 to I-86. The Tribe is also paying for additional work on the exit to make it safer for casino patrons.

(2) The Neversink River is a prized trout fishing destination. Trout hatching and survival require precise water temperatures that could be impacted by effluent discharge. The Neversink Gorge, just below the casino site is sensitive State protected area.

Creating impervious surfaces next to a cold water stream can have serious impacts on the river system. That is why our environmental staff worked extensively with the contractors to assure that stormwater impacts would be minimal. Stormwater controls use both catch basins and a wetland designed to remove most sediments and contaminants before they can reach the river. The slow water introduction to the river from the wetland also allows temperature acclimation. The automobile salvage yard and surface mining operation previously using the site had much less control. There were potential river impacts from both oil spills and mine tailings. The extensive remediation we required has now removed these sources of impact. There are still surface mining operations immediately upstream of the project that, if uncontrolled, could have a much greater potential to impact ecologically sensitive areas like the Neversink Gorge. Wastewater will be contracted for treatment off-site at a facility using tertiary treatment for the highest level of water quality control.

(3) On site diesel generators producing their own electricity and diesel fuel stored near the river could impact the river and air quality.

Tribal trust lands are under the jurisdiction of the Environmental Protection Agency (EPA) for all environmental issues. If the Tribe decides to pursue the use of a diesel

generator, they would first have to apply for a discharge permit from the EPA if the discharged pollutants meet EPA volume limits. If the EPA grants the permit, the Tribe would have to limit the discharge of pollutants to EPA limits designated on their permit. As noted in Section 5.8.3 there are various types of discharge permits. If the exhaust exceeds the allowable permit limit the Tribe would be required to install a scrubber or other means of making sure that the permit limits are continually met. While sulfur dioxide and nitrogen oxides discharged into the atmosphere do have the potential to return to the earth as acid rain, the EPA allowed concentrations would not be high enough to cause a perceptible change in pH in the Neversink River that would cause fish to die. EPA would never allow such a discharge. Standard EPA regulations would apply for diesel fuel storage. Spill control measures are provided in the DEIS for all hazardous materials.

(4) As an out-of-State tribe the Stockbridge-Munsee have no claim to Sullivan County.

It is true that the Stockbridge-Munsee land claim does not include Sullivan County, nor is the Bureau of Indian Affairs aware of Mohican historical sites within Sullivan County. While the casino is off-reservation, the Indian Gaming Regulatory Act allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Hall

Director, Eastern Region

NOTES 3/18/05

Dear Mr. Keel ~ please excuse the stationery!

Please grant the request of our community for extension of the written PUBLIC COMMENT period on Stockbridge-Munsee Casino Project DEIS TO MAY 12TH.

I am a teacher and very concerned about all the negative impacts. Many of us need more

www.ddal.org

Doris Day Animal League
227 Massachusetts Avenue, N.E., Suite 100
Washington, D.C. 20002-6094

time to study and respond to the DEIS, as the only copies are available only during working hours.

Also: there are those who are even more qualified for giving a proper and expert response, and more time is needed for them as well.

In the interest of fairness to our community that will be impacted in a most MAJOR way by even this one casino, please grant the deadline extension.

We also request an impact study of the CUMULATIVE impact of 5 casinos that will forever alter our home.

THANK YOU.

Veronica BASSIL

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 20 2005

Ms. Veronica Bassil
30 Echo Lake Road
South Fallsburg, NY 12779

Dear Ms. Bassil:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You letter requesting an extension of the public comment period for this project was received among a large volume of letters, so we apologize for the delay. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period was not granted. All comments must have been received by March 28, 2005. We received your other letter on time and are providing a separate response to that letter. The five casino cumulative analysis is addressed in that letter.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K Lanham

ACTING Director, Eastern Region

VERONICA BASSIL
30 ECHO LAKE ROAD
SOUTH FALLSBURG, NY 12779

04-04-05P01:15 RCVD

March 28, 2005

BY FAX AND U.S. MAIL
Franklin Keel, Regional Director
Bureau of Indian Affairs Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, Tennessee 37214

Re: Proposed Stockbridge–Munsee casino DEIS

Dear Mr. Keel:

I am a resident of South Fallsburg in Sullivan County, NY. I am very concerned about the casino proposed for Bridgeville, and elsewhere in Sullivan County. The Bureau of Indian Affairs should fully review and prevent the massive impacts which will befall our area if these proposals go through.

I commute regularly from my home in South Fallsburg to Monticello where I teach at BOCES. Traffic on the few roads which connect my home and office are already bad, especially during the summer and recreational periods. Four casinos surrounding this commute would render my trip impassable on many occasions. .

I also object to the substantial added pollution from traffic due to these casinos and related development.

There is no basis for the DEIS refusal to consider the cumulative impacts of the five proposed casinos, particularly for traffic and air pollution which is a virtual certainty. I urge you to supplement the present draft with a second study detailing the true impacts to our area.

Thank you for your consideration.

Respectfully submitted,

VBassil

Veronica Bassil

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Ms. Veronica Bassil
30 Echo Lake Road
South Fallsburg, NY 12779

APR 1 2 2005

Dear Ms. Bassil:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your main issues appear to be traffic congestion and traffic related air pollution. You also request a complete analysis for five proposed casinos. As already noted in the DEIS, the Final Environmental Impact Statement (FEIS) will include additional information. The regulation 40 Code of Federal Regulations 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. As stated in the DEIS, information is currently unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that all the proposed casinos will have similar drawing power and will be located within Sullivan County close to Route 17. Since the specific size and location of two of the proposed casinos are unknown, it would be irresponsible to attempt to project full quantitative impacts that would be subject to considerable error. The additional narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

The Indian Gaming Regulatory Act (IGRA) built controls into the process so that even the unknown impact of five casinos can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments is intended to cover the local issues, such as school impacts, crime and other social issues. Under IGRA each tribe also has to make a compact with the state where the casino is located. The intention of a state compact under IGRA is for the mitigation of potential impacts under state control. IGRA disallows payments to the state in lieu of taxes. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state-controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

The projections in the DEIS for traffic and air pollution increases are based on maintaining the current road conditions. If the State chooses to use project mitigation funds provided through the five Tribal-State compacts, as intended by IGRA, to mitigate Route 17 traffic conditions, the improved traffic flow will reduce traffic congestion and traffic related emissions. The amount of pollutants that any vehicle produces is directly related to its speed, consistency of speed and amount of acceleration required. Improving traffic flow by making vehicle velocity more consistent will reduce the pollution from each vehicle. Improving traffic flow also reduces travel time and reduces vehicle use time per trip. The reduction in cumulative trip time can be significant. Constant velocity reduces the total pollution produced per vehicle per trip. Because of that you can actually have more cars flowing smoothly and produce less pollution than fewer vehicles in congested traffic, simply by adding roadway capacity. Air quality and traffic safety both benefit when traffic flows smoothly at a constant velocity. This also benefits roadway use by emergency vehicles.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

March 28, 2005

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler

Dear Mr. Keel,

I am writing to express my overwhelming opposition to the proposed casinos in Sullivan County.

The democratic ideal failed when our government did not respect Indian rights. Let it not fail again by imposing casinos, so antithetical to the beliefs of so many citizens here, on the residents of Sullivan County. We are not living on a formerly tribal land! Let no political rhetoric fool us into thinking that situating five casinos in an unrelated location can redress this historic wrong. Two wrongs will not make a right.

I chose to live in the country, away from an urban area, as did all the citizens of Sullivan County. Please do not bring us the worst of the problems we ran away from! Do not sully our clean country life with crime, traffic, polution and addictions.

Our property taxes fund the education of the youth of Sullivan County. Should we now, with the establishment of casinos, contradict all the values we have worked so hard to instill in our youth? We have taught them that hard work is the road to success. Shall we now with our actions contradict our words?

We implore you to heed the voice of the concerned citizens of our community.

Let democracy not fail again!

Sincerely,

Ayala Perlman
53 Laurel Park Rd.
Fallsburg, NY

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 20 2005

Ms. Ayala Perecman
53 Laurel Park Road Apt. D-16
Fallsburg, NY 12733

Dear Ms. Perecman:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) Your first issue is that the casinos are off-reservation.

Many American Indian tribes have had a long history of poverty and lack of economic opportunity. Congress recognized that the physical locations of reservations limit tribal income generation capabilities and passed the Indian Gaming Regulatory Act (IGRA) to specifically address that problem. IGRA provides that federally recognized tribes have the right to establish a casino in their home state, if that state already has any form of legalized gambling, including a State lottery. New York already has a State lottery, and the State legislature authorized casinos in the Sullivan County region. The Stockbridge-Munsee Community Band of Mohican Indians currently reside in Wisconsin instead of New York as they once did, but filed a land claim for the loss of their former treaty property in New York. While all of the proposed tribal casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. One alternative would be to pay the tribes for these taken tribal lands. The choice for the State may come down to (1) receiving large sums of money by supporting tribal casinos or (2) paying out large sums of money to settle these land claims.

(2) You note that casinos are not compatible with the rural Sullivan County way of life.

Community character impacts have been mentioned by others that object to the casino. Regional growth is a projected side effect of the casino project. Some people cherish the rural setting, and believe that regional growth would be detrimental to their way of life. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along

regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration.

(3) You believe that allowing gambling in Sullivan County contradicts the work ethic that you teach your children.

Moral and ethics issues are also pertinent to the rights of tribes as sovereign Indian nations that were displaced from their homelands. Such issues will be taken into consideration as potential community character impacts of the project in the decision making process.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

ACTING Director, Eastern Region

Sir Franklin Hall

My name is Haley Schnurmann. I presently reside at 71 ESTATE DR in Fallsburg, and have been a resident of Sullivan County for over 5 years.

I strongly oppose the idea of casinos in my neighborhood bec. this will have a dramatic effect on all residents of our area. Casinos attract people that increase violence, drugs, car accidents, traffic and pollution. I don't feel that people who are strangers to our community should have the ability to change the decorum of our society. This will have a detrimental effect on taxes, car insurance and already high daily expences, which will ~~become~~ have a terrible effect on the people living on low budget incomes which include many people in our communities. Please take into consideration, and put a veto on this idea, that will create such a terrible burden on the life in this rural area.

Haley Sch

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Mr. Usher Schrurmann
71 Estate Drive
Fallsburg, NY 12733

Dear Mr. Schrurmann:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your issues are noted to be violence, drugs, car accidents, traffic, pollution, taxes and car insurance.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

Casino designers worked with local planners to minimize the traffic impacts the casino may have on the local population. In Sullivan County the traffic impacts from the casino are expected to be minimal due to these mitigation measures. While some potential impacts are unavoidable, the casino designers put in a great deal of thought into site selection, selecting a site close to Route 17, to minimize impacts. The local mitigation agreement between the Tribe and local government provides 15 million dollars annually to cover any increase in local costs for schools, local roads and social services such as gambling addictions due to the casino. The Tribal-State compact required by the Indian Gaming Regulatory Act (IGRA) is intended to mitigate impacts under State control. If the State chooses to use the funds as intended by IGRA, the traffic and related safety and air quality along Route 17 should improve. With an improvement in traffic on Route 17 there should be a reduction in air pollution, fewer accidents, better access for emergency vehicles and no reason to raise your insurance.

Regional growth and increased commerce are projected side effects of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Rabbi Dov Perecman
53 Laurel Park Rd. Apt. D16
Fallsburg, NY 12733

03-28-05P03:40 RCVD

March 27, 2005

Mr. Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler

Dear Mr. Keel and Mr. Chandler,

I am writing to express my concern and indignation regarding the proposed institution of five casinos in Sullivan County, where I live with my young family.

We selected this community to live in for its quiet rural character. We are strongly opposed to an influx of crime, traffic, pollution, and other trappings of the gambling culture. In addition, we are philosophically opposed to gambling in general. Study after study has proven that crime, addiction, pollution, and other dregs of urban society come in with the casinos.

We, the residents of this unspoiled corner of the Catskills would like to keep the rural character of our area as it has always been. We demand that a study of the impact of all five casinos be done before even one of them can be inaugurated. You owe us at least that courtesy before you force these abominations on us.

We appreciate the problem of Native American land claim settlements; however, we have no tribal lands here, and resent you using our community to settle a problem that is not ours.

There is also no mention in the DEIS of money to be allotted for new roads, traffic signals, housing for casino employees and patrons, compensation for rising insurance rates, health costs, property and school taxes, and the like.

Please consider the impact of what you are doing to a very special part of New York State. Once ruined, it will never be the same.

Sincerely,

Rabbi Dov Perecman
Resident, Sullivan County, NY

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Rabbi Dov Perecman
53 Laurel Park Road Apt. D-16
Fallsburg, NY 12733

Dear Rabbi Perecman:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) Your concerns are listed as crime, traffic, pollution and other trappings of the gambling culture. You also note general impacts on community character.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

Casino designers worked with local planners to minimize the traffic impacts the casino may have on the local population. In Sullivan County the traffic impacts from the casino are expected to be minimal due to these mitigation measures. While some potential impacts are unavoidable, the casino designers put in a great deal of thought into site selection, selecting a site close to Route 17, to minimize impacts. The local mitigation agreement between the Tribe and local government provides 15 million dollars annually to cover any increase in local costs for schools, local roads and social services such as gambling addictions due to the casino. The Tribal-State compact required by the Indian Gaming Regulatory Act (IGRA) is intended to mitigate impacts under State control. If the State chooses to the funds as intended by IGRA, the traffic and related safety and air quality along Route 17 should improve.

Regional growth and increased commerce are projected side effects of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration, along with the need for increased regional commerce expressed by others.

(2) You demand a five casino cumulative impact analysis.

The Final Environmental Impact Statement (FEIS) for the proposed Stockbridge-Munsee Casino will include additional information on the cumulative impacts of the potential five casinos. However, at this point in time we only have applications from three tribes for casinos in Sullivan County. Without applications from the two additional tribes we do not have sufficient information to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that the proposed casinos will have similar drawing power and will be located within a short distance of Route 17. Without hard data it would be irresponsible to attempt to project full quantitative impacts, and the estimated projections that we plan to include in the FEIS must be considered subject to considerable error. The narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

(3) You resent the BIA for using Sullivan County to settle the Indian land claims, when that is not your problem.

The State of New York approved placing multiple casinos in Sullivan County, not the BIA. The Governor of New York signed the five land claim settlement agreements, not the BIA. The only BIA role has been to do our duty to process tribal fee-to-trust applications, ensure compliance with environmental laws through the National Environmental Policy Act (NEPA) process, and ensure that the properties are environmentally acceptable to take into trust. Neither the selection of Sullivan County nor the land claim settlement agreements included BIA involvement.

The IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. One alternative would be to pay the tribes for these taken tribal lands. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

(4) You state that the DEIS does not mention the money to be allotted for new roads, traffic signals, housing for casino employees and patrons, compensation for rising insurance rates, health costs, property and school taxes and the like.

This information about the local government agreement is included throughout the DEIS and a copy is included as Appendix D. Casino designers worked with local planners to minimize the traffic impacts the casino may have on the local population and will be paying for all casino related improvements. In Sullivan County the traffic impacts from the casino are expected to be minimal due to these mitigation measures. While some potential impacts are unavoidable, the casino designers put in a great deal of thought into site selection, selecting a site close to Route 17, to minimize impacts. The local mitigation agreement between the Tribe and local government provides 15 million dollars annually to cover any increase in local costs for schools, local roads and social services such as gambling addictions due to the casino. People are expected to find their own housing. The Tribal-State compact required by the IGRA is intended to mitigate impacts under State control. If the State chooses to the funds as intended by IGRA, the traffic and related safety and air quality along Route 17 should improve. Emergency services should be less impacted by traffic and with improved traffic flow. Your insurance rates should not be impacted by the casinos. Since the State compact is negotiated separately from the NEPA process, the results are not known until NEPA is complete, and that data cannot be included in the DEIS.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K Stanfa

ACTING Director, Eastern Region

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214

Attn: Kurt Chandler

We are writing to express our very strong feelings against the proposed gambling sites in Sullivan County. We are religious people who aspire to live and raise our children according to our values, and are prepared to sacrifice worldly comfort and pleasure to this end. This is why we chose this country environment that simple, natural, and decent, unsullied by immorality and greed.

Gambling sites would attract the worst sort of people, money-hungry, impulsive and immoral; a destruction of G-d's beautiful and pure countryside. We do not want them here! It isn't fair to allow the building of the sites without carefully considering their spiritual and practical ramifications on the environment. How could all the traffic be accommodated here? How will an upright, but low-income population pay the inevitable higher taxes and rent?

Please conside the broad picture. A lot is at stake for us.

Sincerely,
Shimon Isaac and Rassi Waldman
59 Laurel Park Rd Apt. E3
Fallsburg, N.Y. 12733

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 20 2005

Mr. Shimon Isaac
59 Laurel Park Road Apt. E-3
Fallsburg, NY 12733

Dear Mr. Isaac:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) You believe that casinos would bring people that are not compatible with your beliefs.

Regional growth is a projected impact induced by the project. The regional growth would include casino employees and related support service personnel. It is possible that many of these new residents may not share your religious beliefs. While some people applaud regional growth due to the economic benefits, others deplore it. Additional traffic would be added to regional roads, which also requires mitigation. These types of issues are under local control and the Tribe is making suitable payments to mitigate such impacts. For the issues under local control, we assure that mitigation arrangements are in place, but the local authorities provide the mitigation. Additional housing would have to be built in the region, but some people eagerly await the greater commerce that a casino would bring. The Tribe is paying 15 million dollars annually to the local government to mitigate perceived impacts. This local agreement is intended to mitigate potential impacts related to schools, roads and social problems such as crime and gambling addictions. The local government can also choose to use that money to support those on a fixed income impacted by inflation. Please refer to "The Report of the New York State Task Force on Casino Gambling" for additional details on potential casino impacts on communities. It is being incorporated by reference. It documents potential crime and other impacts. This issue will be taken into consideration should the Bureau of Indian Affairs make the decision for this project.

(2) Your second issue appears to be means to accommodate the volume of traffic.

Casino planners worked with the local government in developing local roadway modifications that are designed to minimize local traffic impacts. The Tribe will be paying for these modifications through the local mitigation agreement. Improvements that may be needed for Route 17 are up to the State government. The Tribe provides mitigation funds that are intended to mitigate such impacts through the Tribal-State compact. The State has the right to choose how and where to use these funds.

(3) Your third issue appears to be higher taxes and rent.

Your local taxes are unrelated to whether casinos come to the region. Studies show that casinos induce regional growth and increased commerce that produces higher tax income for local and State governments without raising taxes for residents. Regional growth includes an inherent means of mitigation since any new resident that moves to the region would also pay taxes that support local services, just like everyone else. That distributes the cost of services to a greater number of people. The history of the region shows that it has been able to support a much greater number of people than it currently does so housing shortages may not be felt immediately. It is expected that new housing would be built in the region and rents may relate to a housing shortage, if that should arise. The local government also can choose to use the Tribal mitigation funds to assist those on a fixed income.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

ACTING Director, Eastern Region

ATTENTION Bureau of Indian Affairs March 28, 05

Dear Sirs:

This is to let you know how upset I am with the Casino proposal.

I understand that the cost of housing will go up, and I cannot afford that.

The last thing I want to expose my family to is crime + drugs. With the opening of Casinos that may be the result.

I hope you understand my dilemma!

Thank you.

Raiven Kate

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 20 2005

Mr. Rainey Katz
No Address Provided
Fax: (845) 434-2967

Dear Mr. Katz:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your concerns appear to be the cost of housing, and the impacts of crime and drugs.

Regional growth is a projected impact of the casino. New housing construction is a probable outcome of that regional growth. If a housing shortage occurs there may be impacts on housing costs and rental rates. Your concerns have been noted and will be taken into consideration.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K. [illegible]
ACTING Director, Eastern Region

Confirmation Report - Memory Send

Page : 001
Date & Time: 21-Apr-2005 04:57am
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	761
Date	:	21-Apr 04:56am
To	:	☎88454342967
Number of pages	:	001
Start time	:	21-Apr 04:56am
End time	:	21-Apr 04:57am
Pages sent	:	001
Status	:	OK

Job number : 761 *** SEND SUCCESSFUL ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 20 2005

Mr. Rainey Katz
No Address Provided
Fax: (845) 434-2967

Dear Mr. Katz:

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Your concerns appear to be the cost of housing, and the impacts of crime and drugs.

Regional growth is a projected impact of the casino. New housing construction is a probable outcome of that regional growth. If a housing shortage occurs there may be impacts on housing costs and rental rates. Your concerns have been noted and will be taken into consideration.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert L. [illegible]
ACTING Director, Eastern Region

ATT. Kurt Chandler

Franklin Keel Regional Director of BIA.

Re: Proposed casinos in Monticello

Please do all you can to stop this proposal; even one casino would ~~[illegible]~~ devastate this country how much more so with five. We will do all we can to ~~[illegible]~~ stop the place. I am confident that you will listen to our petition and would never enter your mind again to allow opening such places over here.

With much Appreciation,

Rae Brown

resident of Sullivan County

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 20 2005

Ms. Rae Biran
No Address Provided
Fax: (845) 434-1009

Dear Ms. Biran:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. Your objection to casinos in Sullivan County has been noted and will be taken into consideration.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K. [illegible]

ACTING Director, Eastern Region

Confirmation Report - Memory Send

Page : 001
Date & Time: 20-Apr-2005 02:05pm
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	755
Date	:	20-Apr 02:04pm
To	:	☎88454341009
Number of pages	:	001
Start time	:	20-Apr 02:04pm
End time	:	20-Apr 02:05pm
Pages sent	:	001
Status	:	OK

Job number : 755 *** SEND SUCCESSFUL ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 20 2005

Ms. Rae Biran
No Address Provided
Fax: (845) 434-1009

Dear Ms. Biran:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. Your objection to casinos in Sullivan County has been noted and will be taken into consideration.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K [illegible]

ACTING Director, Eastern Region

03/28/2005 18:08 845-434-1009 YGZM

302

Attn. Kurt Chandler

Franklin Keel Regional Director of B.I.A.

Re: Proposed Casinos in Monticello

Please do all you can to stop this proposal; even one casino would be ~~very~~ very unappreciated by all the residents of Sullivan County who live here and raise families here. We will do all we can to stop this, however we are sure you will make this unnecessary; as you certainly will understand the importance of not openning off reservation casinos in traditional family oriented communities. The possible damage to the quality of life here is not to be estimated.

With all do respect,
Yisroel Biran
Yisroel Biran (local resident)

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Mr. Yisrael Biran
No Address Provided
Fax: (845) 434-1009

Dear Mr. Biran:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your main objection appears to be impacts on community character and that the casinos are off-reservation. Regional growth is a projected side effect of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration.

While the casino is off-reservation, the Indian Gaming Regulatory Act allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

Confirmation Report — Memory Send

Page : 001
Date & Time: 22-Apr-2005 08:47am
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	782
Date	:	22-Apr 08:41am
To	:	☎88454341009
Number of pages	:	001
Start time	:	22-Apr 08:42am
End time	:	22-Apr 08:43am
Pages sent	:	001
Status	:	OK

Job number : 782 *** SEND SUCCESSFUL ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Mr. Yisrael Biran
No Address Provided
Fax: (845) 434-1009

Dear Mr. Biran:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your main objection appears to be impacts on community character and that the casinos are off-reservation. Regional growth is a projected side effect of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration.

While the casino is off-reservation, the Indian Gaming Regulatory Act allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Director, Eastern Region

03-28-05P02:38 RCVD

March 21, 2005

Mr. Franklin Keel
Regional Director, Eastern Office
Bureau of Indian Affairs
711 Stewarts Ferry Pike
Nashville, Tenn. 37214

Dear Mr. Keel,

My name is Rob Jagodzinski, I am a resident of Westchester County, New York, and an avid flyfisherman and outdoorsman.

I am writing to voice my strong opposition to New York state's proposal to allow the construction of five Indian casinos in the Catskills mountains.

I feel this is a disastrous proposal for a number of reasons.

The casinos, in my opinion, would bring nothing short of a plague to the Catskills region. The casino plan threatens the forests, streams and overall environmental health of this area, which requires more protections now as opposed to ill-advised development such as the casinos proposals.

The plan would turn the modest highways of the region (especially Route 17) into veritable parking lots, with gridlock stretching for many miles in each direction. The casinos, after all, are proposed to be built in close proximity to one another. And they would draw tens of thousands of gamblers each day. This tidal wave of traffic would far exceed the maximum capacity for Route 17, which is not a super highway but actually a fairly modest local roadway.

The casinos will also scar fragile ecosystems in the Catskills.

For instance, one of the casinos is set to be built at the head of an area called the Neversink River Gorge. The state owns a huge chunk of land encompassing the gorge. The place is home to diverse wildlife, including deer, bear and turkey. There are old growth hemlock forests there. And the Neversink River is a blue ribbon trout stream.

If a casino is built at the head of the gorge, it will poison the waters with its polluted runoff from parking lots, service roads, fertilized lawns and such. And wastewater will most likely be dumped into the river, severely degrading the water quality and most likely destroying the trout population.

It is my understanding that some of the other casinos would dump wastewater into Kiamesha Creek, a Neversink River tributary. This will further degrade the Neversink's waters.

Let me close by asking you to take these major environmental impacts into account when weighing the casinos plan. And when taken into account, it becomes clear these environmental impacts are far too overwhelming to allow the casinos plan to be approved.

Therefore I strongly urge you to work to halt the casinos proposal.

Thank you for hearing me out on this issue.

Best regards,

Rob Jagodzinski
821 North Broadway
Irvington, NY 10533

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 14 2005

Mr. Rob Jagodzinski
821 North Broadway
Irvington, NY 10533

Dear Mr. Jagodzinski:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have expressed concerns about threats to streams, forests, ecosystems, wildlife, water pollution, Kiamesha Creek and Route 17 traffic.

The casino site was formerly used for surface mining and an automobile salvage yard, adjacent to the Neversink River. The natural habitat was extremely damaged from these operations. The Bureau of Indian Affairs required extensive remediation for this property to make it suitable to take into trust. Studies show that casino visitors do not tend to visit natural areas. They limit their activities to the casinos as well as general tourism such as shopping and dining. Regulatory authorities are in place to protect such areas and control impacts to these natural areas due to regional growth. There are no discharges into Kiamesha Creek. The impacts you fear are not valid.

Please read the DEIS where you will find the stormwater control plan to be very extensive and complete. Creating impervious surfaces next to a cold water stream can have serious impacts on the river system. That is why our environmental staff worked extensively with the contractors to assure that stormwater impacts would be minimal. There are both catch basins and a wetland designed to remove most sediments and contaminants before they can reach the river. The slow water introduction to the river from the wetland also allows temperature acclimation. The automobile salvage yard and surface mining operation previously using the site had much less control. There were potential river impacts from both oil spills and mine tailings. The extensive remediation we required has now removed these sources of impact.

Trust property is also subject to environmental controls issued by the Environmental Protection Agency. Controls and mitigations are in place for every project aspect to assure that the project does not have the impacts you fear. While regional growth may have some impacts in changing community character, as well as adding impervious surfaces, the appropriate regulatory authorities can limit most natural resource impacts.

Mitigation payments to the State through the Tribal-State compact are intended to cover issues such as Route 17 traffic and related air quality deterioration. The Tribe's mitigation agreement

with local government annually provides 15 million dollars to mitigate any perceived impact that the casino may have. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions, local roads and increased load to community services and police that may be associated with the casino.

Casino planners worked with the local government in developing local roadway modifications that are designed to minimize local traffic impacts. The Tribe will be paying for these modifications through the local mitigation agreement. Improvements that may be needed for Route 17 are up to the State government. The Tribe provides mitigation funds that are intended to mitigate such impacts through the Tribal-State compact. The State has the right to choose how and where to use these funds. If these funds are used as intended the traffic and air quality issues should be fully mitigated.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

ACTING Director, Eastern Region

To: Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214

Attention: Kurt Chandler

I, as a citizen of Sullivan County, and in close proximity to the proposed site of the 5 new casinos, am strongly apposed to this ~~new~~ proposal. The detrimental impact the casinos will bring to this neighborhood is enormous! It would be devastating to see how this county would change for the bad! How come there was no kind of study done to show the impact the casinos will bring? What do these tribe want from us? These 5 proposed casinos are all OFF-RESERVATIONS. Let them have their carinos elsewhere!

If the casinos would come crime rate would go up tremendously and this country-like county would be worse off then the city. The peaceful life of this county would be completely ruined by the traffic + pollution. Taxes would go up, car insurance would go up - and we cannot afford that. We moved here so that we can have a quiet + cheap way of life. Not for this!
Please, do all that you can to stop this proposal!

Sincerely, Miriam Kaufman

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Ms. Miriam Kayfnier
No Address Provided
Fax: (845) 434-3407

Dear Ms. Kayfnier:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You question the extent of studies performed. Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area.. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

The studies in the DEIS are thorough and complete concerning the potential impact of the project as well as cumulative impact of up to three casinos for the region. The potential impacts of five casinos are not known at this time but controls are built into the process to provide mitigation for such unknown impacts. The Bureau of Indian Affairs has only received applications from three tribes, so projecting impact beyond the known data would be pure speculation. We must consider potential impacts, but we also must consider whether the project provides the means of mitigating potential impacts. By building controls into the process, even such unknowns can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each Tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues that you are concerned about, such as crime and other social issues. Each Tribe also has to make a compact with the State where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any State controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

You appear concerned about regional growth impacts, and are worried that your taxes would increase. The regional growth would include casino employees and related support service personnel. While some people applaud regional growth due to the economic benefits, others deplore it. The taxes that residents pay for community services are unrelated to the presence of casinos. Studies show that the induced regional growth and increased commerce provides increases in local and state tax revenues without raising taxes for residents. The Indian Gaming Regulatory Act (IGRA) disallows payments from the tribes to government agencies in lieu of taxes, but allows mitigation payments that are intended to directly address the impacts. The intention under IGRA is for the government agency that receives these payments to use them to do the roadwork, hire the personnel, or otherwise support the programs that may be impacted. Mitigation payments to the State through the Tribal-State compact are intended to cover issues such as Route 17 traffic and related air quality deterioration. The Tribe's mitigation agreement with local government annually provides 15 million dollars to mitigate any perceived impact that the casino may have. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions, local roads and increased load to community services and police that may be associated with the casino. Regional growth also includes an inherent means of mitigation since any new resident that moves to the region would also pay taxes that support local services, just like everyone else. That distributes the cost of services to a greater number of people. The history of the region shows that it has been able to support a much greater number of people than it currently does.

You express concern over a potential loss of peace and quiet. Peace and quiet are relative measures that are subject to individual tolerance levels. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration, along with the need for increased regional commerce expressed by others.

You are concerned about the casinos being off-reservation. Many American Indian tribes have had a long history of poverty and lack of economic opportunity. Congress recognized that the physical locations of reservations limit tribal income generation capabilities and passed IGRA to specifically address that problem. IGRA provides that federally recognized tribes have the right to establish a casino in their home state, if that state already has any form of legalized gambling, including a State lottery. New York already has a State lottery, and the State legislature authorized casinos in the Sullivan County region. The Stockbridge-Munsee Community Band of Mohican Indians currently reside in Wisconsin instead of New York as they once did, but filed a land claim for the loss of their former treaty property in New York. While all of the proposed tribal casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located

in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Confirmation Report — Memory Send

Page : 001
Date & Time: 22-Apr-2005 08:50am
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	780
Date	:	22-Apr 08:40am
To	:	☎88454343407
Number of pages	:	003
Start time	:	22-Apr 08:46am
End time	:	22-Apr 08:50am (Resend time :22-Apr 04:50pm)
Pages sent	:	000
Status	:	NG B0

Job number : 780 *** SEND FAILED ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Ms. Miriam Kayfnier
No Address Provided
Fax: (845) 434-3407

Dear Ms. Kayfnier:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You question the extent of studies performed. Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

The studies in the DEIS are thorough and complete concerning the potential impact of the project as well as cumulative impact of up to three casinos for the region. The potential impacts of five casinos are not known at this time but controls are built into the process to provide mitigation for such unknown impacts. The Bureau of Indian Affairs has only received applications from three tribes, so projecting impact beyond the known data would be pure speculation. We must consider potential impacts, but we also must consider whether the project provides the means of mitigating potential impacts. By building controls into the process, even such unknowns can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each Tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues that you are concerned about, such as crime and other social issues. Each Tribe also has to make a compact with the State where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any State controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

Confirmation Report - Memory Send

Page : 001
Date & Time: 22-Apr-2005 11:36am
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number : 793

Date : 22-Apr 11:24am

To : ☎88454343407

Number of pages : 003

Start time : 22-Apr 11:31am

End time : 22-Apr 11:36am (Resend time :22-Apr 07:36pm)

Pages sent : 000

Status : NG B0

Job number : 793 *** SEND FAILED ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Ms. Miriam Kayfnier
No Address Provided
Fax: (845) 434-3407

Dear Ms. Kayfnier:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You question the extent of studies performed. Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

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Confirmation Report - Memory Send

Page : 001
Date & Time: 22-Apr-2005 12:42pm
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	798
Date	:	22-Apr 12:33pm
To	:	☎88454343407
Number of pages	:	003
Start time	:	22-Apr 12:35pm
End time	:	22-Apr 12:42pm (Resend time :22-Apr 08:42pm)
Pages sent	:	000
Status	:	NG 80

Job number : 798 *** SEND FAILED ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Ms. Miriam Kayfnier
No Address Provided
Fax: (845) 434-3407

Dear Ms. Kayfnier:

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You question the extent of studies performed. Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

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Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike, Nashville, Tenn.
To: Franklin Keel, Regional Director
Attn: Kurt Chandler

From ...
65 Laurel Park Rd. Ft
Fallsburg N.Y. 12733

March 28, 05

I would like to express my strong feelings of protest against the proposal of casinos in Sullivan County where I reside I would be embarrassed to tell anyone that I live in Sullivan County. It would be like saying I live in Las Vegas. It would cause shame and guilt to me and my entire family!! Its quality that counts not quantity!! The traffic and safety on the roads would bring the summer hazards to Sullivan County all year around. Please stop this proposal!!!

Michael Schloss Michael Schloss, Fallsburg N.Y. 12733

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Mr. Michael Schloss
65 Laurel Park Road
Fallsburg, NY 12733

Dear Mr. Schloss:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have expressed concerns about traffic and road safety.

Mitigation payments paid by the Tribe to the State through the Tribal-State compact are intended to cover issues such as Route 17 traffic and related air quality deterioration. The Tribe's mitigation agreement with local government annually provides 15 million dollars to mitigate any perceived impact that the casino may have. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions, local roads and increased load to community services and police that may be associated with the casino.

Casino planners worked with the local government in developing local roadway modifications that are designed to minimize local traffic impacts. The Tribe will be paying for these modifications through the local mitigation agreement. Improvements that may be needed for Route 17 are up to the State government. The Tribe provides mitigation funds that are intended to mitigate such impacts through the Tribal-State compact. The State has the right to choose how and where to use these funds. If these funds are used as intended the traffic and air quality issues should be fully mitigated. Improvements to traffic along Route 17 should also reduce air pollution from current conditions. With improvements to Route 17 the accident rate should also decrease.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K. [illegible]

ACTING Director, Eastern Region

ATT: KURT CHANDLER

M. & R. Sorotzkin
14 Parness Road,
Fallsburg, NY 12733

Mr. Franklin Keel, Regional Director,
Bureau of Indian Affairs,
711 Stewart Ferry Pike
Nashville, TN 37214

March 28, 2004

Dear Sir,

This is a letter to express our strong objections at the possibility of casinos being set up at our place of residence - Sullivan County, New York.

We realize the casinos will affect us detrimentally in many ways. * Crime rates will obviously go up dramatically * the quality of life - tranquility and space that attracted us to Sullivan County will be sacrificed for the casinos. * Traffic issues - (A) congestion (B) car insurance premiums and (C) safety on the roads will definetly change for the worse.

We strongly condemn this proposal especially as we are OFF RESERVATION. We are not on tribal lands. We request an official and comprehensive study on the impact of casinos in our neighborhood.

We do hope that you understand our concerns,

Yours sincerely, Moshe & Rachel Sorotzkin

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Mr. Moshe and Ms. Rachel Sorotzkin
14 Parness Road
Fallsburg, NY 12733

Dear Mr. and Ms. Sorotzkin:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) You object to casinos in Sullivan County because you believe that crime rates will increase.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

(2) The quality of life in Sullivan County will be impacted.

Regional growth and increased commerce are projected side effects of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration.

(3) Traffic, car insurance and road safety is also an issue.

Casino designers worked with local planners to minimize the traffic impacts the casino may have on the local population. In Sullivan County the traffic impacts from the casino are expected to be minimal due to these mitigation measures. While some potential impacts are unavoidable, the casino designers put in a great deal of thought into site selection, selecting a site close to Route 17, to minimize impacts. The local mitigation agreement between the Tribe and local government provides 15 million dollars annually to cover any increase in local costs for schools, local roads and social services such as gambling addictions due to the casino. The Tribal-State compact required by the Indian Gaming Regulatory Act (IGRA) is intended to mitigate impacts under State control. If the State chooses to the funds as intended by IGRA, the traffic and related safety and air quality along Route 17 should improve.

(4) You also have an issue with the casino being off-reservation.

While the casino is off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Dell

Director, Eastern Region

03-28-05P02:37 RCVD

Dear Sir,

For the past 35 years, I've been enjoying the peace and quiet of Sullivan County. Therefore, I strongly oppose casinos in our county because they will bring traffic, crime, and noise. Please take this into consideration.

Sincerely yours,
Ilsa Grelick

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 1 2005

Mr. Isser Gorelick
11 Yeshiva Lane
Fallsburg, NY 12733

Dear Mr. Gorelick:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You object to casinos due to traffic, crime and noise. Your objection will be taken into consideration if the Bureau of Indian Affairs makes the decision.

Casino planners worked with the local government in developing local roadway modifications that are designed to minimize local traffic impacts. The Tribe will be paying for these modifications through the local mitigation agreement. Improvements that may be needed for Route 17 are up to the State government. The Tribe provides mitigation funds that are intended to mitigate such impacts through the Tribal-State compact. The State has the right to choose how and where to use these funds. If these funds are used as intended the traffic and air quality issues should be fully mitigated.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

While there may be an increase in noise due to regional growth or from additional regional traffic, the casino project should not be an objectionable source of noise. The Tribe is sensitive to the needs of the local community and is making every effort to display a good neighbor policy. Casino planners have worked to make sure the casino minimizes impacts on neighbors.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Yechezkiel Magid
Forty-Seven Estate Drive
Fallsburg, NY 12733

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler

RE: Casinos in Sullivan County

March 28, 2005

Dear Kurt,

This letter is to advise you of the strong opposition, me and my family have, to this terrible possibility of opening casinos in our back yard. I would firstly recommend you live here for a while so you can understand the dramatic change such a move would have on our day to day lives.

1) In addition to the increase(inevitable) in school taxes-(which as it is, is the highest rate in the east coast) there will be a shortage in police and firefighters to combat the increase of crime and addiction.

2)There will also be a tremendous increase in the already poor air quality we have.

3)Never mind the increase in traffic which will be totally

impossible.

4)Our auto insurance rates will also increase to the traffic and accidents which will occur.

5)I will further bring to your attention, that these five proposed casinos are all **OFF-RESERVATION**. I do not have any relationship to these tribes, they are all strangers to us. ***Their*** land claims is **not *our* problem.** This move by foreigners to this community will totally ruin the entire area.

There are many more reasons for objections to this move, I have however, listed some of the ones that came to mind.

In summary, I hope you will reconsider the negative impact this proposal will have on our lives and you will therefore oppose this proposal.

Sincerely yours,

Yechezkiel Magid

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Mr. Yechezkiel Magid
47 Estate Drive
Fallsburg, NY 12733

Dear Mr. Magid:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have expressed concerns about taxes, pollution, traffic, insurance and the proposed casinos being off-reservation.

The taxes that residents pay for are unrelated to the presence of casinos. Studies show that the induced regional growth and increased commerce provides increases in local and state tax revenues without raising taxes for residents. The Indian Gaming Regulatory Act (IGRA) disallows payments from the tribes to government agencies in lieu of taxes, but allows mitigation payments that are intended to directly address the impacts. The intention under IGRA is for the government agency that receives these payments to use them to do the roadwork, hire the personnel, or otherwise support the programs that may be impacted. Mitigation payments to the State through the Tribal-State compact are intended to cover issues such as Route 17 traffic and related air quality deterioration. The Tribe's mitigation agreement with local government annually provides 15 million dollars to mitigate any perceived impact that the casino may have. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions, local roads and increased load to community services and police that may be associated with the casino. Regional growth also includes an inherent means of mitigation since any new resident that moves to the region would also pay taxes that support local services, just like everyone else. That distributes the cost of services to a greater number of people.

Casino planners worked with the local government in developing local roadway modifications that are designed to minimize local traffic impacts. The Tribe will be paying for these modifications through the local mitigation agreement. Improvements that may be needed for Route 17 are up to the State government. The Tribe provides mitigation funds that are intended to mitigate such impacts through the Tribal-State compact. The State has the right to choose how and where to use these funds. If these funds are used as intended the traffic and air quality issues should be fully mitigated. Improvements to traffic along Route 17 should also reduce air pollution from current conditions. With improvements to the Route 17 the accident rate should also decrease. Your insurance rates should not be impacted.

Many American Indian tribes have had a long history of poverty and lack of economic opportunity. Congress recognized that the physical locations of reservations limit tribal income generation capabilities and passed IGRA to specifically address that problem. IGRA provides that federally recognized tribes have the right to establish a casino in their home state, if that state already has any form of legalized gambling, including a State lottery. New York already has a State lottery, and the State legislature authorized casinos in the Sullivan County region. The Stockbridge-Munsee Community Band of Mohican Indians currently reside in Wisconsin instead of New York as they once did, but filed a land claim for the loss of their former treaty property in New York. While all of the proposed tribal casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Mar, 28 2005
From Avrohom + Blumy Rosengarten

To Franklin Keel Regional Director
Bureau of Indian Affairs
ATTN: Kurt Chandler

We are living in Sullivan County for many years. Sullivan County is a very peaceful community and we are happy to be part of it. However we are very upset with the possibility of having casinos in our area. This will definitly cause all kinds of crime in our area, plus many health problems. This will cause thousands of residence to leave the area, and many summer camps to shut their doors.

We strongly demand that a study of the impact of casinos in our area be done.

Truly Yours
Avrohom + Blumy Rosengarten

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 0 2005

Mr. Avrohom Rosengarten
No Address Provided
Fax: (845) 434-8635

Dear Mr. Rosengarten:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your concerns are noted to be crime, health problems, a concern that current residents may leave and summer camps may shut their doors.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

We are not aware of any potential impacts related to health problems. The Indian Gaming Regulatory Act (IGRA) provides for mitigation through the required Tribal-State compact and the local mitigation agreement. If the local and State governments use the mitigation funds that are provided by the Tribe as intended by IGRA, community services such as hospitals and ambulances will be routinely funded and road improvements will mitigate traffic impacts so that local air quality will not deteriorate.

Regional growth is a projected induced impact of the project, rather than a reduction in local population.

The only summer camp that we are aware of that may be impacted is the Kutsher's Sport Academy, currently located at the proposed site of the Mohawk Mountain Casino. If that project is approved it will continue to operate at a different location, and will not close down.

Your letter is one of several that we have received that contains unwarranted fears that are not based upon the facts. We are aware of how such misinformation can spread and encourage you to read the DEIS and find out the facts.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

ACTING Director, Eastern Region

Confirmation Report — Memory Send

Page : 001
Date & Time: 20-Apr-2005 02:08pm
Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

Job number	:	756
Date	:	20-Apr 02:05pm
To	:	☎88454348635
Number of pages	:	002
Start time	:	20-Apr 02:05pm
End time	:	20-Apr 02:08pm
Pages sent	:	002
Status	:	OK

Job number : 756 *** SEND SUCCESSFUL ***

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 2 0 2005

Mr. Avrohom Rosengarten
No Address Provided
Fax: (845) 434-8635

Dear Mr. Rosengarten:

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Your concerns are noted to be crime, health problems, a concern that current residents may leave and summer camps may shut their doors.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

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Regional growth is a projected induced impact of the project, rather than a reduction in local population.

The only summer camp that we are aware of that may be impacted is the Kutsher's Sport Academy, currently located at the proposed site of the Mohawk Mountain Casino. If that project is approved it will continue to operate at a different location, and will not close down.

ESTHER KATZ
190 BARNES BLVD.
KIAMESHA LAKE, NY 12751
3-28-05

FRANKLIN KEEL, REGIONAL DIRECTOR
BUREAU OF INDIAN AFFAIRS
EASTERN REGIONAL OFFICE
711 STEWART FERRY PIKE
NASHVILLE, TN 37214

ATTN: KURT CHANDLER

DEAR SIR:

I MOVED TO SULLIVAN COUNTY TWO YEARS AGO FROM NYC. A MAJOR FACTOR IN MY FAMILY'S DECISION TO MOVE WAS A DESIRE FOR A BETTER QUALITY OF LIFE THAN THE CITY COULD GIVE US. WE WANTED FRESH AIR, OPEN SPACES, SMALL-TOWN FRIENDLINESS. NOW, WITH THE PROPOSAL OF NOT ONE BUT FIVE CASINOS IN SULLIVAN COUNTY, I SEE MY HOPES BEING DASHED. FIVE CASINOS WOULD MEAN A HUGE INCREASE IN OUR POPULATION AND EVERYONE WILL SUFFER FOR IT. CRIME RATES, POLLUTION, NOISE, PROPERTY & SCHOOL TAXES WILL GO UP, NOT TO MENTION INSURANCE RATES. OUR POLICE, FIRE DEPT., HOSPITALS, EVEN HIWAYS ARE NOT EQUIPPED TO HANDLE SUCH A HUGE INFLUX. AND ALL THIS IS TO SETTLE A LAND CLAIM THAT HAS NOTHING TO DO WITH OUR COMMUNITY; THESE ARE NOT TRIBAL LANDS!!

PLEASE, PLEASE, RECONSIDER! DO NOT ALLOW MY FAMILY'S AMERICAN DREAM TO GO UP IN SMOKE!

THANK-YOU,

E Katz

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Ms. Esther Katz
190 Barnes Blvd.
Kiamesha Lake, NY 12751

Dear Ms. Katz:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have expressed concerns about regional growth, crime, pollution, impacts on police, the fire department, hospitals, insurance rates, highways and the Tribal land claim having nothing to do with Sullivan County.

The regional growth would include casino employees and related support service personnel. While some people applaud regional growth due to the economic benefits, others deplore it. The taxes that residents pay for community services are unrelated to the presence of casinos. Studies show that the induced regional growth and increased commerce provides increases in local and state tax revenues without raising taxes for residents. The Indian Gaming Regulatory Act (IGRA) disallows payments from the tribes to government agencies in lieu of taxes, but allows mitigation payments that are intended to directly address the impacts. The intention under IGRA is for the government agency that receives these payments to use them to do the roadwork, hire the personnel, or otherwise support the programs that may be impacted. Mitigation payments to the State through the Tribal-State compact are intended to cover issues such as Route 17 traffic and related air quality deterioration. The Tribe's mitigation agreement with local government annually provides 15 million dollars to mitigate any perceived impact that the casino may have. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions, local roads and increased load to community services and police that may be associated with the casino. Regional growth also includes an inherent means of mitigation since any new resident that moves to the region would also pay taxes that support local services, just like everyone else. That distributes the cost of services to a greater number of people. The history of the region shows that it has been able to support a much greater number of people than it currently does.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including

crime. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

Casino planners worked with the local government in developing local roadway modifications that are designed to minimize local traffic impacts. The Tribe will be paying for these modifications through the local mitigation agreement. Improvements that may be needed for Route 17 are up to the State government. The Tribe provides mitigation funds that are intended to mitigate such impacts through the Tribal-State compact. The State has the right to choose how and where to use these funds. If these funds are used as intended the traffic and air quality issues should be fully mitigated. Improvements to traffic along Route 17 should also reduce air pollution. The traffic mitigations should help reduce accident rates, so that casinos would not cause your insurance to rise.

Many American Indian tribes have had a long history of poverty and lack of economic opportunity. Congress recognized that the physical locations of reservations limit tribal income generation capabilities and passed IGRA to specifically address that problem. IGRA provides that federally recognized tribes have the right to establish a casino in their home state, if that state already has any form of legalized gambling, including a State lottery. New York already has a State lottery, and the State legislature authorized casinos in the Sullivan County region. The Stockbridge-Munsee Community Band of Mohican Indians currently reside in Wisconsin instead of New York as they once did, but filed a land claim for the loss of their former treaty property in New York. While all of the proposed tribal casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler

Heir Kalatsky
9 Estate Drive
Fallsburg, NY 12733
March 28, 2005

We are very concerned that our county is in the consideration to be the site of five casinos. Attempting to site the casinos in Sullivan County is a perversion of federal law and detrimental in extreme to our community. Sullivan County does not have to deal with the Indians and claims settlements. We have no tribal lands here. Five casinos will devestate our county. There is no study of any kind on the cumulative impact of five casinos here. Before we even consider opening even one casino, there has to be a study of the impact of theese five casinos in our county. The opening of casinos here will drive up taxes, increase real estate prices, there will be a shortage of housing, and air quality will get even worse. We are in the hope that you will consider all the issues expressed in this letter.

Sincerely,
Heir Kalatsky

FROM : FAX NO. : May. 25 2002 01:12PM P1

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Ms. Meir Kalatsky
9 Estate Drive
Fallsburg, NY 12733

APR 2 1 2005

Dear Ms. Kalatsky:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your concerns are noted to be that the casinos are off-reservation, the need for a five casino cumulative impact study, taxes, real estate prices, a housing shortage, and air quality.

Many American Indian tribes have had a long history of poverty and lack of economic opportunity. Congress recognized that the physical locations of reservations limit tribal income generation capabilities and passed the Indian Gaming Regulatory Act (IGRA) to specifically address that problem. IGRA provides that federally recognized tribes have the right to establish a casino in their home state, if that state already has any form of legalized gambling, including a State lottery. New York already has a State lottery, and the State legislature authorized casinos in the Sullivan County region. The Stockbridge-Munsee Community Band of Mohican Indians currently reside in Wisconsin instead of New York as they once did, but filed a land claim for the loss of their former treaty property in New York. While all of the proposed tribal casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large.

The Final Environmental Impact Statement (FEIS) will include additional information on the potential impact of five casinos. At this time, we only have applications from three tribes for casinos in Sullivan County. As stated in the DEIS, the information is unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that the proposed casinos will have similar drawing power and will be located within a short distance of Route 17. The original three casino State approval allowed for casinos in both Sullivan and Ulster Counties. A casino in Ulster County would have a much different impact. Without hard data it would be

irresponsible to attempt to project full quantitative impacts, and the speculation that will be presented in the FEIS must be considered subject to considerable error.

The IGRA built controls into the process so that even the unknown impact of five casinos can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues, such as school impacts, crime and other social issues. Under IGRA each tribe also has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues. If the State chooses to use the mitigation payments as IGRA intended, the issues under State control such as traffic along Route 17 and associated air quality will be very well funded and fully mitigated.

Your local taxes are unrelated to whether casinos come to the region. Studies show that casinos induce regional growth and increased commerce that produces higher tax income for local and State governments without raising taxes for residents. Regional growth includes an inherent means of mitigation since any new resident that moves to the region would also pay taxes that support local services, just like everyone else. That distributes the cost of services to a greater number of people. The history of the region shows that it has been able to support a much greater number of people than it currently does so housing shortages may not be felt immediately. It is expected that new housing would be built in the region and rents or real estate costs may relate to a housing shortage, if that should arise. The local government also can choose to use the Tribal mitigation funds to assist those on a fixed income.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

03-28-05P02:13 RCVD

ENV.

Chava R Sher
53 Laurel Park Rd
Fallsburg, NY 12733

3/28/2005 2:35 PM

BY TELEFAX
Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214

Attn: Kurt Chandler

Re: Stockbridge-Munsee Casino Draft Environmental Impact Statement

Dear Mr. Keel,

As a long-term resident of Sullivan County, NY I vigorously oppose the proposed Stockbridge-Munsee and Mohawk Mountain casinos.

High stakes commercial gambling is foreign to our communities and repugnant to our moral beliefs. **The expansive gambling development currently contemplated would wholly transform and substantially damage our communities**

Sincerely yours,

Chava Sher

Chava R Sher

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 20 2005

Ms. Chava Sher
53 Laurel Park Road
Fallsburg, NY 12733

Dear Ms. Sher:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You note that you are opposed to casinos because they would not be compatible with your community, nor your moral beliefs. Your concerns will be taken into consideration.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K. [illegible]
Director, Eastern Region
ACTING

Ephraim Sher
53 Laurel Park Rd
Fallsburg, NY 12733

3/28/2005 2:35 PM

BY TELEFAX
Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214

Attn: Kurt Chandler

Re: Stockbridge-Munsee Casino Draft Environmental Impact Statement

Dear Mr. Keel,

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High stakes commercial gambling is foreign to our communities and repugnant to our moral beliefs. **The expansive gambling development currently contemplated would wholly transform and substantially damage our communities**

Sincerely yours

Ephraim Sher

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 20 2005

Mr. Ephraim Sher
53 Laurel Park Road
Fallsburg, NY 12733

Dear Mr. Sher:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You note that you are opposed to casinos because they would not be compatible with your community, nor your moral beliefs. Your concerns will be taken into consideration.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

ACTING Director, Eastern Region

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MR KEEL — WE NEED EXTENSION TO MAY 12TH FOR PUBLIC COMMENT ON DEIS STOCKBRIDGE-MUNSEE CASINO PROJECT. ALSO WE NEED CUMULATIVE IMPACT STUDY OF ALL 5 CASINOS. THANK YOU - Andrew Grant

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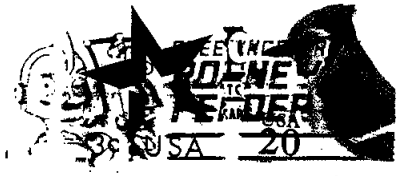

FRANKLIN KEEL
Director BIA
EASTERN OFFICE
711 Stewarts Ferry Pike
NASHVILLE TN 37214

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 24 2005

Mr. Andrew Grant
250 Ft. Wash
New York, NY 10032

Dear Mr. Grant:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have requested an extension of the public comment period for this project. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K [illegible]

ACTING Director, Eastern Region

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
EASTERN REGION
711 STEWARTS FERRY PIKE
NASHVILLE, TENNESSEE 37214

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Mr. Andrew Grant
250 Ft Wash
New York, NY 10032

NIXIE 100 0 1 *00 04/05/05
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UNABLE TO FORWARD

BC: 37214275199· *1359-11721-29-34

37214275199

(ATTN: Kurt Chandler)

We would like to strongly protest against the casino opening up in our area.

A main reason for our moving here was because it is a very rural peaceful place with your bringing or allowing a casino to be planted here, it would affect us terribly. There are many people like us who feel the same way and it would be very wrong to cause such unhappiness in a peaceful place.

The ways you will be affecting us will not just be "in theory". You will be ruining many of the normal routines of life.

1st ly- the highway 17 will be heavily congested and we will have to deal with the traffic when we need to get places which we do not have now! The 17 is not equipped to handle many more cars than it handles now and the casino will definitely bring a great volume of cars = so what will be?!!?!

Having a great volume of cars - with some people in a rush, some being a bit aggressive brings about accidents = and that causes the areas car insurance prices to rise = I don't need that!!

Also excuse me, but what type of people are coming to use the casino ?! On the whole, our area will become full of things and people that dont behave in their best behaviour while they're here - here is where they sort of "relax", let loose and we suffer, our children suffer, our safety suffers and this is definitely not what were looking for!!

I think you can get the picture of how terribly disastrous we feel this will be for us, our friends, our family, our social circle, our society. There are many more points to discuss but I will leave it off for now If anyone would like to hear more input about how we feel - you can contact us 845-436-4325

I really hope it wont get through!!!

MARGARET

P.S. Also, we all have jobs and are not impressed with the promise that the casino will provide jobs for people we don't need the casino, and we don't need the jobs it will provide!!

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 20 2005

Ms. Margaret Ehrenfeld
No Address Provided
Fax: (845) 436-4325

Dear Ms. Ehrenfeld:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You express concern over a potential loss of peace and quiet. Peace and quiet are relative measures that are subject to individual tolerance levels. Regional growth and increased commerce are a projected side effect of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration, along with the need for increased regional commerce expressed by others.

You express concern over potential congestion along Route 17. There is the potential for traffic and related air quality impacts along any currently congested portion of Route 17, especially if five casinos are approved for the region. In anticipation of such potential impacts, the Indian Gaming Regulatory Act (IGRA) requires each Tribe to form a compact with the State government to mitigate any potential impact under State control. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any State controlled issue such as roads and air quality, regardless of whether there is one casino or five. Route 17 is considered a State controlled road, so any upgrade for Route 17 would have to be provided by the State of New York. If the State uses the Tribal mitigation funds as intended by IGRA, Route 17 traffic will be fully mitigated. It is up to the State to determine whether that would result in additional traffic lanes along Route 17, a light rail system or other appropriate means as determined by the State. If the State performs the needed mitigation as IGRA intended, air quality and traffic problems would be greatly reduced.

You express concerns over the personal character of casino patrons, loosening of their normal behavior, and how that may impact local children. Studies have shown that the potential impacts of casinos have not been significantly different than any other site where large numbers of people gather, such as sporting events. The type of vacation attitude that you mention is a legitimate concern that appears to be a growing phenomenon observed in fans at racetracks or ballgames and college students on spring break. This concern will be taken into consideration.

You also note that casino jobs are not needed. Although you may consider casino jobs to be undesirable, there may be unemployed persons in your region that would appreciate such employment. That is a matter of personal preference, and not considered a potential project impact.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K Smith

ACTING Director, Eastern Region

Confirmation Report - Memory Send

Page : 001
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Line 1 : +615 467 2939
Line 2 : +6154672939
Machine ID : ERO-Natural Resources / Forestry

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Date	:	20-Apr 02:06pm
To	:	☎88454364325
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End time	:	20-Apr 02:09pm
Pages sent	:	002
Status	:	OK

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United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 20 2005

Ms. Margaret Ehrenfeld
No Address Provided
Fax: (845) 436-4325

Dear Ms. Ehrenfeld:

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You express concern over a potential loss of peace and quiet. Peace and quiet are relative measures that are subject to individual tolerance levels. Regional growth and increased commerce are a projected side effect of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration, along with the need for increased regional commerce expressed by others.

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You express concerns over the personal character of casino patrons, loosening of their normal behavior, and how that may impact local children. Studies have shown that the potential impacts of casinos have not been significantly different than any other site where large numbers of people gather, such as sporting events. The type of vacation attitude that you mention is a legitimate concern that appears to be a growing phenomenon observed in fans at racetracks or ballgames and college students on spring break. This concern will be taken into consideration.

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

Memorandum for the Record

A comment letter was received within the published comment period for the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. This letter was received from:

Ms. Isi Bollag

The original comment letter was lost after the reply was written.

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 01 2005

Ms. Isi Bollag
67 Laurel Park Road
Fallsburg, NY 12733

Dear Ms. Bollag:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You express concern over a potential loss of peace and quiet. Peace and quiet are relative measures that are subject to individual tolerance levels. Regional growth and increased commerce are a projected side effect of the casino project. While the casino planners have attempted to isolate the project from interfering with neighbors, any additional traffic along regional roads may have the potential to make others dissatisfied. Other people have mentioned that they moved to the region to find peace and quiet. Your concerns have been noted and will be taken into consideration, along with the need for increased regional commerce expressed by others.

Your second concern is for casino induced crime and addictions. The potential impacts of casinos in your region should not be significantly different than any other site where large numbers of people gather, such as sporting events. Before the State of New York considered the legalization of gambling they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The result is an increase in tax revenues for both state and local governments. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues that you are concerned about, such as crime and other social issues. The local mitigation agreement provides 15 million dollars annually to cover any increase in local costs for schools, local roads and social services such as gambling addictions due to the casino.

Your third concern is that the casinos are off-reservation, and that the land claim settlements are not your problem. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken from the Tribes in a manner not consistent with the Indian Trade and Intercourse Act of 1790. Some of these land claim settlements include supporting a casino as part of the settlement. One alternative to allowing casinos would be for the State of New York to pay the Tribes for these taken tribal lands. The choice for the State may come down to (1) receiving large sums of money by supporting tribal casinos or (2) paying out large sums of money to settle these land claims. Many New York State residents may consider these State budget issues to be their concern since they oppose any tax increase as a means to balance the State budget.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

→ Fax to Eastern Regn GTS

WHITEMAN OSTERMAN & HANNA LLP

ATTORNEYS AT LAW

ONE COMMERCE PLAZA
ALBANY, NEW YORK 12260
TEL 518.487.7600
FAX 518.487.7777
woh.com

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LUCY KATS
JEFFREY L. SHAINE

March 9, 2005

RECEIVED
MAR 11 2005
BUREAU OF INDIAN AFFAIRS
OFFICE OF INDIAN GAMING MANAGEMENT

Via Facsimile (202) 273-3153) & U.S. Mail
George Skibine
Director of Office of Indian Gaming
Bureau of Indian Affairs
United States Department of Interior
1849 C Street, NW—Mail Stop 4600
Washington, DC 20240

Re: EIS 050047, Draft EIS Stockbridge-Munsee Casino Project

Dear Mr. Skibine:

This firm represents Natural Resources Defense Council, Inc. ("NRDC") in connection with the development of proposed casinos in Sullivan County, New York. The purpose of this letter is to request an extension of the public comment period for the above-referenced draft EIS for a forty-five (45) day period to May 12, 2005.

The draft EIS is a lengthy document, consisting of more than a thousand pages and includes a number of technical appendices. A thorough technical review of such a lengthy draft EIS is clearly in the public interest for a project that, together with the other four casinos now proposed to be developed in Sullivan County, will have such far-reaching and significant impacts on the environment. The extension of the public comment period requested in this letter is the minimum amount of time that will be required to complete a thorough technical review of the draft EIS.

Your prompt action granting this request will be appreciated.

Very truly yours,

Philip H. Gitlen

Philip H. Gitlen

cc: Mark Izeman, Esq. (NRDC)

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 18 2005

Mr. Philip H. Gitlen
Whiteman Osterman & Hanna, Attorneys at Law
One Commerce Plaza
Albany, NY 12260

Dear Mr. Gitlen:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have requested an extension of the public comment period for this project. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Franklin Keel

Director, Eastern Region

8A Lobo Lane
Mountaindale, N.Y 12763
3/27/05

Bureau of Indian Affairs
711 Stewart Ferry Pike
Nashville, Tn 37214
Attn: Kurt Chandler

Dear Mr. Chandler

We are deeply concerned over the possibility that there will be casinos built here in Sullivan County.

We find it amazing that anyone could think that the presence of casinos could benefit our Community. The cannot possibly be any benefit when there will be an increase of crime and pollution.

There has been no study of the eventual impact of the 5 casinos here. We must have a non biased study before any steps can be made toward opening casinos

I also dont understand how we can have Indian Casinos, when we have no tribal lands here.

Respectfully yours,
Sherman Jearolman
Ruth [illegible]

Sullivan County residents for over 30 years

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 29 2005

Mr. Shimon Jearolmen
8A Lobo Lane
Mountaindale, NY 12763

Dear Mr. Jearolmen:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your first concern appears to be impacts on crime and community character. In the local agreement between the Tribe and local government, the Tribe is paying 15 million dollars annually to mitigate for any perceived negative social impact the casino may have. The Tribe is sensitive to the needs of the local community and is making every effort to display a good neighbor policy. Although the local governments will have the ability to choose where the money is used, that money is expected to fund school improvements and support social programs where needed. It is intended to offset the costs of any social impacts associated with the casino, including gambling addictions and increased load to community services and police that may be associated with the casino, as well as local roads and traffic impacts.

Before the State of New York considered the legalization of gambling, they commissioned a study to determine its impacts. These are documented in "The Report of New York State Task Force on Casino Gambling". This study includes the potential impacts of casinos including crime. It also documents the induced growth effect that causes regional growth and an expanding economy. The facility will have its own security force that will handle on-site issues, as well as having State police presence on-site. Induced regional growth will require an increase in police commensurate with the population and the increase in tax base. In most cases the percent of crimes in local communities around a casino is related to the population and does not significantly differ from previous percentages. Some local communities have experienced increases in traffic violations and similar problems related to an increase in the number of people in a small area. Such incidents are common to all entertainment facilities including sporting events where a large number of people gather.

Your second concern is for pollution. Casino planners worked with the local government in developing local roadway modifications that are designed to minimize local traffic impacts. The Tribe will be paying for these modifications through the local mitigation agreement. Improvements that may be needed for Route 17 are up to the State government. The Tribe provides mitigation funds that are intended to mitigate such impacts through the Tribal-State compact. The State has the right to choose how and where to use these funds. If these funds are used as intended the traffic and air quality issues should be fully mitigated. Improvements to traffic along Route 17 should also reduce air pollution.

Your third concern is for a five casino cumulative impact analysis. As already noted in the DEIS, the Final Environmental Impact Statement (FEIS) will include additional information. The regulation 40 Code of Federal Regulations (CFR) 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. As stated in the DEIS, information is currently unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos. The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that all the proposed casinos will have similar drawing power and will be located within Sullivan County close to Route 17. Since the specific size and location of two of the proposed casinos are unknown, it would be irresponsible to attempt to project full quantitative impacts that would be subject to considerable error. The additional narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

Your fourth concern appears to be that the casinos are off-reservation. It is true that the Stockbridge-Munsee land claim does not include Sullivan County, nor is the Bureau of Indian Affairs aware of Mohican historical sites within Sullivan County. The Indian Gaming Regulatory Act allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located elsewhere. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K Lampson

ACTING Director, Eastern Region

Malkah Katzenstein
61 Laurel Park Rd. Apt. #1
Fallsburg, NY 12733

March 28, '05

To Whom it May Concern:

I am writing the following letter in extreme frustration and desperation. I am personally acquainted with an individual who, was the apple of his teachers' and parents' eyes and who was a promising young adult and surely a future asset to society. But alas! The lure of gambling drove him away from all these dreams. For years he's been fighting the addiction that's holding him captive. The addictions that lure the youth of the ~~ge~~ young generations are worse than devastating. They ruin the lives of the individual and the future they hold. How can someone who is addicted to gambling pull themselves together and get a ~~good~~ job, get their lives together and begin families? What will this do to society? What will these 5 casinos do the future generations who might G-d forbid be lured into the falacy of gambling? What will it do to our county and all the surrounding counties who might come and gamble? How far will the devastating effects affect society at large financially? It is well known that these casinos will cause so much more harm to society than good. I, a young mother of 3 together with my husband am trying so hard to bring up the next generation to truth - to be assets to society. NOT to G-d forbid, become criminals like so many of the gamblers become. How can responsible individuals like yourselves bring in casinos that lure our youth and adults to gamble - and to waste the money + waste their time & time that should be going to building up relationships [illegible]

It is beyond me how these tribes could come into land that is off reservation to establish casinos that are so detrimental to society. Besides devastating society which is my main concern, the casinos will cause our car insurance to go up very much. They will cause our air to become worse than it is already. These are "off reservation" and just the thought of them opening is horrifying.

Who will stay in society to make sure that we aren't producing more criminals, more addicts? Why will people bring in these unthinkable places of gambling that ruin individuals and society?

I beg of anyone who can do anything to stop these casinos from opening to please step forth and declare: "We will not do this to you! We will not bring in places that ruin people's finances, relationships and future! We will help you build the future healthy generations! We will help you establish a healthy setting in the county that will ensure the best education and surrounding for your children, who are our future! We care about you more than these casinos who will not add any good to society. We are here to help you and not hinder!"

I appreciate all that will be done to ensure that these casinos will not open.

Thank You

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 29 2005

Ms. Malkah Katzenstein
61 Laurel Park Road, Apt. H 1
Fallsburg, NY 12733

Dear Ms. Katzenstein:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

(1) Your first concern is the impact of gambling addictions, especially on youth.

Underage gambling will not be allowed. It is anticipated that the compact with the State will disallow minors from gambling, as is common for other Tribal casinos. The Tribe has a local mitigation agreement that is intended to offset any increased costs associated with the casino. The local mitigation agreement provides 15 million dollars annually to cover any increase in local costs for schools, local roads and social services such as gambling addictions due to the casino.

(2) You question how tribes can get casinos off-reservation.

Many American Indian tribes have had a long history of poverty and lack of economic opportunity. Congress recognized that the physical locations of reservations limit tribal income generation capabilities and passed the Indian Gaming Regulatory Act (IGRA) to specifically address that problem. The IGRA provides that federally recognized tribes have the right to establish a casino in their home state, if that state already has any form of legalized gambling, including a State lottery. New York already has a State lottery, and the State legislature authorized casinos in the Sullivan County region. The Stockbridge-Munsee Community Band of Mohican Indians currently reside in Wisconsin instead of New York as they once did, but filed a land claim for the loss of their former treaty property in New York. While all of the proposed tribal casinos are all off-reservation, the IGRA allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located in other New York counties. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal

casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

(3) You believe the potential impacts on local society to be sufficient cause the denial of casinos in Sullivan County.

The Bureau of Indian Affairs (BIA) will take all viewpoints into consideration. The BIA must also take into consideration the legal rights of Indian tribes that were displaced from their homelands, their land claims, and how the provisions of IGRA apply to each tribe.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

ACTING Director, Eastern Region

03-28-05P02:56 RCVD

ENV

Mr Laizer Katz
POB 135
Kiamesha Lake, NY 12751

3/28/2005

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214

Attn: Kurt Chandler

Re: Stockbridge-Munsee Casino Draft Environmental Impact Statement

Dear Mr. Keel,

As a long-term resident of Sullivan County, NY I vigorously oppose the proposed Stockbridge-Munsee and Mohawk Mountain casinos.

High stakes commercial gambling is foreign to our communities and repugnant to our moral beliefs. **The expansive gambling development currently contemplated would wholly transform and substantially damage our communities**

Sincerely yours,

Laizer Katz

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 27 2005

Mr. Laizer Katz
P.O. Box 135
Kiamesha Lake, NY 12751

Dear Mr. Katz:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement for the proposed Stockbridge-Munsee Casino. Your objection to casinos in Sullivan County has been noted and will be taken into consideration.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

ACTING Director, Eastern Region

3/16/05

MR. KEEL, WE NEED MORE TIME TO STUDY THE DEIS OF STOCKBRIDGE - MUNSEE CASINO PROJECT. BOTH COPIES ARE ONLY AVAILABLE DURING DAYTIME WHEN MOST PEOPLE WORK. PLEASE EXTEND DEADLINE AT LEAST TO MAY 12TH. ALSO AS ENVIRONMENTAL ORGANIZATIONS SUCH AS NRDC NEED THE TIME FOR EXPERTS REVIEW. PLEASE, MR KEEL - FOR OUR COMMUNITY'S WELFARE..

Sincerely - Alice Turkel

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 24 2005

Ms. Alice Turkel
56 Houghtaling Road
Hurleyville, NY 12747

Dear Ms. Turkel:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You have requested an extension of the public comment period for this project. After consultation with the Bureau of Indian Affairs Central Office, and based on their recommendation, an extension of the comment period will not be granted. All comments must be received by March 28, 2005.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K Lampe

ACTING Director, Eastern Region

Alice Turkel
56 Houghtaling Road
Hurleyvile, NY 12747

March 28, 2005

VIA FAX AND MAIL
Franklin Keel, Regional Director
Bureau of Indian Affairs Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, Tennessee 37214

Re: Stockbridge–Munsee DEIS

Dear Mr. Keel

I am a resident of Hurleyville, in the Town of Thompson. I object to the proposed Stockbridge-Munsee casino in Bridgeville the Bureau of Indian Affairs's (BIA) consideration of multiple casinos in this area.

I cherish the peace and quiet and the natural beauty in this generally rural area. Moreover, the small businesses I have run out of my home, which include a ceramics craft shop and personal healing and therapy, rely on the peace of mind which characterizes this environment.

The plans to site casinos here, indeed to make our area a center of high stakes casino gambling, is a radical, offensive departure from our present quality of life. Even one casino, such as the Stockbridge-Munsee Bridgeville, would alter community character and introduce substantial sprawl and environmental degradation. Multiple casinos would thoroughly and permanently transform our town and region, which would be dominated by a culture of greed and materialism as well as the physical environmental impacts. Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed tribal territory, and the placement of casinos is foreign and offensive to our community. There is no basis for this wholesale intrusion into the community mores and ethics

The DEIS discusses none of these prospective impacts, which are clearly among the most substantial from the proposed casinos. I respectfully request you to supplement the study, to fully analyze the impacts on the human environment as the law requires.

Sincerely

Alice Turkel/DG

Alice Turkel

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 29 2005

Ms. Alice Turkel
56 Houghtaling Road
Hurleyville, NY 12747

Dear Ms. Turkel:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

Your first concern is for community character impacts, and a loss of peace and quiet. Additional narrative will be added to the DEIS to address this concern. The Bureau of Indian Affairs will take this issue into consideration.

Your second concern is that the casinos are off reservation. It is true that the Stockbridge-Munsee land claim does not include Sullivan County, nor is the Bureau of Indian Affairs aware of Mohican historical sites within Sullivan County. The Indian Gaming Regulatory Act allows special provisions when proposed casinos are off-reservation. One of these provisions allows a tribal casino to be placed on land restored to a tribe. Several of the proposed casinos are part of land claim settlement agreements signed by Governor Pataki that provides a Sullivan County casino, instead of their claimed land located elsewhere. The land claim settlement agreements will provide the residents of the State of New York unencumbered titles to former Indian lands that were taken in a manner not consistent with the Indian Trade and Intercourse Act of 1790. The monetary benefit to the State of New York in supporting any tribal casino is projected to be very large. Gaming compacts between states and Indian tribes typically provide the state a percentage of slot machine revenues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist, at (615) 467-1677.

Sincerely,

Robert K [illegible]

ACTING Director, Eastern Region

RECEIVED
MAR 16 2005
By

2

1. RD
2. ENV
3 Realty

From: PO BOX 56
OBERNBURG, NY
12767-0056

Date: March 10, 2005

To: Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

Please find enclosed substantive issues regarding the Draft Environmental Impact Statement of the proposed Stockbridge-Munsee casino in the Town of Thompson in Sullivan County, New York. I respectfully request that all issues be answered and resolved in the Final Environmental Impact Statement with a copy of the responses sent to me. **Please respond by issue number.**

Thank you.

Respectfully,

Stephen J. Bachop
STEPHEN J. BACHOP

enc.

1. If the site is not currently listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list, should it be? If not, why not?
2. Is the project located in a predominantly minority or low-income neighborhood?
3. Are there pools of liquid or soil staining, chemical spills, abandoned machinery, cars, refrigerators, etc.?
4. Are there current sanitary sewers and waste water disposal systems serving the site?
5. Will the project influence or be unduly influenced by transition of land uses?
6. Please respond to following issue: Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed Indian territory, and the placement of casinos is foreign and offensive to the community. There is no basis for this wholesale intrusion into the community mores and ethics.
7. How will any proposed private transportation systems impact and/or coordinate with public transportation systems currently in operation?
8. Does the applicant anticipate hiring a workforce from outside of the immediate community? If so, from what sources will the applicant recruit its workforce?
9. Does the project proposal include a full inventory and assessment of all hazardous materials associated with the project?
10. Is the site currently served by an adequate and acceptable water supply?
11. Is the property located within or directly adjacent to an historic district?
12. How will current sanitary sewers and waste water disposal systems be impacted by the proposed project, and at what cost?
13. Describe the site elevations and any accommodations required for significant slopes.
14. Is the proposed building footprint located in a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?
15. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of an Indian gambling casino upon the foreseeable disposable income loss to adjacent commercial, retail, restaurant, recreational and lodging facilities, over the next ten years?
16. Are there usual and customary children's play areas within the vicinity of the project site?
17. Does the project comply with Executive Order (E.O.) 11990, Protection of Wetlands, which discourages federal funding of new construction or filling in wetlands and compliance is required with the wetlands decision-making process (§ 55.20 of 24 CFR Part 55)?
18. Are other natural resources visible on site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project?
19. How will the applicant ensure that increased capacity needs of public transportation will be accommodated at the sole expense of the applicant and not the adjacent local governments?
20. Does the property's area of potential effects include an historic district or property?
21. Are there existing or abandoned transformers, fill/vent pipes, pipelines, drainage structures?
22. Is the project compatible with surround areas in terms of land use?
23. Please respond to following issue: There is no analysis of induced growth, contrary to federal requirements, the public interest and common sense. It is not possible to rationally assess the impacts of the casinos without at least a general review of the buildout which will accompany it. Simply relying on local zoning is neither analysis nor mitigation of these growth-sprawl issues.
24. What percentage of the project site is proposed for impervious surface, and how does this surface impact existing elements such as a sole water source or other aquifer?
25. Please project estimates of revenue associated with each gambling, commercial or retail site and equate that to an equivalent sales tax loss of disposable income to adjacent local communities.
26. For each alternative site considered by the applicant, please identify the process and professionals that made determinations that have ultimately assessed the proposed site as the environmentally preferred site.
27. Are there active rills and gullies on the project site?
28. What additional sanitary sewer and wastewater disposal systems are required and how will expansions of such infrastructure impact existing, connecting infrastructure in terms of capacity and annual cost?
29. Is there indication of cross-lot runoff, swales, drainage flows on the property?
30. Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1,000 feet), or railroads (within 3,000 feet)?
31. Is there paved access to the project site?
32. Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the vicinity of the project site?
33. Is the project compatible with surround areas in terms of building density?
34. Please respond to following issue: Overall, the plan to site five casinos in the Route 17 corridor is an affront and danger to the existing communities. It is ironic that the remedy for their supposed problem - economic stagnation - is a wholly disproportionate influx of nuisances including casino gambling and induced growth, pollution traffic and social ills.

35. What procedures are proposed for adjacent neighbors who wish to legitimately complain of excessive light or glare?
36. What is the total anticipated impervious surface coverage estimated for the proposed project?
37. How will a project workforce impact local community housing needs, projected over the next ten years?
38. If the applicant proposed to construct hotel or motel facilities at or adjacent to the proposed project, please calculate the estimated impact of business to existing tourist facilities, and the projected hotel occupancy tax loss to adjacent local governments, over the next ten years.
39. Is the project within 3,000 feet from the end of a runway at a civil airport?
40. What mitigations in terms of personnel, monitoring systems, training and counseling programs is the applicant proposing to minimize the impact of anticipated crime associated with the gambling industry?
41. Will the project affect or be affected by hazardous streets?
42. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
43. Are there unusual conditions on the site?
44. Does the project comply with 24 CFR 51, Subpart B that requires a Noise Assessment for proposed new construction?
45. How will a project workforce impact local housing over-crowding and code enforcement conditions that might impact adjacent communities, projected over the next ten years?
46. Please respond to following issue: It is unfair and wrong to at once transform the traffic in the region from generally clear with some limitations during rush hour, to generally busy and congested and overloaded during peak hours. Mobility would be significantly infringed, and those who disproportionately rely on automobiles, such as businesses, would be badly damaged.
47. Is the project located within a coastal barrier designated on a current FEMA flood map or Department of Interior coastal barrier resources map?
48. Please respond to following issue: Governor Pataki himself, the chief proponent of the plan to put five casinos in the Sullivan-Route 17 corridor, has recognized the need for a cumulative impact assessment. In officially commenting on the Stockbridge-Munsee casino the Governor has specifically advised the BIA to conduct such an assessment before approving any of the casinos.
49. Has the applicant developed a public safety evacuation and rescue plan for customers, and does the plan accommodate projected customers based upon high or low attendance that is associated with hours of operations, weekdays, holidays, and special events?
50. How will the applicant assess project site light and glare to adjacent properties?
51. Please respond to following issue: The pollution from such added traffic will damage air quality in the area, and exacerbate unhealthy conditions. Sullivan County residents already suffer from a disproportionate and growing number of respiratory problems. There is no justification for subjecting such individuals to a relatively sudden and serious deterioration in air quality and resulting threat to their health.
52. Are there drainage ways streams, rivers, or coastlines on or near the project site?
53. Are there any unresolved hazardous materials issues at the proposed site that could the state, county or a municipality to be determined to be potential responsible party?
54. How will the applicant mitigate large parking facilities (1,000 or more cars)?
55. How will the applicant mitigate power generators?
56. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
57. Is the site located within 3,000 feet of a toxic or solid waste landfill site?
58. Will the project influence or be unduly influenced by building deterioration?
59. How will the applicant mitigate heavily traveled highways, adjacent and onsite road systems?
60. Are there proposed air pollution generators associated with the proposed project?
61. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
62. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
63. Will the project influence or be unduly influenced by obsolete public facilities?
64. What cost mitigations is the applicant proposing to offset impacted and increased law enforcement personnel needs of agencies serving the proposed project?
65. How will the applicant mitigate incinerators?
66. What mitigations are proposed for water supplies of the proposed project that will not affect or will ameliorate water supplies of adjacent residential neighborhoods businesses, and other land uses currently receiving adequate water?
67. Do public school buses travel the road systems associated with the project site, and if so, how will traffic mitigations proposed by the applicant ensure safe and timely schedules for public school transportation needs?

68. Are there visual indications of filled ground? What assurances has the applicant developed to ensure soil stability for construction footprint and impervious surfaces?
69. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
70. Is the project within 2 and 1/2 miles from the end of a runway at a military airstrip?
71. Are there usual and customary recreational areas in the vicinity of the project site that are currently utilized by the adjacent community, and if so, how will the users of these recreation areas be affected by the project?
72. Will the project be affected by wind/sandstorm concerns?
73. Has the applicant studied the current housing stock and occupancy rates of adjacent communities?
74. Will the project be affected by seismic faults, or fractures?
75. What procedures or guidelines will be developed that allows community members or adjacent property owners to formally complain about inordinate or unanticipated noise?
76. What mitigations will ensure that onsite and offsite light and glare will comport with adjacent local government light, glare and signage requirements?
77. Please describe whether or how the applicant proposes to hire a local workforce, and how this potential transition of workers from current employment to future employment with the applicant might impact the local workforce?
78. Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?
79. Will the project affect or be affected by dangerous intersections?
80. Has a traffic study calculated existing road maintenance requires with anticipated road maintenance or road expansion needs to accommodate the project? What are project costs associated with this subject?
81. What law enforcement and public safety plans have been developed for the proposed project that will be commensurate with area law enforcement and public safety needs projected over a ten year period?
82. Will the project influence or be unduly influenced by inadequate off-street parking?
83. Will the proposed project affect a sole water source or other aquifer?
84. Does the project site or neighborhood suffer from disproportionately adverse environmental effects on minority and low-income populations relative to the community-at-large?
85. How will the project impact existing public transportation facilities of the community?
86. Will the proposed project increase a need for onsite or offsite daycare facilities for children, and how will the applicant accommodate such need, inclusive of safety of children to and from day care facilities?
87. Does the proposed project comply with public all safety requirements for fire safety, in accordance with state and federal law?
88. Have structural borings or dynamic soil analysis been requested in association with geological studies?
89. How will the project impact existing hotels, motels, B&Bs RV facilities and other overnight tourism lodging facilities?
90. Have soil reports or studies or borings been made for the project site or the area? If so, what are the findings of soil studies accomplished?
91. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
92. Please respond to following issue: The DEIS fails to take any account of one of the most significant impacts: the introduction and prominence of casino gambling on central-southeastern Sullivan. There is no assessment of the impact on the social fabric. This is absurd since arguably no commercial activity will have as significant an impact on community character as casino gambling, particularly five casinos. No mitigation is even arguably complete unless the social support for gambling impacts on the community is fully funded.
93. Are there established biking and pedestrian pathways at or near the vicinity of the project site, and if so, what mitigations does the applicant propose to ensure the safety and non-interference of use of these public pathways?
94. Is the project located within a floodplain designated on a current FEMA flood map (24 CFR Part 55)?
95. Were underground storage tanks ever located on the site? If so, provide documentation that all underground storage tanks have been identified, located and appropriately removed by qualified professionals, using current techniques in compliance with 40 CFR Part 280.
96. Is the project compatible with surround areas in terms of height, bulk, and mass?
97. Please identify by assessor parcel number and physical street address or location, each and all sites considered by the applicant, prior to selecting the subject site as the preferred site.
98. Will the project influence or be unduly influenced by incompatible land uses?
99. Has a noise contours map been developed for the proposed project and does it show Day-night average sound level (abbreviated as DNL)?
100. How will activity at the proposed site impact resources of local, county and state law enforcement resources, over a projected ten-year period?
101. Is the property listed on or eligible for listing on the National Register of Historic Places?

102. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
103. What mitigations (i.e. traffic signals, traffic security personnel, shuttle services) are proposed to ameliorate significant traffic increase and activity associated with the proposed project? What is this cost and how will it be accommodated without affecting costs of adjacent local governments?
104. For each alternative site considered by the applicant, please describe the level of analysis conducted, and explain why the specific site was rejected, in preference for the proposed site of the applicant.
105. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of hard (i.e., robbery, vandalism, assault) and soft (white-collar larceny, embezzlement, fraud) crime traditionally associated with the gambling industry entrenching into a community previously unaffected by gambling?
106. Has a traffic study been developed for the proposed project that is specific to this site and this project, and not just generic to the proposed industry?
107. Will private transportation systems be required and/or implemented in association with the project?
108. Will the project influence or be unduly influenced by postponed maintenance?
109. What mitigations are proposed to accommodate traffic generated by the proposed project with existing traffic counts and flows at and adjacent to the project site?
110. Are there unprotected water bodies on site?
111. Please identify an anticipated customer and weekly/daily/hourly traffic count associated with each commercial or ancillary use planned in the near-term and long-term use of the project site.
112. What is the projected weekly, daily and hourly traffic count for the site, and how does this translate to an annual traffic increase that impacts adjacent properties and neighborhoods?
113. Are there waste materials or containers on site?
114. Are there other hazardous terrain features?
115. Is the project compatible with surround areas in terms of building type (low/high-rise)?
116. Is there any indication of currently distressed vegetation?
117. Has the State Historic Preservation Office (SHPO) been notified of the project and requested to provide comments?
118. How will the applicant assure the local government and surrounding community that costs associated with increased water supply needs of the project will be fully accommodated by the applicant, and not a burden imposed upon local governments, local water districts or providers, or local property owners?
119. Will the project affect or be affected by nuisance odors? What mitigations are proposed?
120. What is the proximity of public schools to the project site?
121. Is there evidence of slope erosion or unstable slope conditions on or near the site?
122. What are the previous uses of this site and what residual impacts affect the project or are affected by the project?
123. How will the applicant contribute to a stable and affordable housing stock supply consistent with the applicant's proposed workforce housing needs?
124. Please respond to following issue: The DEIS fails to account for any of the environmental or social impacts of five casinos. The people deserve and the law demands a full, competent assessment of cumulative impact given Governor Pataki's plan to imposing such a burden on (indeed sacrifice) Sullivan County to mitigate state budget problems and avoid the land claim litigation.
125. Will the project be impacted by poisonous plants, insects or animals onsite?
126. Are there ponds, marshes, bogs, swamps or other wetlands on or near the site?
127. Does the applicant propose to handle or sell explosives (fireworks) or propose to store fire-prone materials such as liquid propane, gasoline, or other storage tanks above or below ground?
128. Has a traffic study accommodated existing traffic counts experienced at the project site, and then projected appropriate increased traffic counts based upon days of the week, hours of the day or night, and special events?

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

MAR 17 2005

Mr. Stephen J. Bachop
PO Box 56
Obernburg, NY 12767-0056

Dear Mr. Bachop:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You provided a form letter with a place to add your name and address, listing 128 questions about the project. We are not answering each question by number since most are clearly addressed in the DEIS. Please read the DEIS where you will find your questions answered. We are enclosing a copy of the DEIS CD ROM for your convenience. The Adobe Acrobat version can be searched for key words to assist you in your quest for more knowledge about the project. If you still find unanswered questions, please consider that such questions may not be related to the project's potential impact. Each Federal agency is required by the National Environmental Policy Act to establish its own standards and requirements to fulfill the law. This DEIS meets the standards established by the Bureau of Indian Affairs and analyzes the relevant potential impacts required by the Bureau.

Your questions appear to be centered around a few primary areas so we will attempt to help you understand the controls and mitigations that are designed to minimize impacts in these areas.

The project site was subjected to an Environmental Site Assessment (ESA) according to standards established by the American Society of Testing Materials (ASTM). There were numerous environmental concerns resulting from previous uses of the property where we required correction. The automobile salvage yard and mining operation have since been remediated to standards established by the State of New York and verified by a Federal environmental professional. As trust property, the site would be subject to all environmental regulations established by the Environmental Protection Agency (EPA). Potential operational environmental impacts are therefore subject to EPA control.

Since the potential impacts are projections into the future, where there is no available data, our projections may be limited, but we can still have controls built into the process. As an example, the potential impacts of five casinos are not known at this time but controls are built into the process to provide mitigation for such unknown impacts. The Bureau of Indian Affairs has only received applications from three tribes, so projecting impact beyond the known data would be pure speculation. We must consider potential impacts, but we also must consider whether the

project provides the means of mitigating potential impacts. By building controls into the process, even such unknowns can still be mitigated. Off-reservation casinos, require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments cover the local issues that you are concerned about, such as crime and other social issues. Each tribe also has to make a compact with the state where the casino is located. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Robert K Chap

ACTING Director, Eastern Region

RECEIVED
MAR 25 2005
By

PO Box 56
Obernburg, NY 12767-0056

March 21, 2005

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

If you do not respond to each of the issues enclosed, you may be in violation of the law. Respond thoroughly, thoughtfully, legally and by issue number.

Very Truly Yours,

Stephen J. Bachop

enc.

1. Are there proposed air pollution generators associated with the proposed project?
2. Are there usual and customary children's play areas within the vicinity of the project site?
3. Please respond to following issue: The DEIS fails to take any account of one of the most significant impacts: the introduction and prominence of casino gambling on central-southeastern Sullivan. There is no assessment of the impact on the social fabric. This is absurd since arguably no commercial activity will have as significant an impact on community character as casino gambling, particularly five casinos. No mitigation is even arguably complete unless the social support for gambling impacts on the community is fully funded.
4. How will the project impact existing hotels, motels, B&Bs RV facilities and other overnight tourism lodging facilities?
5. What percentage of the project site is proposed for impervious surface, and how does this surface impact existing elements such as a sole water source or other aquifer?
6. Please respond to following issue: Governor Pataki himself, the chief proponent of the plan to put five casinos in the Sullivan-Route 17 corridor, has recognized the need for a cumulative impact assessment. In officially commenting on the Stockbridge-Munsee casino the Governor has specifically advised the BIA to conduct such an assessment before approving any of the casinos.
7. Will the project be impacted by poisonous plants, insects or animals onsite?
8. Has a traffic study been developed for the proposed project that is specific to this site and this project, and not just generic to the proposed industry?
9. Are there established biking and pedestrian pathways at or near the vicinity of the project site, and if so, what mitigations does the applicant propose to ensure the safety and non-interference of use of these public pathways?
10. Is the project within 2 and 1/2 miles from the end of a runway at a military airstrip?
11. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
12. How will the applicant ensure that increased capacity needs of public transportation will be accommodated at the sole expense of the applicant and not the adjacent local governments?
13. What mitigations are proposed for water supplies of the proposed project that will not affect or will ameliorate water supplies of adjacent residential neighborhoods businesses, and other land uses currently receiving adequate water?
14. Is there indication of cross-lot runoff, swales, drainage flows on the property?
15. Do public school buses travel the road systems associated with the project site, and if so, how will traffic mitigations proposed by the applicant ensure safe and timely schedules for public school transportation needs?
16. Will private transportation systems be required and/or implemented in association with the project?
17. How will the applicant mitigate incinerators?
18. Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the vicinity of the project site?
19. Are other natural resources visible on site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project?
20. Are there any unresolved hazardous materials issues at the proposed site that could the state, county or a municipality to be determined to be potential responsible party?
21. If the applicant proposed to construct hotel or motel facilities at or adjacent to the proposed project, please calculate the estimated impact of business to existing tourist facilities, and the projected hotel occupancy tax loss to adjacent local governments, over the next ten years.
22. Does the property's area of potential effects include an historic district or property?
23. What mitigations will ensure that onsite and offsite light and glare will comport with adjacent local government light, glare and signage requirements?
24. Please respond to following issue: The DEIS fails to account for any of the environmental or social impacts of five casinos. The people deserve and the law demands a full, competent assessment of cumulative impact given Governor Pataki's plan to imposing such a burden on (indeed sacrifice) Sullivan County to mitigate state budget problems and avoid the land claim litigation.
25. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
26. Is there evidence of slope erosion or unstable slope conditions on or near the site?
27. How will any proposed private transportation systems impact and/or coordinate with public transportation systems currently in operation?
28. Are there pools of liquid or soil staining, chemical spills, abandoned machinery, cars, refrigerators, etc.?
29. Is there any indication of currently distressed vegetation?
30. Please respond to following issue: There is no analysis of induced growth, contrary to federal requirements, the public interest and common sense. It is not possible to rationally assess the impacts of the casinos without at least a general review of the buildout which will accompany it. Simply relying on local zoning is neither analysis nor mitigation of these growth-sprawl issues.
31. Will the project influence or be unduly influenced by incompatible land uses?

32. Has the applicant developed a public safety evacuation and rescue plan for customers, and does the plan accommodate projected customers based upon high or low attendance that is associated with hours of operations, weekdays, holidays, and special events?
33. Will the project influence or be unduly influenced by postponed maintenance?
34. Is the project compatible with surround areas in terms of building type (low/high-rise)?
35. What is the total anticipated impervious surface coverage estimated for the proposed project?
36. Will the proposed project increase a need for onsite or offsite daycare facilities for children, and how will the applicant accommodate such need, inclusive of safety of children to and from day care facilities?
37. Are there ponds, marshes, bogs, swamps or other wetlands on or near the site?
38. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
39. How will the applicant mitigate heavily traveled highways, adjacent and onsite road systems?
40. Please respond to following issue: Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed Indian territory, and the placement of casinos is foreign and offensive to the community. There is no basis for this wholesale intrusion into the community mores and ethics.
41. Is the project located within a coastal barrier designated on a current FEMA flood map or Department of Interior coastal barrier resources map?
42. Has a traffic study accommodated existing traffic counts experienced at the project site, and then projected appropriate increased traffic counts based upon days of the week, hours of the day or night, and special events?
43. Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?
44. How will a project workforce impact local community housing needs, projected over the next ten years?
45. Will the proposed project affect a sole water source or other aquifer?
46. How will the applicant mitigate power generators?
47. Is there paved access to the project site?
48. Will the project be affected by seismic faults, or fractures?
49. Will the project influence or be unduly influenced by obsolete public facilities?
50. What additional sanitary sewer and wastewater disposal systems are required and how will expansions of such infrastructure impact existing, connecting infrastructure in terms of capacity and annual cost?
51. Is the project compatible with surround areas in terms of building density?
52. Will the project influence or be unduly influenced by building deterioration?
53. Please respond to following issue: Overall, the plan to site five casinos in the Route 17 corridor is an affront and danger to the existing communities. It is ironic that the remedy for their supposed problem - economic stagnation - is a wholly disproportionate influx of nuisances including casino gambling and induced growth, pollution traffic and social ills.
54. How will current sanitary sewers and waste water disposal systems be impacted by the proposed project, and at what cost?
55. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
56. What mitigations are proposed to accommodate traffic generated by the proposed project with existing traffic counts and flows at and adjacent to the project site?
57. Does the applicant propose to handle or sell explosives (fireworks) or propose to store fire-prone materials such as liquid propane, gasoline, or other storage tanks above or below ground?
58. What mitigations (i.e. traffic signals, traffic security personnel, shuttle services) are proposed to ameliorate significant traffic increase and activity associated with the proposed project? What is this cost and how will it be accommodated without affecting costs of adjacent local governments?
59. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
60. Does the project comply with 24 CFR 51, Subpart B that requires a Noise Assessment for proposed new construction?
61. How will activity at the proposed site impact resources of local, county and state law enforcement resources, over a projected ten-year period?
62. Is the project compatible with surround areas in terms of land use?
63. What is the projected weekly, daily and hourly traffic count for the site, and how does this translate to an annual traffic increase that impacts adjacent properties and neighborhoods?
64. What law enforcement and public safety plans have been developed for the proposed project that will be commensurate with area law enforcement and public safety needs projected over a ten year period?
65. Will the project be affected by wind/sandstorm concerns?

66. How will the applicant assure the local government and surrounding community that costs associated with increased water supply needs of the project will be fully accommodated by the applicant, and not a burden imposed upon local governments, local water districts or providers, or local property owners?
67. Will the project affect or be affected by dangerous intersections?
68. How will a project workforce impact local housing over-crowding and code enforcement conditions that might impact adjacent communities, projected over the next ten years?
69. How will the applicant mitigate large parking facilities (1,000 or more cars)?
70. What mitigations in terms of personnel, monitoring systems, training and counseling programs is the applicant proposing to minimize the impact of anticipated crime associated with the gambling industry?
71. Does the project site or neighborhood suffer from disproportionately adverse environmental effects on minority and low-income populations relative to the community-at-large?
72. Is the site currently served by an adequate and acceptable water supply?
73. Are there usual and customary recreational areas in the vicinity of the project site that are currently utilized by the adjacent community, and if so, how will the users of these recreation areas be affected by the project?
74. Will the project affect or be affected by nuisance odors? What mitigations are proposed?
75. What is the proximity of public schools to the project site?
76. How will the project impact existing public transportation facilities of the community?
77. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of hard (i.e., robbery, vandalism, assault) and soft (white-collar larceny, embezzlement, fraud) crime traditionally associated with the gambling industry entrenching into a community previously unaffected by gambling?
78. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
79. Will the project influence or be unduly influenced by transition of land uses?
80. Is the proposed building footprint located in a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?
81. Please project estimates of revenue associated with each gambling, commercial or retail site and equate that to an equivalent sales tax loss of disposable income to adjacent local communities.
82. Does the applicant anticipate hiring a workforce from outside of the immediate community? If so, from what sources will the applicant recruit its workforce?
83. What are the previous uses of this site and what residual impacts affect the project or are affected by the project?
84. Are there unusual conditions on the site?
85. Is the property located within or directly adjacent to an historic district?
86. Have structural borings or dynamic soil analysis been requested in association with geological studies?
87. Please identify an anticipated customer and weekly/daily/hourly traffic count associated with each commercial or ancillary use planned in the near-term and long-term use of the project site.
88. Is the site located within 3,000 feet of a toxic or solid waste landfill site?
89. Have soil reports or studies or borings been made for the project site or the area? If so, what are the findings of soil studies accomplished?
90. Does the proposed project comply with public all safety requirements for fire safety, in accordance with state and federal law?
91. Does the project comply with Executive Order (E.O.) 11990, Protection of Wetlands, which discourages federal funding of new construction or filling in wetlands and compliance is required with the wetlands decision-making process (§ 55.20 of 24 CFR Part 55)?
92. Are there active rills and gullies on the project site?
93. Is the project located in a predominantly minority or low-income neighborhood?
94. What procedures are proposed for adjacent neighbors who wish to legitimately complain of excessive light or glare?
95. Does the project proposal include a full inventory and assessment of all hazardous materials associated with the project?
96. Will the project influence or be unduly influenced by inadequate off-street parking?
97. What procedures or guidelines will be developed that allows community members or adjacent property owners to formally complain about inordinate or unanticipated noise?
98. Has a traffic study calculated existing road maintenance requires with anticipated road maintenance or road expansion needs to accommodate the project? What are project costs associated with this subject?
99. Are there other hazardous terrain features?
100. Are there current sanitary sewers and waste water disposal systems serving the site?
101. Are there visual indications of filled ground? What assurances has the applicant developed to ensure soil stability for construction footprint and impervious surfaces?
102. Is the project located within a floodplain designated on a current FEMA flood map (24 CFR Part 55)?

103. Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1,000 feet), or railroads (within 3,000 feet)?
104. Please describe whether or how the applicant proposes to hire a local workforce, and how this potential transition of workers from current employment to future employment with the applicant might impact the local workforce?
105. Has a noise contours map been developed for the proposed project and does it show Day-night average sound level (abbreviated as DNL)?
106. Will the project affect or be affected by hazardous streets?
107. For each alternative site considered by the applicant, please describe the level of analysis conducted, and explain why the specific site was rejected, in preference for the proposed site of the applicant.
108. Please identify by assessor parcel number and physical street address or location, each and all sites considered by the applicant, prior to selecting the subject site as the preferred site.
109. Please respond to following issue: The pollution from such added traffic will damage air quality in the area, and exacerbate unhealthy conditions. Sullivan County residents already suffer from a disproportionate and growing number of respiratory problems. There is no justification for subjecting such individuals to a relatively sudden and serious deterioration in air quality and resulting threat to their health.
110. Has the applicant studied the current housing stock and occupancy rates of adjacent communities?
111. Are there drainage ways streams, rivers, or coastlines on or near the project site?
112. Are there existing or abandoned transformers, fill/vent pipes, pipelines, drainage structures?
113. Is the property listed on or eligible for listing on the National Register of Historic Places?
114. Has the State Historic Preservation Office (SHPO) been notified of the project and requested to provide comments?
115. How will the applicant assess project site light and glare to adjacent properties?
116. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
117. Are there waste materials or containers on site?
118. Were underground storage tanks ever located on the site? If so, provide documentation that all underground storage tanks have been identified, located and appropriately removed by qualified professionals, using current techniques in compliance with 40 CFR Part 280.
119. Is the project compatible with surround areas in terms of height, bulk, and mass?
120. Are there unprotected water bodies on site?
121. Please respond to following issue: It is unfair and wrong to at once transform the traffic in the region from generally clear with some limitations during rush hour, to generally busy and congested and overloaded during peak hours. Mobility would be significantly infringed, and those who disproportionately rely on automobiles, such as businesses, would be badly damaged.
122. What cost mitigations is the applicant proposing to offset impacted and increased law enforcement personnel needs of agencies serving the proposed project?
123. For each alternative site considered by the applicant, please identify the process and professionals that made determinations that have ultimately assessed the proposed site as the environmentally preferred site.
124. Is the project within 3,000 feet from the end of a runway at a civil airport?
125. Describe the site elevations and any accommodations required for significant slopes.
126. How will the applicant contribute to a stable and affordable housing stock supply consistent with the applicant's proposed workforce housing needs?
127. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of an Indian gambling casino upon the foreseeable disposable income loss to adjacent commercial, retail, restaurant, recreational and lodging facilities, over the next ten years?
128. If the site is not currently listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list, should it be? If not, why not?

RECEIVED
MAR 25 2005
By

PO Box 56
Obernburg, NY 12767-0056

March 21, 2005

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

Your failure to respond to any of the issues I raised before prompts this current list of issues. You are required by law to answer each of these issues.

Respond by issue number.

Very Truly Yours,

Stephen J. Bachop

enc.

1. How will current sanitary sewers and waste water disposal systems be impacted by the proposed project, and at what cost?
2. Will the project affect or be affected by dangerous intersections?
3. Is the site located within 3,000 feet of a toxic or solid waste landfill site?
4. Are other natural resources visible on site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project?
5. What is the proximity of public schools to the project site?
6. Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1,000 feet), or railroads (within 3,000 feet)?
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9. Is the project located in a predominantly minority or low-income neighborhood?
10. What procedures are proposed for adjacent neighbors who wish to legitimately complain of excessive light or glare?
11. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
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17. How will the applicant mitigate large parking facilities (1,000 or more cars)?
18. Are there drainage ways streams, rivers, or coastlines on or near the project site?
19. For each alternative site considered by the applicant, please identify the process and professionals that made determinations that have ultimately assessed the proposed site as the environmentally preferred site.
20. How will a project workforce impact local housing over-crowding and code enforcement conditions that might impact adjacent communities, projected over the next ten years?
21. Please project estimates of revenue associated with each gambling, commercial or retail site and equate that to an equivalent sales tax loss of disposable income to adjacent local communities.
22. Are there unusual conditions on the site?
23. Is the project compatible with surround areas in terms of building density?
24. Please respond to following issue: There is no analysis of induced growth, contrary to federal requirements, the public interest and common sense. It is not possible to rationally assess the impacts of the casinos without at least a general review of the buildout which will accompany it. Simply relying on local zoning is neither analysis nor mitigation of these growth-sprawl issues.
25. Are there ponds, marshes, bogs, swamps or other wetlands on or near the site?
26. Does the project proposal include a full inventory and assessment of all hazardous materials associated with the project?
27. Are there active rills and gullies on the project site?
28. What are the previous uses of this site and what residual impacts affect the project or are affected by the project?
29. What mitigations in terms of personnel, monitoring systems, training and counseling programs is the applicant proposing to minimize the impact of anticipated crime associated with the gambling industry?
30. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
31. Are there any unresolved hazardous materials issues at the proposed site that could the state, county or a municipality to be determined to be potential responsible party?
32. Will the project influence or be unduly influenced by obsolete public facilities?
33. Are there proposed air pollution generators associated with the proposed project?
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36. Are there visual indications of filled ground? What assurances has the applicant developed to ensure soil stability for construction footprint and impervious surfaces?

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43. How will the applicant assess project site light and glare to adjacent properties?
44. What is the projected weekly, daily and hourly traffic count for the site, and how does this translate to an annual traffic increase that impacts adjacent properties and neighborhoods?
45. Has the applicant studied the current housing stock and occupancy rates of adjacent communities?
46. Is the site currently served by an adequate and acceptable water supply?
47. What mitigations are proposed for water supplies of the proposed project that will not affect or will ameliorate water supplies of adjacent residential neighborhoods businesses, and other land uses currently receiving adequate water?
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50. Are there other hazardous terrain features?
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53. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
54. How will the project impact existing hotels, motels, B&Bs RV facilities and other overnight tourism lodging facilities?
55. Does the project comply with 24 CFR 51, Subpart B that requires a Noise Assessment for proposed new construction?
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57. Please respond to following issue: Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed Indian territory, and the placement of casinos is foreign and offensive to the community. There is no basis for this wholesale intrusion into the community mores and ethics.
58. Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the vicinity of the project site?
59. Has a traffic study calculated existing road maintenance requires with anticipated road maintenance or road expansion needs to accommodate the project? What are project costs associated with this subject?
60. What mitigations (i.e. traffic signals, traffic security personnel, shuttle services) are proposed to ameliorate significant traffic increase and activity associated with the proposed project? What is this cost and how will it be accommodated without affecting costs of adjacent local governments?
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62. Are there usual and customary children's play areas within the vicinity of the project site?
63. How will the applicant ensure that increased capacity needs of public transportation will be accommodated at the sole expense of the applicant and not the adjacent local governments?
64. How will a project workforce impact local community housing needs, projected over the next ten years?
65. Have structural borings or dynamic soil analysis been requested in association with geological studies?
66. Is there any indication of currently distressed vegetation?
67. Does the property's area of potential effects include an historic district or property?
68. Is the proposed building footprint located in a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?
69. Is the property listed on or eligible for listing on the National Register of Historic Places?
70. Will the proposed project affect a sole water source or other aquifer?
71. Is the property located within or directly adjacent to an historic district?
72. Will the project influence or be unduly influenced by building deterioration?
73. Is the project located within a coastal barrier designated on a current FEMA flood map or Department of Interior coastal barrier resources map?
74. What law enforcement and public safety plans have been developed for the proposed project that will be commensurate with area law enforcement and public safety needs projected over a ten year period?

75. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
76. Have soil reports or studies or borings been made for the project site or the area? If so, what are the findings of soil studies accomplished?
77. Has a noise contours map been developed for the proposed project and does it show Day-night average sound level (abbreviated as DNL)?
78. Please describe whether or how the applicant proposes to hire a local workforce, and how this potential transition of workers from current employment to future employment with the applicant might impact the local workforce?
79. How will the applicant mitigate heavily traveled highways, adjacent and onsite road systems?
80. Will the project influence or be unduly influenced by inadequate off-street parking?
81. Will private transportation systems be required and/or implemented in association with the project?
82. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
83. Are there established biking and pedestrian pathways at or near the vicinity of the project site, and if so, what mitigations does the applicant propose to ensure the safety and non-interference of use of these public pathways?
84. Will the project affect or be affected by hazardous streets?
85. Is there paved access to the project site?
86. Do public school buses travel the road systems associated with the project site, and if so, how will traffic mitigations proposed by the applicant ensure safe and timely schedules for public school transportation needs?
87. Please identify by assessor parcel number and physical street address or location, each and all sites considered by the applicant, prior to selecting the subject site as the preferred site.
88. Will the project be affected by seismic faults, or fractures?
89. Does the project comply with Executive Order (E.O.) 11990, Protection of Wetlands, which discourages federal funding of new construction or filling in wetlands and compliance is required with the wetlands decision-making process (§ 55.20 of 24 CFR Part 55)?
90. Are there waste materials or containers on site?
91. Does the applicant propose to handle or sell explosives (fireworks) or propose to store fire-prone materials such as liquid propane, gasoline, or other storage tanks above or below ground?
92. Does the project site or neighborhood suffer from disproportionately adverse environmental effects on minority and low-income populations relative to the community-at-large?
93. Will the project influence or be unduly influenced by incompatible land uses?
94. Are there usual and customary recreational areas in the vicinity of the project site that are currently utilized by the adjacent community, and if so, how will the users of these recreation areas be affected by the project?
95. Are there current sanitary sewers and waste water disposal systems serving the site?
96. Has the State Historic Preservation Office (SHPO) been notified of the project and requested to provide comments?
97. For each alternative site considered by the applicant, please describe the level of analysis conducted, and explain why the specific site was rejected, in preference for the proposed site of the applicant.
98. How will activity at the proposed site impact resources of local, county and state law enforcement resources, over a projected ten-year period?
99. If the applicant proposed to construct hotel or motel facilities at or adjacent to the proposed project, please calculate the estimated impact of business to existing tourist facilities, and the projected hotel occupancy tax loss to adjacent local governments, over the next ten years.
100. Please respond to following issue: It is unfair and wrong to at once transform the traffic in the region from generally clear with some limitations during rush hour, to generally busy and congested and overloaded during peak hours. Mobility would be significantly infringed, and those who disproportionately rely on automobiles, such as businesses, would be badly damaged.
101. Please respond to following issue: The DEIS fails to account for any of the environmental or social impacts of five casinos. The people deserve and the law demands a full, competent assessment of cumulative impact given Governor Pataki's plan to imposing such a burden on (indeed sacrifice) Sullivan County to mitigate state budget problems and avoid the land claim litigation.
102. Has the applicant developed a public safety evacuation and rescue plan for customers, and does the plan accommodate projected customers based upon high or low attendance that is associated with hours of operations, weekdays, holidays, and special events?
103. If the site is not currently listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list, should it be? If not, why not?
104. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of hard (i.e., robbery, vandalism, assault) and soft (white-collar larceny, embezzlement, fraud) crime traditionally associated with the gambling industry entrenching into a community previously unaffected by gambling?

105. How will the project impact existing public transportation facilities of the community?
106. Has a traffic study accommodated existing traffic counts experienced at the project site, and then projected appropriate increased traffic counts based upon days of the week, hours of the day or night, and special events?
107. Is the project located within a floodplain designated on a current FEMA flood map (24 CFR Part 55)?
108. Does the applicant anticipate hiring a workforce from outside of the immediate community? If so, from what sources will the applicant recruit its workforce?
109. Describe the site elevations and any accommodations required for significant slopes.
110. Is the project within 3,000 feet from the end of a runway at a civil airport?
111. Please respond to following issue: The DEIS fails to take any account of one of the most significant impacts: the introduction and prominence of casino gambling on central-southeastern Sullivan. There is no assessment of the impact on the social fabric. This is absurd since arguably no commercial activity will have as significant an impact on community character as casino gambling, particularly five casinos. No mitigation is even arguably complete unless the social support for gambling impacts on the community is fully funded.
112. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
113. Will the project be affected by wind/sandstorm concerns?
114. Will the project affect or be affected by nuisance odors? What mitigations are proposed?
115. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of an Indian gambling casino upon the foreseeable disposable income loss to adjacent commercial, retail, restaurant, recreational and lodging facilities, over the next ten years?
116. Are there unprotected water bodies on site?
117. What mitigations are proposed to accommodate traffic generated by the proposed project with existing traffic counts and flows at and adjacent to the project site?
118. Please respond to following issue: Overall, the plan to site five casinos in the Route 17 corridor is an affront and danger to the existing communities. It is ironic that the remedy for their supposed problem - economic stagnation - is a wholly disproportionate influx of nuisances including casino gambling and induced growth, pollution traffic and social ills.
119. What percentage of the project site is proposed for impervious surface, and how does this surface impact existing elements such as a sole water source or other aquifer?
120. Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?
121. Please respond to following issue: The pollution from such added traffic will damage air quality in the area, and exacerbate unhealthy conditions. Sullivan County residents already suffer from a disproportionate and growing number of respiratory problems. There is no justification for subjecting such individuals to a relatively sudden and serious deterioration in air quality and resulting threat to their health.
122. How will any proposed private transportation systems impact and/or coordinate with public transportation systems currently in operation?
123. How will the applicant mitigate power generators?
124. Does the proposed project comply with public all safety requirements for fire safety, in accordance with state and federal law?
125. How will the applicant mitigate incinerators?
126. Will the project influence or be unduly influenced by postponed maintenance?
127. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
128. What procedures or guidelines will be developed that allows community members or adjacent property owners to formally complain about inordinate or unanticipated noise?

RECEIVED
MAR 25 2005
By

PO Box 56
Obernburg, NY 12767-0056

March 21, 2005

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

Your cooperation is expected in answering each of the enclosed issues. **Respond by issue number**.

Very Truly Yours,

Stephen J. Bachop

enc.

1. Will the project influence or be unduly influenced by obsolete public facilities?
2. How will activity at the proposed site impact resources of local, county and state law enforcement resources, over a projected ten-year period?
3. How will current sanitary sewers and waste water disposal systems be impacted by the proposed project, and at what cost?
4. Please respond to following issue: The DEIS fails to take any account of one of the most significant impacts: the introduction and prominence of casino gambling on central-southeastern Sullivan. There is no assessment of the impact on the social fabric. This is absurd since arguably no commercial activity will have as significant an impact on community character as casino gambling, particularly five casinos. No mitigation is even arguably complete unless the social support for gambling impacts on the community is fully funded.
5. Does the applicant propose to handle or sell explosives (fireworks) or propose to store fire-prone materials such as liquid propane, gasoline, or other storage tanks above or below ground?
6. Are there established biking and pedestrian pathways at or near the vicinity of the project site, and if so, what mitigations does the applicant propose to ensure the safety and non-interference of use of these public pathways?
7. Is the project located in a predominantly minority or low-income neighborhood?
8. Will the project affect or be affected by hazardous streets?
9. Are there drainage ways streams, rivers, or coastlines on or near the project site?
10. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
11. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
12. Is the project compatible with surround areas in terms of building density?
13. Please identify by assessor parcel number and physical street address or location, each and all sites considered by the applicant, prior to selecting the subject site as the preferred site.
14. Are there ponds, marshes, bogs, swamps or other wetlands on or near the site?
15. Are there visual indications of filled ground? What assurances has the applicant developed to ensure soil stability for construction footprint and impervious surfaces?
16. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
17. How will the applicant ensure that increased capacity needs of public transportation will be accommodated at the sole expense of the applicant and not the adjacent local governments?
18. How will the applicant mitigate incinerators?
19. Is the site located within 3,000 feet of a toxic or solid waste landfill site?
20. What percentage of the project site is proposed for impervious surface, and how does this surface impact existing elements such as a sole water source or other aquifer?
21. Have soil reports or studies or borings been made for the project site or the area? If so, what are the findings of soil studies accomplished?
22. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
23. Does the project comply with 24 CFR 51, Subpart B that requires a Noise Assessment for proposed new construction?
24. What mitigations in terms of personnel, monitoring systems, training and counseling programs is the applicant proposing to minimize the impact of anticipated crime associated with the gambling industry?
25. For each alternative site considered by the applicant, please identify the process and professionals that made determinations that have ultimately assessed the proposed site as the environmentally preferred site.
26. Please respond to following issue: It is unfair and wrong to at once transform the traffic in the region from generally clear with some limitations during rush hour, to generally busy and congested and overloaded during peak hours. Mobility would be significantly infringed, and those who disproportionately rely on automobiles, such as businesses, would be badly damaged.
27. Will the project be affected by seismic faults, or fractures?
28. Has a traffic study accommodated existing traffic counts experienced at the project site, and then projected appropriate increased traffic counts based upon days of the week, hours of the day or night, and special events?
29. What is the proximity of public schools to the project site?
30. Is the project within 2 and 1/2 miles from the end of a runway at a military airstrip?
31. Does the project proposal include a full inventory and assessment of all hazardous materials associated with the project?
32. Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1,000 feet), or railroads (within 3,000 feet)?

33. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of an Indian gambling casino upon the foreseeable disposable income loss to adjacent commercial, retail, restaurant, recreational and lodging facilities, over the next ten years?
34. Are there usual and customary children's play areas within the vicinity of the project site?
35. Will the proposed project increase a need for onsite or offsite daycare facilities for children, and how will the applicant accommodate such need, inclusive of safety of children to and from day care facilities?
36. Are there usual and customary recreational areas in the vicinity of the project site that are currently utilized by the adjacent community, and if so, how will the users of these recreation areas be affected by the project?
37. Please respond to following issue: The DEIS fails to account for any of the environmental or social impacts of five casinos. The people deserve and the law demands a full, competent assessment of cumulative impact given Governor Pataki's plan to imposing such a burden on (indeed sacrifice) Sullivan County to mitigate state budget problems and avoid the land claim litigation.
38. Please identify an anticipated customer and weekly/daily/hourly traffic count associated with each commercial or ancillary use planned in the near-term and long-term use of the project site.
39. How will the applicant mitigate large parking facilities (1,000 or more cars)?
40. Is there paved access to the project site?
41. Is there evidence of slope erosion or unstable slope conditions on or near the site?
42. Will the proposed project affect a sole water source or other aquifer?
43. Will the project affect or be affected by dangerous intersections?
44. Is there any indication of currently distressed vegetation?
45. Are there any unresolved hazardous materials issues at the proposed site that could the state, county or a municipality to be determined to be potential responsible party?
46. What additional sanitary sewer and wastewater disposal systems are required and how will expansions of such infrastructure impact existing, connecting infrastructure in terms of capacity and annual cost?
47. Are there other hazardous terrain features?
48. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of hard (i.e., robbery, vandalism, assault) and soft (white-collar larceny, embezzlement, fraud) crime traditionally associated with the gambling industry entrenching into a community previously unaffected by gambling?
49. Does the proposed project comply with public all safety requirements for fire safety, in accordance with state and federal law?
50. How will the applicant assure the local government and surrounding community that costs associated with increased water supply needs of the project will be fully accommodated by the applicant, and not a burden imposed upon local governments, local water districts or providers, or local property owners?
51. What is the total anticipated impervious surface coverage estimated for the proposed project?
52. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
53. Are there existing or abandoned transformers, fill/vent pipes, pipelines, drainage structures?
54. Will the project be impacted by poisonous plants, insects or animals onsite?
55. Describe the site elevations and any accommodations required for significant slopes.
56. Has the State Historic Preservation Office (SHPO) been notified of the project and requested to provide comments?
57. What mitigations are proposed for water supplies of the proposed project that will not affect or will ameliorate water supplies of adjacent residential neighborhoods businesses, and other land uses currently receiving adequate water?
58. Will the project influence or be unduly influenced by postponed maintenance?
59. Is the proposed building footprint located in a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?
60. How will any proposed private transportation systems impact and/or coordinate with public transportation systems currently in operation?
61. What mitigations are proposed to accommodate traffic generated by the proposed project with existing traffic counts and flows at and adjacent to the project site?
62. How will a project workforce impact local housing over-crowding and code enforcement conditions that might impact adjacent communities, projected over the next ten years?
63. Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the vicinity of the project site?
64. Are there active rills and gullies on the project site?
65. What mitigations will ensure that onsite and offsite light and glare will comport with adjacent local government light, glare and signage requirements?
66. Is the project located within a coastal barrier designated on a current FEMA flood map or Department of Interior coastal barrier resources map?

67. Has the applicant studied the current housing stock and occupancy rates of adjacent communities?
68. Is the site currently served by an adequate and acceptable water supply?
69. Are there unusual conditions on the site?
70. Does the project comply with Executive Order (E.O.) 11990, Protection of Wetlands, which discourages federal funding of new construction or filling in wetlands and compliance is required with the wetlands decision-making process (§ 55.20 of 24 CFR Part 55)?
71. Are there pools of liquid or soil staining, chemical spills, abandoned machinery, cars, refrigerators, etc.?
72. Please respond to following issue: Overall, the plan to site five casinos in the Route 17 corridor is an affront and danger to the existing communities. It is ironic that the remedy for their supposed problem - economic stagnation - is a wholly disproportionate influx of nuisances including casino gambling and induced growth, pollution traffic and social ills.
73. Please project estimates of revenue associated with each gambling, commercial or retail site and equate that to an equivalent sales tax loss of disposable income to adjacent local communities.
74. What mitigations (i.e. traffic signals, traffic security personnel, shuttle services) are proposed to ameliorate significant traffic increase and activity associated with the proposed project? What is this cost and how will it be accommodated without affecting costs of adjacent local governments?
75. Will the project be affected by wind/sandstorm concerns?
76. If the applicant proposed to construct hotel or motel facilities at or adjacent to the proposed project, please calculate the estimated impact of business to existing tourist facilities, and the projected hotel occupancy tax loss to adjacent local governments, over the next ten years.
77. Has a noise contours map been developed for the proposed project and does it show Day-night average sound level (abbreviated as DNL)?
78. Is the property listed on or eligible for listing on the National Register of Historic Places?
79. Will the project influence or be unduly influenced by transition of land uses?
80. Please respond to following issue: Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed Indian territory, and the placement of casinos is foreign and offensive to the community. There is no basis for this wholesale intrusion into the community mores and ethics.
81. What is the projected weekly, daily and hourly traffic count for the site, and how does this translate to an annual traffic increase that impacts adjacent properties and neighborhoods?
82. Will the project influence or be unduly influenced by building deterioration?
83. Do public school buses travel the road systems associated with the project site, and if so, how will traffic mitigations proposed by the applicant ensure safe and timely schedules for public school transportation needs?
84. Please respond to following issue: There is no analysis of induced growth, contrary to federal requirements, the public interest and common sense. It is not possible to rationally assess the impacts of the casinos without at least a general review of the buildout which will accompany it. Simply relying on local zoning is neither analysis nor mitigation of these growth-sprawl issues.
85. How will the applicant mitigate power generators?
86. Were underground storage tanks ever located on the site? If so, provide documentation that all underground storage tanks have been identified, located and appropriately removed by qualified professionals, using current techniques in compliance with 40 CFR Part 280.
87. How will the applicant assess project site light and glare to adjacent properties?
88. Does the project site or neighborhood suffer from disproportionately adverse environmental effects on minority and low-income populations relative to the community-at-large?
89. How will the project impact existing hotels, motels, B&Bs RV facilities and other overnight tourism lodging facilities?
90. Is the project within 3,000 feet from the end of a runway at a civil airport?
91. How will the applicant mitigate heavily traveled highways, adjacent and onsite road systems?
92. Is the property located within or directly adjacent to an historic district?
93. What procedures or guidelines will be developed that allows community members or adjacent property owners to formally complain about inordinate or unanticipated noise?
94. Is the project compatible with surround areas in terms of height, bulk, and mass?
95. Please describe whether or how the applicant proposes to hire a local workforce, and how this potential transition of workers from current employment to future employment with the applicant might impact the local workforce?
96. Will the project influence or be unduly influenced by inadequate off-street parking?
97. Is the project compatible with surround areas in terms of land use?
98. If the site is not currently listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list, should it be? If not, why not?
99. Does the applicant anticipate hiring a workforce from outside of the immediate community? If so, from what sources will the applicant recruit its workforce?

100. What procedures are proposed for adjacent neighbors who wish to legitimately complain of excessive light or glare?
101. Please respond to following issue: The pollution from such added traffic will damage air quality in the area, and exacerbate unhealthy conditions. Sullivan County residents already suffer from a disproportionate and growing number of respiratory problems. There is no justification for subjecting such individuals to a relatively sudden and serious deterioration in air quality and resulting threat to their health.
102. How will the project impact existing public transportation facilities of the community?
103. Have structural borings or dynamic soil analysis been requested in association with geological studies?
104. What cost mitigations is the applicant proposing to offset impacted and increased law enforcement personnel needs of agencies serving the proposed project?
105. Is the project compatible with surround areas in terms of building type (low/high-rise)?
106. What are the previous uses of this site and what residual impacts affect the project or are affected by the project?
107. Is there indication of cross-lot runoff, swales, drainage flows on the property?
108. Has a traffic study been developed for the proposed project that is specific to this site and this project, and not just generic to the proposed industry?
109. Does the property's area of potential effects include an historic district or property?
110. Are there waste materials or containers on site?
111. Will the project affect or be affected by nuisance odors? What mitigations are proposed?
112. How will a project workforce impact local community housing needs, projected over the next ten years?
113. Has a traffic study calculated existing road maintenance requires with anticipated road maintenance or road expansion needs to accommodate the project? What are project costs associated with this subject?
114. Has the applicant developed a public safety evacuation and rescue plan for customers, and does the plan accommodate projected customers based upon high or low attendance that is associated with hours of operations, weekdays, holidays, and special events?
115. Are there current sanitary sewers and waste water disposal systems serving the site?
116. For each alternative site considered by the applicant, please describe the level of analysis conducted, and explain why the specific site was rejected, in preference for the proposed site of the applicant.
117. Are there unprotected water bodies on site?
118. Is the project located within a floodplain designated on a current FEMA flood map (24 CFR Part 55)?
119. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
120. Will the project influence or be unduly influenced by incompatible land uses?
121. Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?
122. How will the applicant contribute to a stable and affordable housing stock supply consistent with the applicant's proposed workforce housing needs?
123. Are there proposed air pollution generators associated with the proposed project?
124. What law enforcement and public safety plans have been developed for the proposed project that will be commensurate with area law enforcement and public safety needs projected over a ten year period?
125. Please respond to following issue: Governor Pataki himself, the chief proponent of the plan to put five casinos in the Sullivan-Route 17 corridor, has recognized the need for a cumulative impact assessment. In officially commenting on the Stockbridge-Munsee casino the Governor has specifically advised the BIA to conduct such an assessment before approving any of the casinos.
126. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
127. Are other natural resources visible on site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project?
128. Will private transportation systems be required and/or implemented in association with the project?

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PO Box 56
Obernburg, NY 12767-0056

March 21, 2005

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

Respond by issue number to each of the enclosed issues.

Very Truly Yours,

Stephen J. Bachop

enc.

1. Is there paved access to the project site?
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11. Is there indication of cross-lot runoff, swales, drainage flows on the property?
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27. What mitigations will ensure that onsite and offsite light and glare will comport with adjacent local government light, glare and signage requirements?
28. Is the project located within a coastal barrier designated on a current FEMA flood map or Department of Interior coastal barrier resources map?
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31. Is the project compatible with surround areas in terms of building type (low/high-rise)?
32. Is the project compatible with surround areas in terms of height, bulk, and mass?
33. Is the proposed building footprint located in a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?

34. Have soil reports or studies or borings been made for the project site or the area? If so, what are the findings of soil studies accomplished?
35. Are there unprotected water bodies on site?
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39. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
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41. How will the applicant mitigate heavily traveled highways, adjacent and onsite road systems?
42. Will the project affect or be affected by hazardous streets?
43. Is there evidence of slope erosion or unstable slope conditions on or near the site?
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53. Does the applicant anticipate hiring a workforce from outside of the immediate community? If so, from what sources will the applicant recruit its workforce?
54. Has a noise contours map been developed for the proposed project and does it show Day-night average sound level (abbreviated as DNL)?
55. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
56. Is the site currently served by an adequate and acceptable water supply?
57. Are there existing or abandoned transformers, fill/vent pipes, pipelines, drainage structures?
58. Are there established biking and pedestrian pathways at or near the vicinity of the project site, and if so, what mitigations does the applicant propose to ensure the safety and non-interference of use of these public pathways?
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68. What law enforcement and public safety plans have been developed for the proposed project that will be commensurate with area law enforcement and public safety needs projected over a ten year period?
69. If the site is not currently listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list, should it be? If not, why not?

70. Are there current sanitary sewers and waste water disposal systems serving the site?
71. Is the project located within a floodplain designated on a current FEMA flood map (24 CFR Part 55)?
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73. What cost mitigations is the applicant proposing to offset impacted and increased law enforcement personnel needs of agencies serving the proposed project?
74. Have structural borings or dynamic soil analysis been requested in association with geological studies?
75. Does the project proposal include a full inventory and assessment of all hazardous materials associated with the project?
76. What are the previous uses of this site and what residual impacts affect the project or are affected by the project?
77. Describe the site elevations and any accommodations required for significant slopes.
78. Does the proposed project comply with public all safety requirements for fire safety, in accordance with state and federal law?
79. Are there any unresolved hazardous materials issues at the proposed site that could the state, county or a municipality to be determined to be potential responsible party?
80. Please respond to following issue: The pollution from such added traffic will damage air quality in the area, and exacerbate unhealthy conditions. Sullivan County residents already suffer from a disproportionate and growing number of respiratory problems. There is no justification for subjecting such individuals to a relatively sudden and serious deterioration in air quality and resulting threat to their health.
81. Will the project influence or be unduly influenced by postponed maintenance?
82. What is the proximity of public schools to the project site?
83. Please respond to following issue: It is unfair and wrong to at once transform the traffic in the region from generally clear with some limitations during rush hour, to generally busy and congested and overloaded during peak hours. Mobility would be significantly infringed, and those who disproportionately rely on automobiles, such as businesses, would be badly damaged.
84. Were underground storage tanks ever located on the site? If so, provide documentation that all underground storage tanks have been identified, located and appropriately removed by qualified professionals, using current techniques in compliance with 40 CFR Part 280.
85. Are other natural resources visible on site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project?
86. Please identify by assessor parcel number and physical street address or location, each and all sites considered by the applicant, prior to selecting the subject site as the preferred site.
87. Has the applicant developed a public safety evacuation and rescue plan for customers, and does the plan accommodate projected customers based upon high or low attendance that is associated with hours of operations, weekdays, holidays, and special events?
88. Are there proposed air pollution generators associated with the proposed project?
89. Will the project be affected by wind/sandstorm concerns?
90. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
91. Are there usual and customary children's play areas within the vicinity of the project site?
92. Will the project influence or be unduly influenced by building deterioration?
93. Does the project comply with 24 CFR 51, Subpart B that requires a Noise Assessment for proposed new construction?
94. Does the applicant propose to handle or sell explosives (fireworks) or propose to store fire-prone materials such as liquid propane, gasoline, or other storage tanks above or below ground?
95. What mitigations are proposed to accommodate traffic generated by the proposed project with existing traffic counts and flows at and adjacent to the project site?
96. Are there other hazardous terrain features?
97. Will the proposed project increase a need for onsite or offsite daycare facilities for children, and how will the applicant accommodate such need, inclusive of safety of children to and from day care facilities?
98. What procedures are proposed for adjacent neighbors who wish to legitimately complain of excessive light or glare?
99. Does the property's area of potential effects include an historic district or property?
100. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
101. What is the total anticipated impervious surface coverage estimated for the proposed project?
102. Please project estimates of revenue associated with each gambling, commercial or retail site and equate that to an equivalent sales tax loss of disposable income to adjacent local communities.

103. Please respond to following issue: The DEIS fails to take any account of one of the most significant impacts: the introduction and prominence of casino gambling on central-southeastern Sullivan. There is no assessment of the impact on the social fabric. This is absurd since arguably no commercial activity will have as significant an impact on community character as casino gambling, particularly five casinos. No mitigation is even arguably complete unless the social support for gambling impacts on the community is fully funded.
104. How will the applicant mitigate power generators?
105. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
106. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
107. Are there drainage ways streams, rivers, or coastlines on or near the project site?
108. If the applicant proposed to construct hotel or motel facilities at or adjacent to the proposed project, please calculate the estimated impact of business to existing tourist facilities, and the projected hotel occupancy tax loss to adjacent local governments, over the next ten years.
109. Will the project influence or be unduly influenced by obsolete public facilities?
110. Please identify an anticipated customer and weekly/daily/hourly traffic count associated with each commercial or ancillary use planned in the near-term and long-term use of the project site.
111. How will the applicant mitigate incinerators?
112. Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the vicinity of the project site?
113. Are there pools of liquid or soil staining, chemical spills, abandoned machinery, cars, refrigerators, etc.?
114. What percentage of the project site is proposed for impervious surface, and how does this surface impact existing elements such as a sole water source or other aquifer?
115. Has a traffic study been developed for the proposed project that is specific to this site and this project, and not just generic to the proposed industry?
116. How will the applicant mitigate large parking facilities (1,000 or more cars)?
117. Has the State Historic Preservation Office (SHPO) been notified of the project and requested to provide comments?
118. How will a project workforce impact local community housing needs, projected over the next ten years?
119. How will the applicant contribute to a stable and affordable housing stock supply consistent with the applicant's proposed workforce housing needs?
120. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
121. Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1,000 feet), or railroads (within 3,000 feet)?
122. Is the property listed on or eligible for listing on the National Register of Historic Places?
123. Are there unusual conditions on the site?
124. Is the project compatible with surround areas in terms of building density?
125. Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?
126. What additional sanitary sewer and wastewater disposal systems are required and how will expansions of such infrastructure impact existing, connecting infrastructure in terms of capacity and annual cost?
127. How will activity at the proposed site impact resources of local, county and state law enforcement resources, over a projected ten-year period?
128. How will the applicant assess project site light and glare to adjacent properties?

RECEIVED
MAR 25 2005
By

PO Box 56
Obernburg, NY 12767-0056

March 21, 2005

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214
Attn: Kurt Chandler (615) 467-1677

Re: Draft Environmental Impact Statement
Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, New York

Sir:

Your failure to do your job both in the Kutsher's/Mohawk and now the Stockbridge-Munsee DEIS is obvious. You need to respond to each of the issues enclosed, not simply state that some of the issues raised are on a couple subjects. There are quite a few subjects with over 100 issues raised. Do your job!

Respond by issue number.

Very Truly Yours,

Stephen J. Bachop

enc.

1. Are there ponds, marshes, bogs, swamps or other wetlands on or near the site?
2. Please identify by assessor parcel number and physical street address or location, each and all sites considered by the applicant, prior to selecting the subject site as the preferred site.
3. Will the project affect or be affected by dangerous intersections?
4. Will private transportation systems be required and/or implemented in association with the project?
5. If the site is not currently listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list, should it be? If not, why not?
6. Has the applicant studied the current housing stock and occupancy rates of adjacent communities?
7. Is there indication of cross-lot runoff, swales, drainage flows on the property?
8. Does the project comply with Executive Order (E.O.) 11990, Protection of Wetlands, which discourages federal funding of new construction or filling in wetlands and compliance is required with the wetlands decision-making process (§ 55.20 of 24 CFR Part 55)?
9. Has the applicant developed a public safety evacuation and rescue plan for customers, and does the plan accommodate projected customers based upon high or low attendance that is associated with hours of operations, weekdays, holidays, and special events?
10. How will the applicant mitigate power generators?
11. Does the property's area of potential effects include an historic district or property?
12. Please identify each and every commercial use proposed upon project completion, and projected over the next ten (10) years at the project site.
13. What procedures are proposed for adjacent neighbors who wish to legitimately complain of excessive light or glare?
14. Will the project influence or be unduly influenced by obsolete public facilities?
15. Is the site located within 3,000 feet of a toxic or solid waste landfill site?
16. Are there drainage ways streams, rivers, or coastlines on or near the project site?
17. Is the property listed on or eligible for listing on the National Register of Historic Places?
18. Please project estimates of revenue associated with each gambling, commercial or retail site and equate that to an equivalent sales tax loss of disposable income to adjacent local communities.
19. How will the project impact existing hotels, motels, B&Bs RV facilities and other overnight tourism lodging facilities?
20. Will the project affect or be affected by hazardous streets?
21. Does the project comply with 24 CFR 51, Subpart B that requires a Noise Assessment for proposed new construction?
22. If the applicant proposed to construct hotel or motel facilities at or adjacent to the proposed project, please calculate the estimated impact of business to existing tourist facilities, and the projected hotel occupancy tax loss to adjacent local governments, over the next ten years.
23. Do proposed construction plans accommodate and comply with Uniform Building Code requirements of facilities constructed within Special Flood Hazard Areas?
24. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of hard (i.e., robbery, vandalism, assault) and soft (white-collar larceny, embezzlement, fraud) crime traditionally associated with the gambling industry entrenching into a community previously unaffected by gambling?
25. Does the proposed project comply with public all safety requirements for fire safety, in accordance with state and federal law?
26. Are there active rills and gullies on the project site?
27. What is the projected weekly, daily and hourly traffic count for the site, and how does this translate to an annual traffic increase that impacts adjacent properties and neighborhoods?
28. Is the project within 3,000 feet from the end of a runway at a civil airport?
29. Is the project located within a coastal barrier designated on a current FEMA flood map or Department of Interior coastal barrier resources map?
30. Please respond to following issue: There is no analysis of induced growth, contrary to federal requirements, the public interest and common sense. It is not possible to rationally assess the impacts of the casinos without at least a general review of the buildout which will accompany it. Simply relying on local zoning is neither analysis nor mitigation of these growth-sprawl issues.
31. Please respond to following issue: Neither Bridgeville nor the sites of the other casinos are in or near existing or claimed Indian territory, and the placement of casinos is foreign and offensive to the community. There is no basis for this wholesale intrusion into the community mores and ethics.
32. Is the site currently served by an adequate and acceptable water supply?
33. How will activity at the proposed site impact resources of local, county and state law enforcement resources, over a projected ten-year period?
34. How will the applicant contribute to a stable and affordable housing stock supply consistent with the applicant's proposed workforce housing needs?

35. Is there paved access to the project site?
36. Are there usual and customary children's play areas within the vicinity of the project site?
37. Please respond to following issue: The DEIS fails to take any account of one of the most significant impacts: the introduction and prominence of casino gambling on central-southeastern Sullivan. There is no assessment of the impact on the social fabric. This is absurd since arguably no commercial activity will have as significant an impact on community character as casino gambling, particularly five casinos. No mitigation is even arguably complete unless the social support for gambling impacts on the community is fully funded.
38. How will the applicant assess project site light and glare to adjacent properties?
39. What nationally accepted professional or scholarly data is the applicant using to evaluate the impact of an Indian gambling casino upon the foreseeable disposable income loss to adjacent commercial, retail, restaurant, recreational and lodging facilities, over the next ten years?
40. Will the project be impacted by poisonous plants, insects or animals onsite?
41. Has the State Historic Preservation Office (SHPO) been notified of the project and requested to provide comments?
42. Is the project within 2 and 1/2 miles from the end of a runway at a military airstrip?
43. What law enforcement and public safety plans have been developed for the proposed project that will be commensurate with area law enforcement and public safety needs projected over a ten year period?
44. Are there current sanitary sewers and waste water disposal systems serving the site?
45. Will the project be affected by seismic faults, or fractures?
46. Are there existing or abandoned transformers, fill/vent pipes, pipelines, drainage structures?
47. Will the project influence or be unduly influenced by postponed maintenance?
48. Is the property located within or directly adjacent to an historic district?
49. Will the project affect or be affected by nuisance odors? What mitigations are proposed?
50. Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?
51. Will the project be affected by wind/sandstorm concerns?
52. Are there proposed air pollution generators associated with the proposed project?
53. Describe the site elevations and any accommodations required for significant slopes.
54. What are the previous uses of this site and what residual impacts affect the project or are affected by the project?
55. Are there unusual conditions on the site?
56. What mitigations are proposed for water supplies of the proposed project that will not affect or will ameliorate water supplies of adjacent residential neighborhoods businesses, and other land uses currently receiving adequate water?
57. Are there unprotected water bodies on site?
58. Do public school buses travel the road systems associated with the project site, and if so, how will traffic mitigations proposed by the applicant ensure safe and timely schedules for public school transportation needs?
59. Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the vicinity of the project site?
60. Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1,000 feet), or railroads (within 3,000 feet)?
61. Will the proposed project increase a need for onsite or offsite daycare facilities for children, and how will the applicant accommodate such need, inclusive of safety of children to and from day care facilities?
62. Are there waste materials or containers on site?
63. What mitigations will ensure that onsite and offsite light and glare will comport with adjacent local government light, glare and signage requirements?
64. Has a traffic study calculated existing road maintenance requires with anticipated road maintenance or road expansion needs to accommodate the project? What are project costs associated with this subject?
65. How will the applicant assure the local government and surrounding community that costs associated with increased water supply needs of the project will be fully accommodated by the applicant, and not a burden imposed upon local governments, local water districts or providers, or local property owners?
66. What mitigations in terms of personnel, monitoring systems, training and counseling programs is the applicant proposing to minimize the impact of anticipated crime associated with the gambling industry?
67. Please respond to following issue: The DEIS fails to account for any of the environmental or social impacts of five casinos. The people deserve and the law demands a full, competent assessment of cumulative impact given Governor Pataki's plan to imposing such a burden on (indeed sacrifice) Sullivan County to mitigate state budget problems and avoid the land claim litigation.
68. Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas? If so, what site and construction adjustments have been determined to protect scenic viewsheds or other public entitlements?
69. Will the proposed project affect a sole water source or other aquifer?
70. Does the applicant propose to handle or sell explosives (fireworks) or propose to store fire-prone materials such as liquid propane, gasoline, or other storage tanks above or below ground?

71. Is the project compatible with surround areas in terms of building density?
72. Has a traffic study accommodated existing traffic counts experienced at the project site, and then projected appropriate increased traffic counts based upon days of the week, hours of the day or night, and special events?
73. What is the proximity of public schools to the project site?
74. What procedures or guidelines will be developed that allows community members or adjacent property owners to formally complain about inordinate or unanticipated noise?
75. Are other natural resources visible on site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project?
76. Is the project compatible with surround areas in terms of building type (low/high-rise)?
77. Please respond to following issue: The Stockbridge-Munsee casino makes no sense from a land use perspective. Smart growth generally requires concentrating development in already built areas, to avoid sprawl and regenerate existing community centers. Bridgeville is a very small hamlet which the casino would overwhelm.
78. How will a project workforce impact local community housing needs, projected over the next ten years?
79. Please respond to following issue: It is unfair and wrong to at once transform the traffic in the region from generally clear with some limitations during rush hour, to generally busy and congested and overloaded during peak hours. Mobility would be significantly infringed, and those who disproportionately rely on automobiles, such as businesses, would be badly damaged.
80. What percentage of the project site is proposed for impervious surface, and how does this surface impact existing elements such as a sole water source or other aquifer?
81. If the project water supply is non-municipal, has an acceptable "system" been designed, and approved by appropriate state and local authorities and agencies?
82. Is the project compatible with surround areas in terms of height, bulk, and mass?
83. Have soil reports or studies or borings been made for the project site or the area? If so, what are the findings of soil studies accomplished?
84. What additional sanitary sewer and wastewater disposal systems are required and how will expansions of such infrastructure impact existing, connecting infrastructure in terms of capacity and annual cost?
85. How will the applicant mitigate heavily traveled highways, adjacent and onsite road systems?
86. Is the proposed building footprint located in a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?
87. Are there visual indications of filled ground? What assurances has the applicant developed to ensure soil stability for construction footprint and impervious surfaces?
88. Is the project located within a floodplain designated on a current FEMA flood map (24 CFR Part 55)?
89. Please describe whether or how the applicant proposes to hire a local workforce, and how this potential transition of workers from current employment to future employment with the applicant might impact the local workforce?
90. Are there pools of liquid or soil staining, chemical spills, abandoned machinery, cars, refrigerators, etc.?
91. Does the applicant anticipate hiring a workforce from outside of the immediate community? If so, from what sources will the applicant recruit its workforce?
92. What cost mitigations is the applicant proposing to offset impacted and increased law enforcement personnel needs of agencies serving the proposed project?
93. What is the total anticipated impervious surface coverage estimated for the proposed project?
94. Is the project compatible with surround areas in terms of land use?
95. How will any proposed private transportation systems impact and/or coordinate with public transportation systems currently in operation?
96. How will the project impact existing public transportation facilities of the community?
97. Please respond to following issue: Overall, the plan to site five casinos in the Route 17 corridor is an affront and danger to the existing communities. It is ironic that the remedy for their supposed problem - economic stagnation - is a wholly disproportionate influx of nuisances including casino gambling and induced growth, pollution traffic and social ills.
98. How will a project workforce impact local housing over-crowding and code enforcement conditions that might impact adjacent communities, projected over the next ten years?
99. Will the project influence or be unduly influenced by incompatible land uses?
100. How will the applicant mitigate large parking facilities (1,000 or more cars)?
101. Is there any indication of currently distressed vegetation?
102. Please respond to following issue: Governor Pataki himself, the chief proponent of the plan to put five casinos in the Sullivan-Route 17 corridor, has recognized the need for a cumulative impact assessment. In officially commenting on the Stockbridge-Munsee casino the Governor has specifically advised the BIA to conduct such an assessment before approving any of the casinos.
103. Have structural borings or dynamic soil analysis been requested in association with geological studies?

104. Does the project site or neighborhood suffer from disproportionately adverse environmental effects on minority and low-income populations relative to the community-at-large?
105. Are there established biking and pedestrian pathways at or near the vicinity of the project site, and if so, what mitigations does the applicant propose to ensure the safety and non-interference of use of these public pathways?
106. Please identify an anticipated customer and weekly/daily/hourly traffic count associated with each commercial or ancillary use planned in the near-term and long-term use of the project site.
107. Are there other hazardous terrain features?
108. Is there evidence of slope erosion or unstable slope conditions on or near the site?
109. How will the applicant ensure that increased capacity needs of public transportation will be accommodated at the sole expense of the applicant and not the adjacent local governments?
110. For each alternative site considered by the applicant, please describe the level of analysis conducted, and explain why the specific site was rejected, in preference for the proposed site of the applicant.
111. Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of Interior (DOI)?
112. Are there usual and customary recreational areas in the vicinity of the project site that are currently utilized by the adjacent community, and if so, how will the users of these recreation areas be affected by the project?
113. Does the project proposal include a full inventory and assessment of all hazardous materials associated with the project?
114. How will current sanitary sewers and waste water disposal systems be impacted by the proposed project, and at what cost?
115. Has a traffic study been developed for the proposed project that is specific to this site and this project, and not just generic to the proposed industry?
116. Were underground storage tanks ever located on the site? If so, provide documentation that all underground storage tanks have been identified, located and appropriately removed by qualified professionals, using current techniques in compliance with 40 CFR Part 280.
117. What mitigations (i.e. traffic signals, traffic security personnel, shuttle services) are proposed to ameliorate significant traffic increase and activity associated with the proposed project? What is this cost and how will it be accommodated without affecting costs of adjacent local governments?
118. Please respond to following issue: The pollution from such added traffic will damage air quality in the area, and exacerbate unhealthy conditions. Sullivan County residents already suffer from a disproportionate and growing number of respiratory problems. There is no justification for subjecting such individuals to a relatively sudden and serious deterioration in air quality and resulting threat to their health.
119. How will the applicant mitigate incinerators?
120. Is the project located in a predominantly minority or low-income neighborhood?
121. Are there any unresolved hazardous materials issues at the proposed site that could the state, county or a municipality to be determined to be potential responsible party?
122. Will the project influence or be unduly influenced by inadequate off-street parking?
123. Will the project influence or be unduly influenced by transition of land uses?
124. For each alternative site considered by the applicant, please identify the process and professionals that made determinations that have ultimately assessed the proposed site as the environmentally preferred site.
125. How will a project workforce impact local housing sales and rental rates, projected over the next ten years?
126. Has a noise contours map been developed for the proposed project and does it show Day-night average sound level (abbreviated as DNL)?
127. What mitigations are proposed to accommodate traffic generated by the proposed project with existing traffic counts and flows at and adjacent to the project site?
128. Will the project influence or be unduly influenced by building deterioration?

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 29 2005

Mr. Stephen J. Bachop
P.O. Box 56
Obernburg, NY 12767-0056

Dear Mr. Bachop:

Thank you for expressing your concerns regarding the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We have the following response for your comments.

You provided five additional copies of a previous list of questions, consisting of 128 questions about the project in various order. In response to your previous list of questions, we have already provided you a copy of the DEIS on CD ROM for your convenience. Please read the DEIS, where most of your questions are clearly answered.

Since the DEIS adequately addresses the vast majority of your questions, providing individual answers to each of the 128 questions would not be a prudent use of Government resources. Additionally, many questions have no relation to potential impacts of this project. For an example you ask: "Will the project be impacted by poisonous plants, insects, or animals onsite?" This question is number 125, 7, 39, 54, 24 and 40 on the various duplicate lists. If you had read the DEIS, you would have known that the property would be landscaped, and would create up to 47 impervious acres on the 150 acre Gildick parcel. The DEIS provides lists of species common to the area, and the potential impact of the project on native species is already provided. The relevant issues concerning native species are whether there are endangered species and whether the property includes critical habitat. The project site has been used as an automobile salvage yard and surface mine and has very little remaining natural habitat. This information from the DEIS makes it obvious that there is no potential for any project impact on or from any local species. It is inconsequential whether any local species is poisonous or not. Even considering such a question requires that one discard all of the pertinent information, such as the current lack of habitat, the future landscaping, and the proposed altering of the surface.

Your long list is full of these types of questions with obvious answers already provided in the DEIS. Having provided six of these lists, your actions and intentions appear contrary to the intent and purpose of the public comment period for the DEIS, and may be considered obstructionistic in nature. If you choose to provide public comments for such projects, please keep the comments pertinent to the project and pertinent to the DEIS. Please keep in mind that commenting on the DEIS requires that you actually read the DEIS in order to offer comments that pertain to it. Instead, you have again provided many questions, apparently without reading the DEIS, and without considering the information that we have already provided. We asked you

to consider that questions not clearly answered in the DEIS "may not be related to the project's potential impact." Many of your questions do not relate to any "reasonably foreseeable impact" of the project.

Instead of reading the information that we provided or considering the previous answers that we provided, you claim that we must answer each question by number or be in violation of the law. Your information is not correct. Please refer to 40 Code of Federal Regulations (CFR) 1502 for the requirements for an Environmental Impact Statement. 40 CFR 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. We have already stated in the DEIS that some information is not available, such as information required to analyze the full potential impact of five casinos. Where information is unavailable, we cannot analyze the potential impacts. Some of your questions cannot be answered because the information is not available. Your other questions are either (1) already answered in the DEIS or (2) do not pertain to reasonably foreseeable significant adverse effects that are a result of the project. Accordingly, further analysis is not required.

40 CFR 1503 provides the regulation on soliciting comments. 40 CFR 1503.1 requires that Federal agencies invite comments from Federal and State agencies, Indian Tribes and the public that may be interested or affected. 40 CFR 1503.4 requires an agency to both assess and consider comments both individually and collectively. Your comments have been assessed and considered. The response by the Federal agency can be either to modify the alternatives, explore new alternatives, supplement or improve the analysis, make factual corrections or explain why the comments do no warrant further agency response. Your comments do not warrant further agency response because, as previously stated, the information that answers your questions is (1) not available, or (2) clearly stated in the DEIS and/or (3) not pertinent to any reasonably foreseeable significant adverse effects that are a result of the project.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Robert K Lampe

ACTING Director, Eastern Region

03-28-05A11:32 RCVD

Dave Colavito
145 Bowers Road
Rock Hill, NY 12775-6815
845-794-1964
dcolavi@catskill.net

-05A11:31 RCVD

March 23, 2005

Franklin Keel, Regional Director
Bureau of Indian Affairs
Eastern Regional Office
711 Stewart Ferry Pike
Nashville, TN 37214

Attn: Kurt Chandler

Re: Public Comment
DEIS Proposed Stockbridge-Munsee Casino
Town of Thompson, Sullivan County, NY
January 28, 2005

Dear Director Keel:

Thank you for the opportunity to provide input on this important project. The DEIS covers much ground, but there is also important ground that it does not cover. As a resident of Sullivan County, member of Casino Free Sullivan County (CFSC) and data coordinator for CFSC, please find enclosed my text, supporting data and references pertaining to my public comment on the DEIS for this project.

I. CUMULATIVE IMPACT ASSESSMENT

The DEIS is inadequate in several important respects, none more compelling than its lack of any assessment of the cumulative impacts from five casinos within or adjacent to the Sullivan County or the "Catskill Region", four of which are to be sited within the Town of Thompson itself. The DEIS considers only three casinos as authorized by the existing Executive Law of the state of New York, and fails to consider the Governor's proposed amendment to that law based upon four land claim settlements, which would extend the number of casinos beyond that considered in the DEIS. Indeed the Governor's plan for land claim settlements, based on signed agreements with the Stockbridge-Munsee Tribe itself and three other tribes, is described by the Governor's agent, Greg Allen, as an "all or nothing" plan in which each casino's approval is dependent upon the other. The fifth casino is the proposed St. Regis Mohawk Tribe Mohawk Mountain Casino Resort, also in the Town of Thompson, that is proceeding as a traditional "land in trust" property

pursuant to IGRA, in which the Town of Thompson, as co-lead agency, and the BIA have accepted an FEIS.

It is clear from pg. iii, "Summary, Need and Purpose", of this DEIS, that the proposed Stockbridge-Munsee casino is inextricably linked to resolution of this Wisconsin Tribe's land claim with New York State.

> "... the Tribe and State of New York intend to settle the Tribe's land claim with the State. The development of a tribal gaming facility is a key component for an equitable settlement agreement to resolve the Tribe's land claim."

The DEIS pg. 229, "Sec. 6.0 Cumulative Impacts" further asserts that the requirement of Congressional approval for land claim settlements somehow obviates the need to analyze the impacts from five casinos at this time.

> "...These five would include the three analyzed here plus two additional casinos. However, the impacts of the additional two casinos are too remote and speculative to analyze at this time. In addition, these land claim settlements require approval by Congress, so they are not reasonably foreseeable at this time. It is anticipated, however, that when the Final Environmental Impact Statement is prepared, the status of the number of casinos and their potential locations, sizes and timing will be better known and reasonably foreseeable, allowing for possible analysis at that time."

The DEIS' contention that without Congressional approval, consideration now of five casinos would be too speculative, is contradicted by the very fact that the Stockbridge-Munsee casino itself, as well as the Cayuga Nation of New York's casino at Monticello Raceway, which are considered in the DEIS itself, as two of the original three casinos authorized by the New York State Executive Law, are themselves dependent upon Congressional approval of the very land claim settlement agreements entered into recently by the Governor, for which Congressional approval itself is required. Indeed the EPA has itself has submitted a letter in the comments on the St. Regis Mohawk FEIS, that it was concerned that no five casino analysis was performed, when it is clear that the St. Regis Mohawk, like the Stockbridge-Munsee proposal, is but part of a single plan now being presented by the Governor as essential to the success of any individual casino (see attached, EPA letter from Acting Chief, Grace Musumeci, December 6, 2004). Moreover, Governor Pataki himself, in a letter, dated February 25, 2005, to Secretary of Interior, Gale Norton, in supporting the land claim settlements described above, acknowledged the need for a five casino cumulative impact upon review of any one casino, given the fact that all five are part of a single plan by which the Governor intends to establish Las Vegas style class III gambling in Sullivan County and the Catskill region. "In assessing the environmental impacts relating to the project, there may be issues arising from the cumulative impacts of locating five casinos in the Catskill region.

Therefore I urge the Bureau of Indian Affairs (as lead agency under the National Environmental Policy Act) to ensure that appropriate consideration is given to the cumulative impacts that five casinos in the Catskill region may have on the community's local resources and that an analysis of any such impacts be included within the environmental impact statements prepared for each of the casino projects."

I list here a chronology of documentation detailing the fact that the Stockbridge-Munsee casino, which is the subject of the DEIS, is but one of a five casino plan promulgated by the Governor for the Catskill region and should be incorporated within the ambit of the DEIS under an analysis of cumulative impacts of the total components of the plan itself. Copies of each are attached.

1. Town of Thompson – Town Board, Application of St. Regis Mohawk Tribe and Caesars Entertainment, Inc., SEQRA Resolution to adopt Finding Statement, December 2, 2004
2. Gov. Pataki Press Release: Seneca-Cayuga, New York State land claim settlement agreement (LCSA), November 12, 2004
3. Gov. Pataki Press Release: Cayuga Nation, NYS LCSA, November 18, 2004
4. Gov. Pataki Press Release: Stockbridge-Munsee Community, NYS LCSA, December 7, 2004
5. Gov. Pataki Press Release: Oneida Tribe of Wisconsin, NYS LCSA, December 7, 2004
6. Pataki promoting 5 casinos, December 6, 2004, Times Herald Record, Dec.7, 2004
7. Gov. Pataki's counsel, Greg Allen on "all or nothing" five casino plan, Sullivan County Legislature, January 7, 2005, Times Herald Record, January 8, 2005
8. Gov. Pataki Press Release: Pataki introduces legislation to authorize five casinos, February 3, 2005
9. Sullivan County Legislature votes to support five casino plan, February 10, 2005, Times Herald Record, January 11, 2005
10. New York State Notice of Senate hearings on impacts from land claim settlement legislation
11. New York State Assembly Bill Summary for five tribal land claim settlement agreements.

This chronology shows that ample evidence exists – much of which existed prior to completion of this DEIS – supporting the position that five casinos within the Catskill region is, and was, reasonably foreseeable. Indeed, intimating, as this DEIS does, that an impact assessment for the five casino plan is not necessary due to its overly speculative nature, is akin to planting and nurturing bulbs in the spring, while asserting that their flowering is not a reasonable expectation. The inadequacy of this position clearly serves – along with other shortcomings of the DEIS - as the vector for transmitting a range of adverse environmental, economic and social impacts beneath the radar. The effect of this transmission is to disenfranchise the very same public interest that the spirit of IGRA intends to preserve. It permits a host of avoidable impacts to ripple through local

communities, undermining their vitality. These concerns will be discussed further and need to be fully considered by BIA in any future determination.

II. FOSSIL FUEL COMBUSTON: ENVIRONMENTAL POLLUTION and HEALTH EFFECTS

The DEIS is inadequate in its assessment of environmental pollution associated with the combustion of fossil fuels. Concern over this inadequacy is discussed below as it relates to the proposed project and the cumulative effects from three casinos. These concerns only deepen with the aforementioned consideration that this DEIS does not assess the impact from five casinos.

Air Quality

Air quality issues discussed in the Summary, Secs.4.8, 5.8, 6.8 and App.I, pg.16 relate to anticipated increases in mobile (vehicular) and stationary (facility) source pollution out through 2011. The DEIS concludes from its analysis that no significant adverse impact upon air quality will result from construction and operation of this casino either in isolation, or in combination with other projects comprising the subject of its analysis. These conclusions are based on a relative comparison with existing conditions, and predicated on a set of assumptions and models presumably deemed acceptable for predicting future conditions. Closer inspection reveals several disturbing features of the analysis that need to be addressed.

A) Future projections for the unit rate of vehicular emissions are assumed to decrease due to improvements in vehicle efficiency over time (App.I, pg.16). Yet there is no discussion on how the project will affect the absolute level of diesel consuming vehicles or their relative number as compared with conventional gasoline powered vehicles. This point is particularly important in light of adverse health effects associated with diesel-powered vehicles to be discussed below. In particular, the construction phase of this project, either in isolation or in combination with that for additional casinos, will certainly produce significantly greater levels of diesel fuel emissions compared with existing conditions. Furthermore, it's unclear whether the employed assumptions surrounding reduced vehicular emissions consider any anticipated increase in absolute vehicular emissions due to further decreases in "effective" Corporate Automobile Fuel Efficiency (CAFÉ') standards. It is widely recognized that the effective CAFÉ standard has actually been decreasing for many years due to the relative increase in the proportion of SUV's and light trucks comprising our nations passenger vehicular fleet. These potential impacts need to be adequately considered.

B) The DEIS should not rely on an obvious inadequacy to conduct a "regional analysis" of air quality and to make its case of no significant impact. The DEIS acknowledges that its analysis based upon sensors that generate requisite data and are located many miles away and not necessarily even within the county of concern. By any reasonable measure this seems to be too coarse a filter for determining long-term acute and chronic effects from long term, close proximity exposure

C) The DEIS glosses over potentially important considerations on ozone and particulate pollution, by failing to consider the linearized increases in these pollutants as possible interpretation of its own data. Data from DEIS Table 4-13 is shown below, along with the projected time frame for exceeding the National Ambient Air Quality Standard (NAAQS). Several observations are apparent. First, even in this pre-casino era, rates of increase suggested in Table 4-13 for both particulates and ozone, lead to exceeding NAAQS values on or about 2011. Secondly, while the 8hr. ozone metric is already failing the NAAQS, the DEIS glosses over this point even though the EPA is now implementing stricter air quality standards (1).

Refer Table 4-13, NYDEC Monitoring Data/NAAQS

Compute linearized compounded rate of increase (LCRI) for each averaging period (AP) over 2 yr. time interval from 2001 – 2003 and show time to exceed (TTE) NAAQS **

Pollutant	Location	AP (hrs.)	LCRI (%)	NAAQS (um/M3)	TTE NAAQS (yrs.)
PM10	Belleayre	24	18.9	150	9-10
O3	Belleayre	1	1.6	235	14-15
O3	Central Valley	1	2	235	7-8
O3	Belleayre	8 ***	N/A	157	Already Failing ***
O3	Central Valley	8 ***	N/A	157	Already Failing ***

** Reflects pre-casino era

*** Measured value exceeds NAAQS all three yrs. Per DEIS, these are EPA "drive to" regs proposed in 1997 but not yet implemented.

D) The DEIS ignores the contribution to stationary source pollution from the thousands of additional dwellings it projects will be needed to satisfy the housing demand generated by new full time residents of the county. It overlooks same for similar sources associated with employment indirectly related to, or induced by, the project either in isolation or in combination with other projects considered within the scope of its analysis (App.J, sec.H). These new dwellings reflect a substantial increase in both the absolute and relative emission levels as compared with existing conditions. The DEIS needs to adequately consider this potential impact. Since natural gas is not readily available for home heating in our area, most of these new dwellings can be expected to utilize home heating oil. By any reasonable measure, these dwellings will, in toto, generate pollutants from the combustion of millions of additional gallons of home heating oil each year. Oxides of sulphur are precursors to sulphuric acid, a primary component of acid rain, which has well-documented effects upon flora, watercourses and fisheries. The combustion of oil is a recognized source of sulphuric acid. The DEIS needs to adequately consider these potential impacts along with any effect they may have upon the Neversink River.

Health Effects

A) The DEIS fails to consider information in the public domain regarding serious potential impacts to human health. Acting in the absence of complete information is often a challenge that confronts decision makers in circumstances surrounding urgent matters. However, the BIA's trust responsibility to the Tribe implores it to assume the precautionary principle and "first do no harm". This is particularly so in the absence of any reasonable criteria for urgency. When presented with credible information suggesting a reasonable possibility or likelihood of harm to the host community, there should be no conflict of interest. And the direction of causal arrows need not be completely understood, in order for such information to rise to a level that warrants serious deliberation by BIA.

B) In light of the prior discussion, BIA needs to seriously consider the potential impacts from diesel pollution associated with this project, and the cumulative impact from construction and operation of other proposed area casinos, upon Sullivan County and the surrounding area. A recent Times Herald Record article (2) reports results from the Clean Air Task Force that relates diesel fuel emissions to increased rates of asthma, heart attacks, cancer and premature death. It ranks Orange County 111 out of 3,109 counties nationwide and 9th out of New York's 62 counties in these diesel fuel related health risks. Ulster and Sullivan counties ranked 15th

and 21st among New York counties. Clearly a rise in diesel emissions is associated with this and other casino projects sited within Sullivan County. Clearly, as the DEIS states, much of the increase in vehicular activity will occur through Orange County and clearly neighboring Ulster County will be similarly compromised. The inadequacy of the DEIS to consider this potential impact needs remedy.

C) In light of the prior discussion, BIA needs to seriously consider the potential impacts associated with this project, and the cumulative impact from construction and operation of other proposed area casinos, on Chronic Lower Respiratory Disease (CLRD) in Sullivan County and the surrounding area. As the New York State Department of Health reports (3), even when adjusted for population and age, CLRD death rate in Sullivan County, at 57.7, ranks 17th of all 62 NYS counties, is about 66% higher than for NYS as a whole, and is about 50% higher than region 6 as a whole (Sullivan, Orange, Ulster, Rockland, Westchester, Putnam and Dutchess Counties). Within region 6, Sullivan, Orange and Ulster counties have the three highest adjusted death rates for CLRD. Orange County, at 53.6, is 54% and 40% higher respectively for the NYS and region 6, while Ulster County, at 49.3, is about 42% and 29% higher than NYS and region 6. So the three counties within region 6 at greatest risk for CLRD deaths, will bear nearly the entire brunt of emissions associated with the many millions of additional vehicles that this DEIS reports will be associated with this and other proposed casinos for Sullivan County. The inadequacy of the DEIS to consider this potential impact needs remedy.

D) In light of the prior discussion, BIA needs to seriously consider the potential impacts associated with this project, and the cumulative impact from construction and operation of other proposed area casinos, upon rates of Myocardial Infarction. As researchers in the New England Journal of Medicine recently reported (4), a positive correlation is observed between time spent in traffic and heart disease. The inadequacy of the DEIS to consider this potential impact needs remedy.

E) In light of the prior discussion, BIA needs to seriously consider the potential impacts associated with this project, and the cumulative impact from construction and operation of other proposed area casinos, upon death rates in Sullivan County and the surrounding area from heart disease. In particular, as a recent Times Herald Record article reports (5), death rates from heart disease in Sullivan and Orange counties far exceed the national average, and the risk increases with distance from a cardiac care center. Since heart tissue degeneration doesn't discriminate between distance and time, proximity is only one important factor to consider. Anticipated extended delays due to increased traffic volumes associated with this project and other proposed area casinos have been widely

reported (6). These delays are not just a matter of inconvenience, but can determine life or death. This DEIS fails to acknowledge what local residents already realize, that Rt. 17, contrary to whatever paper studies or selected data acquisition exercises have transpired heretofore, already exceeds capacity at numerous locations and times, and that injecting millions of additional vehicles onto area roadways will carry obvious consequences. The BIA needs to reach out to local county planners in order to reconcile the optimistic traffic conclusions of the DEIS against the current reality for area commuters. This inconsistency will be a matter of life and death. The inadequacy of the DEIS in reconciling this inconsistency needs remedy.

III. COMMUNITY CHARACTER

Sprawl

The DEIS does not adequately consider the effects of sprawl. It relies on reference to a range of activities it presumes will be sufficient to control sprawl. The Sullivan Countywide Master Plan is under revision. The time frame required for the tenets of that plan to be reflected in the 15 towns within the county - or more importantly, in the zoning for each of these towns -is long, compared with the time frame for sprawl to induce substantial and adverse impacts. Casino employees will need a place live long before adequate zoning will be in effect. The DEIS must not gloss over this, since studies repeatedly demonstrate the detrimental effect that sprawl imparts on the economics, health and quality of life for communities. The Commissioner of Planning for Sullivan County recently testified before the NYS senate on 3/3/05 to the effect that Sullivan County does not have the infrastructure in place for three casinos, let alone five (7). Additionally, this DEIS fails to acknowledge that no set of conduct or conflict of interest guidelines exist for planning boards and zoning boards within Sullivan County. For example, it fails to acknowledge that the attorney for the St. Regis Mohawk casino referred to above, and for which the BIA was also lead agency, is also the attorney for several towns in Sullivan County. The irreconcilable dilemma created by this type of unacceptable behavior was chronicled in my letter of public comment to the BIA, dated November 5, 2004, on the FEIS for the St. Regis Mohawk casino project. Given all this, the inadequacy of this DEIS to properly consider the impacts from sprawl must be remedied.

The DEIS does not evaluate the interaction of gentrification with sprawl, and this combined cumulative impact upon community character. The affect upon local farmers unable to either get their products to market in a timely manner, or expand their markets and services, due to traffic congestion is just one important consideration of this. It is a fact of life that open space preservation cannot effectively compete against free market forces, and as this particular group finds it more difficult to compete against all the trappings of a casino culture, the inevitable turn over of farm and field, into town house and black top, will take its irrevocable toll on community character.

Addiction, Bankruptcy and Crime (ABC)

The DEIS does not evaluate the effect of the ABC's on community character. It gives only tacit acknowledgement that increased numbers of addicted gamblers will populate area communities. The executive director of the Recovery Center in Monticello, NY, Ronnie Uss recently testified before the NYS Senate and "can almost guarantee" that the community will have to contend with increased addiction (7). The DEIS almost inadvertently refers to the increased rates of bankruptcy that will ensue (8), though again, there is no discussion on how the rising incidents of bankruptcy will ripple throughout communities. It's as though any breakdowns in family and business cohesion will take place in some vacuum, detached from community character.

And while sec. 5.11 seems to begrudgingly recognize the possibility of rising crime, it couches this recognition in a "we need more research" attitude that fails again, to provide any analysis on how community character may be altered. This is indeed disturbing since again, as recently as 3/3/05, the County District Attorney, Steve Lungen, testified before the NYS Senate that crime would "absolutely, dramatically increase (7).

These impacts to community character will undermine the sacrifices that people make to remain in Sullivan County and the area. This is particularly so for people like myself who have moved here from elsewhere, at significant personal cost, for a quality of life that it is in ever-shorter supply. Quality of life and a sense of well-being are intertwined into the very fabric of a community's character. Yet these considerations are absent from any consideration within this DEIS.

The potential blight that this project brings to the character of local communities needs to be adequately addressed.

IV. EVIRONMENTAL EPILOGUE

Sections I through III highlight a range of environmental inadequacies for which the BIA needs to address. Insomuch as this DEIS does not evaluate the cumulative impacts from the five casinos, the aforementioned inadequacies are heightened by the need to do so. So it should be clear that these inadequacies exist, in and of themselves, for the three casinos considered in this DEIS, that NEPA requires their deliberation by BIA along with BIA's responsiveness to them, and that the lack of their consideration in the context of five casinos serves as grounds for a supplemental environmental impact statement to do so.

Additionally, a range of economic and social impacts have not been adequately addressed in this DEIS and will be discussed below

V. TRAFFIC IMPACTS

As indicated in sec. II). Health Effects. E, the BIA needs to reconcile the inconsistency of their traffic analysis with the reality of those already living in the community. In anticipation of such reconciliation, BIA will be faced with the inevitable conclusion that traffic mitigation can only be achieved through development of a high-speed mass transit system or a widening of Rt. 17. The Summary, Regional Traffic, pgs. xvi, xvii stakes a claim of no commitment for and additional traffic lane on Rt. 17/I86. The BIA needs to refrain from such a position until such time as its position is more in line with aforementioned reality. The tribe's responsibility for widening the Rt. 17/I86 corridor is an option that needs to be placed back onto the table. This is an important consideration that bears directly on the net benefit to host communities and the mitigation required to ensure that negative impacts are adequately mitigated.

The DEIS correctly asserts that the casinos subject to its analysis will result in millions of additional vehicles on area roadways each year. It is self-evident that full consideration of the five proposed casinos will further increase this volume of traffic. Yet this DEIS makes no attempt at assessing any increase in either the rate or absolute level of motor vehicle accidents, damage or theft. As such, there is no assessment of the inevitable additional costs to area residents associated with rising vehicular and medical insurance rates and related impacts. The DEIS needs to address this inadequacy in order to properly determine the economic impact to area residents.

VI RESIDENTIAL TAXES: SHIFTING DEMOGRAPHICS

a. 35% of households in Sullivan County have children, @ 1.9 children/household (9)
b. 30% - 52% of households in Sullivan County classified as "part time" use (10,11)
c. Sullivan County population increases 2.5 X in summer months (12)

Full Time County Residency

It is evident from these considerations that the demand for municipal services in Sullivan County peaks in summer months, falls off substantially in other seasons, and that households without children attending county schools, underwrite a substantial portion of the residential school tax base. It is also clear that casino employment will drive a significant increase in the fraction of year round residency in Sullivan County. The DEIS provides no guidance on how this shift towards a more year round demographic will change over time, or its affect upon residential property and school tax funding. The DEIS needs to address this inadequacy in order to properly determine its economic impact and properly offset net economic benefits it purports to host communities. Clearly this will be a negative adder serving to diminish net benefits to area residents regardless of whether they participate directly, or indirectly, in casino employment. BIA needs to address mitigation for such an impact.

County Home Ownership

The DEIS figures for the anticipated number of jobs and size of payroll for this project - and for the cumulative effect from all proposed area casinos - needs to be evaluated against the costs for housing in Sullivan County. It is unclear what fraction of new county residents will be able to afford their own home or will need to rent. The DEIS provides no guidance on how this "renter/buyer" ratio might change with time through full build out and beyond, or what effect its changing composition will have upon the residential school and property tax base. The median projected salary for casino workers provides greater insight than the average salary for this assessment, so the BIA should evaluate this potential impact on that basis.

VII. INCREASED SERVICES

The DEIS does not adequately assess the increased costs associated with additional addiction, bankruptcy and crime associated either directly with the project or with induced growth. It assumes that provisions within some state compact that does not yet exist will provide proper coverage. As discussed above in section III, Community Character, expert testimony, from county professionals working within law enforcement and social services, before the NYS Senate, are unequivocal in their prognosis on future trends in these areas of concerns as they relate to this, and other casinos planned for the Catskill region. A proper assessment of these additional costs should not be based merely on assumptions or academic treaties from paid industry consultants, but also needs ground truthing against the reality of county professionals working in the field.

As stated on DEIS, Summary pg. iii, the casino is an integral component needed for settlement of the Tribe's Land Claim. That land claim is, in itself, an integral part of Governor Pataki's plan to settle land claims with five Tribes. (Sec. 6.0, pg.229). This package of five land claims contains exclusivity provisions for the expansion of slot machines, Class II gaming and other Class III gaming in all five counties of NY City, five of the seven counties in the Mid-Hudson Valley (Sullivan, Orange, Ulster, Rockland and Westchester) and Greene and Delaware counties. The DEIS needs to evaluate the impact that this potential expansion of legalized gambling will have across this broader landscape.

VIII. CUMULATIVE AND GROWTH-INDUCING EFFECTS

The dominating affect that this single casino will have on Sullivan County's economy is clear. The DEIS estimates that new purchases associated with annual operations, and secondary induced spending will be $795.5 million per year. And this single casino is estimated to draw 10 million visitors a year. The combined effect from three casinos, let alone five, is staggering. Sec. 6.10 estimates 11,904 full time employees associated with three casinos - about 1/3 the current labor force within Sullivan County – and a demand for 4,362 housing units, 2814 of which would be located in Sullivan County. Sec.7.1

highlights that thousands of new employees moving into the area represent one important source of induced growth potential. But, while Sections 6.0 and 7.0 of this DEIS cover a range of cumulative and induced growth impacts, neither evaluates the dominating (and potentially detrimental) effect that this casino project and other area casinos will have on Sullivan County's (and the region's) economy. The DEIS references the Spectrum Report (2004) when doing so supports its position of "benefits to all", but fails to mention that report's admonitions against having casinos dominate the County's economy.

The DEIS needs to fully consider the potentially adverse impact that a casino dominated economy will have upon county residents.

The demise of Sullivan County's resort industry is regarded in certain circles as some economic plague that swept over this region decades ago, casting it into some sea of economic desperation from which it is believed it has never returned. The alleged resort industry "hey day" of decades past is touted as the "good old days we all long to return to". And casinos in Sullivan County are portrayed as the Messiah that will Shepard county residents, and carry the entire region back to that Promised Land. This DEIS puts forth a similar vision of this county's economic past and present, as it extols the virtues of a casino future.

Yet this DEIS finds no need to either query the demise of this illustrious past, or concern itself with any lessons it may hold for the future of this county. It fails to ask a critical question. "What evidence exists to support this view, that Sullivan County will fare any better returning to its single-industry past"? And if none exists, why would we put people back on that same trajectory? Authors of the Spectrum report understood this. Rather BIA here, as it did with the FEIS St. Regis Mohawk Tribe Mohawk Mountain Casino Resort, September 2004, constructs its argument for economic benefit to county residents upon a foundation of questionable economic pretense, largely ignoring the accelerated pace of economic development that's been taking place in Sullivan County for years, and without casinos. Similar concerns with this mischaracterization of Sullivan County's economic situation have been presented to BIA previously (13, 14).

IX. PRICING PRESSURES/ENVIRONMENTAL JUSTICE

This DEIS does not assess the impact of pricing pressures upon those who are forced to live on fixed incomes. The DEIS discusses casino driven wage competition and associated ripple effects as a potential benefit to local communities. These benefits are clearly offset by their potential impacts upon the poor, elderly and disabled, who are unable to work. This demographic will experience increases in costs for rent, property taxes, and general services, and the BIA needs to adequately consider these effects upon them.

DEIS sec.9.0, Environmental Justice states:

> "There is no indication of minority populations or low-income housing near the project area. There will not be, therefore, environmental justice population impacts.
> The Tribe itself is considered an environmental justice community. As discussed in Section 5.10, there will be a positive impact on the tribal population."

BIA needs to look beyond the Neversink River in its determination of "no indication of minority populations or low income housing near the project area". It needs to specify how far beyond the project area it is looking. The pricing pressure concerns above will ripple throughout the county. BIA needs to consider this ripple effect well beyond the Neversink River as part of a cumulative impact assessment for all casinos planned for Sullivan County.

BIA needs to decide whether Sullivan County residents are economically disenfranchised relative to the Tribe in order to resolve the dilemma presented below. The DEIS describes the Tribe's economic condition as improving with time but below the Wisconsin state average. It compares Sullivan County to New York State. It uses this approach to underscore what it believes to be the depressed economic conditions of both the Tribe and Sullivan County, but fails compare the Tribe to Sullivan County. A comparison between ERS USDA median household income data for Sullivan County ($36,535) in year 2000, with that for the Tribe reported in this DEIS ($36,908), poses a dilemma. Namely, if the Tribe is considered an environmental justice community (see above quote from DEIS sec. 9.0), and its median household income is higher than that for Sullivan County, how does the DEIS justify its environmental justice position for Sullivan County? The DEIS needs to resolve this dilemma. If it cannot resolve this dilemma, then it needs to deal with the environmental justice concern in a credible manner.

Respectfully,

Dave Colavito

REFERENCES

(1) Times Herald Record, March 18, 2005, Air quality grade clouds county's plans,by Brendan Scott, http://www.recordonline.com/archive/2005/03/18/air18.htm

(2) Orange has diesel fuel issues: study, by Paul Ertelt, Times Herald Record, Feb. 23, 2005, http://www.recordonline.com/archive/2005/02/23/diesel23.htm

(3) Chronic Lower Respiratory Disease In Sullivan County, NYSDOH, http://www.health.state.ny.us/nysdoh/chac/cha/clrd.htm

(4) Exposure to Traffic and the Onset of Myocardial Infarction; Annette Peters, et al, New England Journal of Medicine, Vol.351, No.17, pgs. 1721-1730

(5) Mid-Hudson fights for cardiac rights, by Tim Logan, Times Herald Record, January 9, 2005, http://www.recordonline.com/archive/2005/01/09/tlgoodsa.htm

(6) Planners paint gloomy picture, by Steve Israel, Times Herald Record, Feb. 20, 2005, http://www.recordonline.com/archive/2005/02/20/sicasion.htm

(7) Casino hearing draws talk of crime, by Steve Israel, Times Herald Record, March 4, 2005, http://www.recordonline.com/archive/2005/03/04/hearing0.htm

(8) This DEIS, App.J, pg.55, Barron, John M., et al, The Impact of Casino Gambling on Personal Bankruptcy Filing Rates", August 18, 2000, pg.16

(9) St. Regis Mohawk Casino FEIS sec 6.7.1.6, pg. 236 (cites Census Bureau, yr. 2000)

(10) Stockbridge-Munsee DEIS sec. 4.10.2.1, U.S. Census data

(11) Ibid, App. J, sec.C. Existing Conditions, Northeast Center for Rural Development

(12) Ibid, Sec. 4.10.2.2, Sullivan County Division of Planning

(13) D.Colavito, June 23, 2004 written testimony to the BIA, DEIS St. Regis Mohawk Tribe Mohawk Mountain Casino Resort

(14) D.Colavito, November 5, 2004 written testimony to the BIA, FEIS St. Regis Mohawk Tribe Mohawk Mountain Casino Resort

Copies of (1 – 7, 13, 14) attached

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

December 6, 2004

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

Mr. James Kardatzke
Environmental Specialist
U.S. Department of Interior
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Dear Mr. Kardatzke:

The Environmental Protection Agency (EPA) has reviewed the final environmental impact statement (FEIS) for the St. Regis Mohawk Tribe Mountain Casino and Resort (CEQ #040506) located in Thompson, New York. This review was conducted in accordance with Section 309 of the Clean Air Act, as amended (42 U.S.C. 7609, PL 91-604 12(a), 84 Stat.1709), and the National Environmental Policy Act (NEPA). We appreciate that the Bureau of Indian Affairs sent us a complete copy of the final EIS and appendices for our review.

The preferred alternative consists of the development of a 165,000 square foot casino; 275,715 square feet of food, beverage and support area; a 750 room, 443,000 square foot hotel; a 2,000 seat theater; 10,000 square feet of retail space; structured parking for 6,240 vehicles; a central plant; a facilities garage; a bus parking area; a wastewater treatment plant; and a potable water plant. The preferred alternative will be developed upon a 66 acre trust parcel and an adjacent 109 acre parcel that will be held in fee by the Tribe. The development would be located adjacent to Anawana Lake.

The FEIS states that the New York State Department of Transportation (NYSDOT) "has made a definitive finding that the Route 17 corridor between New York City and the Project Site has sufficient capacity to handle the cumulative impact of three casinos in Sullivan County (App. Vol. IV, Tab 58)." However, in EPA's discussions with them, NYSDOT indicated that its letter dated August 19, 2004 only refers to the St. Regis Mohawk Tribe Mountain Casino and Resort, and not to the traffic generated by the other casinos. In addition, the Regional Traffic Impact Analysis by Creighton Manning Engineering, LLP demonstrates that under the maximum build-out scenario, defined as 3 casinos and a racino, the peak hours on Route 17 will be expanded, and specifically that the eastern section of Route 17 in Orange County will decrease from a Level of Service D to E during peak hours.

40 CFR 1508.7 states that cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Furthermore, the Council on Environmental Quality's guidance document, "Considering Cumulative Effects under the National Environmental Policy Act," states that a cumulative effects analysis should determine the magnitude and significance of cumulative effects. Therefore, while the St. Regis Mohawk Tribe Mountain Casino and Resort may have a relatively minor effect on traffic on Route 17 and the concomitant effect on air quality, it

will be part of the cumulative effect that will lower the highway's service levels at several points. As such, both the individual and cumulative effect to air quality should be quantified. Specifically, a hotspot analysis for CO and PM10 for all intersections and areas of Route 17 that will be affected by the cumulative traffic congestion during peak periods should be performed. We recommend that the analysis be included in the Record of Decision (ROD). Please provide EPA with a copy of the ROD, when available.

EPA is also concerned about the cumulative effects of other proposed developments now being discussed for Sullivan County. In any subsequent NEPA documents for this or other casinos, all reasonably foreseeable developments in the county should be included, such as any new casino developments or water parks.

Thank you for the opportunity to comment. Should you have any questions concerning this letter, please contact Lingard Knutson of my staff at (212) 637-3747.

Sincerely yours,

Grace Musumeci, Acting Chief
Strategic Planning and Multi-Media Programs Branch

Enclosure

cc: John J. Privatera

STATE OF NEW YORK
EXECUTIVE CHAMBER
ALBANY 12224

GEORGE E. PATAKI
GOVERNOR

February 25, 2005

Dear Mr. Keel:

I write to provide certain information to assist the Secretary of the Interior in determining that the Class III gaming facility proposed by the Stockbridge-Munsee Community ("Tribe") in the Town of Thompson, Sullivan County would not be detrimental to the surrounding community pursuant to 25 U.S.C. §2719(b)(1)(A).

I strongly support Class III gaming in the Catskill region – and Sullivan County in particular – as an important element in the economic revitalization of the region. In furtherance of this goal, I signed into law Chapter 383 of the Laws of 2001, which authorized up to three Class III gaming facilities in the counties of Sullivan and Ulster. These facilities are expected to create thousands of new jobs and generate millions of dollars in new investments in this historic resort community. More recently, I have proposed legislation to increase the number of authorized Class III gaming facilities in the Catskill region from three to five. This legislation would also ratify the land claim settlement agreement that the State and Tribe entered into on December 7, 2004 as part of a comprehensive package that would resolve each of the pending Indian land claims in Central and Northern New York, including the Cayuga, Oneida, Stockbridge and Mohawk land claims.

The Tribe's proposal appears to be comprehensive and carefully considered. The project site for this world-class resort and casino is located adjacent to Exit 107 of State Route 17, which is scheduled to become Interstate 86. The project will accommodate a projected 10 million visitors per year, spur economic development in the region and create approximately 5,000 new jobs. The Tribe has already executed an agreement with Sullivan County to mitigate the impacts of the project on the surrounding area.

I am advised that the Tribe has prepared a draft environmental impact statement to analyze the potential environmental impacts related to the project. Among other things, the environmental review process requires that the public and involved agencies be given an opportunity to provide substantive comment on a project. I am confident that any environmental issues raised during this process will be addressed to the Secretary's satisfaction.

In assessing the environmental impacts relating to the project, there may be issues arising from the cumulative impacts of locating five casinos in the Catskill region. Therefore, I urge the Bureau of Indian Affairs (as lead agency under the National Environmental Policy Act) to ensure that appropriate consideration is given to the cumulative impacts that five casinos in the Catskill region may have on the community's local resources and that an analysis of any such impacts be included within the environmental impact statements prepared for each of the casino projects. It is my understanding that the Tribe is currently developing such an analysis. Once complete, the Tribe's cumulative impact analysis will provide an assessment of the cumulative impacts associated with five casinos, which may then be incorporated into the analysis prepared for each of the other casino projects and supplemented as appropriate.

The Tribe's project will have far reaching positive economic impacts in the Catskill region. In addition, this project represents a significant benefit to the State and the residents of Madison and Oneida Counties insofar as this process is furthering the settlement of a long-standing Indian land claim. Overall, I am confident that this project will further an ongoing, cooperative relationship between the State and Tribe.

In sum, I believe that the Tribe's proposed casino has tremendous potential to benefit the Tribe and the local community. Assuming that the Secretary determines that the proposed casino would be in the Tribe's best interest and would not be detrimental to the surrounding community, I look forward to my review of that determination in accordance with 25 U.S.C. § 2719(b)(1).

Very truly yours,

Mary E. Pattit

Mr. Franklin Keel
Director, Eastern Region
United States Department of the Interior
Bureau of Indian Affairs
711 Stewarts Ferry Pike
Nashville, Tennessee 37214

TOWN OF THOMPSON PLANNING BOARD
RECEIVED 12/2/04 DATE

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Nora L Hughson

TOWN OF THOMPSON – TOWN BOARD

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DONALD S. PRICE, TOWN CLERK
TOWN OF THOMPSON, NY

APPLICATION OF ST. REGIS MOHAWK TRIBE
AND CAESARS ENTERTAINMENT, INC.

SEQRA RESOLUTION AND FINDINGS STATEMENT

SUBDIVISION APPROVAL AND SITE PLAN APPROVAL

Motion of Lou Kiefer, second of Bernard Cohen, carried unanimously, approving the following:

RESOLUTION

WHEREAS, on or about October 10, 2001, the Planning Board of the Town of Thompson ("Planning Board") received applications for site plan review and subdivision approval ("Application"), regarding the development of the Mohawk Mountain Casino Resort ("Project") filed by the St. Regis Mohawk Tribe ("Tribe") in Partnership with CEI – Sullivan County Development Company ("Applicant") in the Town of Thompson ("Town"); Sullivan County ("County"); and,

WHEREAS, on or about November 11, 2001, after consulting with other interested and involved agencies, the Planning Board designated itself as Lead Agency under SEQRA for the Project; and,

WHEREAS, the Planning Board considered the Application at its November 14, 2001 meeting and, upon review of the Application, including the Long Environmental Assessment Form ("LEAF") submitted therewith, the Planning Board issued a Positive Declaration of Environmental Significance and published the scheduling of a Public Scoping Session for the Project; and,

WHEREAS, on or about December 12, 2001, a Public Scoping Session was held on the Application, at which time the Planning Board received comments on the scope of the Local Draft Environmental Impact Statement ("LDEIS"); and,

WHEREAS, the Planning Board accepted written comments on the proposed scope of the LDEIS through and including December 22, 2001; and,

WHEREAS, the Planning Board notified all of the involved agencies of the proposed scope and the comment period, yet no comments were received from such involved agencies regarding the scoping document; and,

WHEREAS, the Planning Board issued a Final Scoping Document to the Applicant on January 23, 2002; and,

WHEREAS, on or about June 25, 2002, the Applicant submitted a Preliminary Local Draft Environmental Impact Statement ("PLDEIS") to the Town Engineer for review and comment; and,

WHEREAS, on or about July 19, 2002, the Applicant met with the Town Engineer, who provided comments on the PLDEIS; and,

WHEREAS, the Applicant responded to the Town Engineer's comments and supplemented the PLDEIS accordingly; and,

WHEREAS the Applicant filed a LDEIS in response to the Final Scoping Document issued by the Planning Board, the comments of the Town Engineer and public input on August 14, 2002; and,

WHEREAS, the Planning Board held a Public Hearing on September 10, 2002; and,

WHEREAS, the Sullivan County Division of Public Works reviewed the preliminary design of improvements to Anawana Lake Road (County Road 13) and recommended to the Sullivan County Legislature that such preliminary plans be conceptually approved, and,

WHEREAS, on September 18, 2003, the Sullivan County Legislature resolved to conceptually approve the preliminary designs; and,

WHEREAS, the Planning Board, in coordination with the United States Department of Interior Bureau of Indian Affairs (the "BIA") conducted a joint supplemental Scoping Session, upon public notice, on October 8, 2003 and subsequently adopted a revised Scope for a joint Draft Environmental Impact Statement ("DEIS"); and,

WHEREAS, on or about February 2, 2004, the Applicant submitted a revised DEIS to the Town Engineer for review and comment; and,

WHEREAS, the Applicant further revised the DEIS and submitted the revised DEIS to the Planning Board on May 7, 2004; and,

WHEREAS, members of the Planning Board and its planning consultants and other advisory technical staff reviewed the revised DEIS for completeness in response to the Scoping document; and,

WHEREAS, McGoey, Hauser and Edsall Consulting Engineers, P.C. (the "Town Engineer"), issued Technical Review Comments on the Application, dated May 2004; and,

WHEREAS, by Resolution dated May 12, 2004, the Planning Board determined that the information submitted in the DEIS was complete with respect to the scope, contents and

adequacy for the purpose of commencing public review pursuant to Article 8, State Environmental Quality Review Act of the Environmental Conservation Law; and,

WHEREAS, the Planning Board duly published notice of its determination to accept the DEIS as complete with respect to its scope and content and its intent to conduct a public hearing on the DEIS on June 23, 2004, at 7 p.m., in local newspapers and in the May 19, 2004, Environmental Notice Bulletin; and,

WHEREAS, a joint Planning Board/Bureau of Indian Affairs public hearing was held on June 23, 2004, at which time the Planning Board received comments from, among others, members of the public; and,

WHEREAS the Planning Board accepted written comments on the DEIS through and including July 12, 2004; and,

WHEREAS, the Applicant addressed the Responsiveness Summary adopted by the Planning Board by Resolution dated October 5, 2004; and,

WHEREAS, the Planning Board considered the DEIS, the public comments thereupon and Technical Review Comments of the Town Engineer then prepared and adopted a Responsiveness Summary responding to each such comment by Resolution dated October 5, 2004; and,

WHEREAS, on October 27, 2004, the Planning Board received and reviewed a Final Environmental Impact Statement ("FEIS") that, where appropriate, took into account the comments on the DEIS received from the public and the involved agencies, and compared the FEIS to the standards and criteria set forth in 6 N.Y.C.R.R. § 617.9; and,

WHEREAS, by Resolution dated October 27, 2004, the Planning Board determined that the information submitted in the FEIS, including the Responsiveness Summary, met the standards and criteria set forth in 6 N.Y.C.R.R. § 617.9 and therefore accepted the FEIS as complete for purposes of making the findings and determinations required by Article 8 of the Environmental Conservation Law and 6 N.Y.C.R.R. § 617.11, and published a Notice of Completion of the FEIS in local newspapers and in the November 10, 2004 Environmental Notice Bulletin; and,

WHEREAS, more than ten days have passed since the acceptance and filing of the FEIS, as required by SEQR; and,

WHEREAS, by letter to the Planning Board dated November 23, 2004, pursuant to General Municipal Law Section 239, the Sullivan County Division of Planning and Community Development issued its comments on the Application recommending approval of the Project subject to certain requested modifications, which have been included in the conditions of approval set forth below (the "County Comments"); and,

WHEREAS, the Planning Board received a number of comments from the public that postdated the end of the comment period on the DEIS as well as a number of comments after the FEIS was published. These late comments were largely restatements of concerns expressed during the comment period, except that the Village of Goshen in Orange County submitted a document entitled "Preliminary Report for Orange County, New York: Potential Economic Impact of Class III Casino Hotels," prepared by the Spectrum Gaming Group, LLC, dated July 16, 2004 ("Orange County Preliminary Report"); and,

WHEREAS, the Orange County Preliminary Report was submitted to the Applicant by the Planning Board and reviewed by Applicant's consultants. Upon review, on November 22, 2004, Applicant submitted to the Board a report entitled "Response to Orange County Impact Study by Spectrum Gaming Regarding Potential Casino Development in Sullivan County, New York" prepared by the Innovation Group ("Response to the Orange County Study"); and,

WHEREAS, the Planning Board has received and continues to receive a number of general comments from the Public regarding the Project beyond the close of the comment period, these late comments do not identify any material environmental issues that are not addressed in the FEIS; and,

WHEREAS, the Planning Board hereby adopts this Findings Statement:

APPLICATION OF ST. REGIS MOHAWK TRIBE AND CAESARS ENTERTAINMENT, INC.

FINDINGS STATEMENT

1.0 DESCRIPTION OF PROPOSED ACTION

1. The St. Regis Mohawk Tribe (the "Tribe"), in conjunction with Caesars Entertainment, Inc. ("Caesars"), proposes to construct the Mohawk Mountain Casino Resort (the "Project").

2. The Preferred Alternative consists of the development of a 134,000 square-foot casino; 160,600 square-feet of food, beverage and support area; a 742 room, 492,600 square-foot hotel; a 2,800 seat theater; 3,000 square feet of retail space; structured parking for 6,010

GOVERNOR AND SENECA-CAYUGA TRIBE OF OKLAHOMA ANNOUNCE A SETTLEMENT AGREEMENT TO SETTLE THE TRIBE'S LAND CLAIM AND DEVELOP A CASINO IN THE CATSKILLS

Agreement Begins New Partnership Between State And Tribe

Governor George E. Pataki today announced that - after twenty five years of litigation - an agreement has been reached between the State and the Seneca-Cayuga Tribe of Oklahoma ("Tribe") to settle the Tribe's land claim, develop a Class III gaming facility in the Catskills and provide for the collection of sales taxes on retail goods and services sold by the Tribe. The Governor and Seneca-Cayuga Chief LeRoy Howard signed the Settlement Agreement which must be also approved by the United States Congress and New York Legislature.

"This agreement between the State and Tribe represents the ending of an historic dispute between the State and Tribe and the beginning of a new partnership to create jobs and economic growth for the Catskills Region," Governor Pataki said. "Now, we are asking the Legislature and Congress to move this process forward."

"The agreement allows us to move forward with plans to establish the first of three new casinos in the Catskills, which would create thousands of new jobs and provide a tremendous boost to the region's economy," Governor Pataki said. "Our agreement will also provide for the collection and remittance of State and local sales and excise taxes on products sold by the Tribe, which demonstrates that we can resolve the tax collection issue with the Indian nations in a spirit of cooperation, not confrontation."

"The Seneca-Cayuga Tribe is pleased with our new partnership with the State of New York and that a quarter-century of litigation has been resolved in a fashion that will benefit future generations of the Tribe," Seneca-Cayuga Chief LeRoy Howard said. "We thank Governor Pataki for his commitment to this settlement and look forward to a long-standing partnership with the State of New York." Among other things, the Agreement between the State and Tribe provides for:

- The termination of the litigation between the Tribe and the State of New York;
- The Tribe to relinquish any interest it holds in the $247.9 million dollar judgment it obtained jointly with the Cayuga Indian Nation in February of 2002;
- The State to negotiate and execute a Class III gaming compact with the Tribe for an Indian gaming facility which would be located in the Catskills;

- The Tribe to indemnify the State for the amount of any final monetary judgment awarded pursuant to the land claim litigation, up to $350 million.
- The Tribe to collect and remit applicable New York state and local sales taxes.

To implement the agreement the State and Tribe will work together to obtain all of the necessary approvals, including the appropriate state and federal legislation. It is the goal of the parties to obtain such approvals by September 1, 2005.

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GOVERNOR AND CAYUGA INDIAN NATION OF NEW YORK
SIGNED FORMAL SETTLEMENT AGREEMENT TO SETTLE
THE CAYUGA INDIAN LAND CLAIM AND DEVELOP A CASINO IN
THE CATSKILLS

Agreement to End Historic Dispute and Protect Central New York Landowners

Governor George E. Pataki today announced that - after decades of litigation - a Settlement Agreement has been reached between the State and the Cayuga Indian Nation of New York ("Nation") to settle the Cayuga Indian Land Claim ("Land Claim"), develop a Catskills casino and establish retail tax parity.

Today, the Governor and Nation Representative Clint Halftown signed a formal Settlement Agreement which now awaits ratification by the United States Congress and State Legislature.

"This agreement between the State and Nation is a comprehensive resolution to a dispute that has caused substantial unrest and uncertainty for the people of the Finger Lakes Region and Central New York," Governor Pataki said. "I now call upon the Congress and Legislature to act to end this dispute once and for all."

"The agreement will allow us to move forward with plans to establish a second casino in the Catskills, which would create thousands of new jobs and provide a tremendous boost to the region's economy," Governor Pataki said. "Our agreement would also establish retail tax parity between Cayuga and non-Cayuga vendors, which demonstrates again that we can achieve parity with the Indian nations in a spirit of cooperation, not confrontation."

Cayuga Nation Representative, Clint Halftown, said, "After being landless for 200 years, and in litigation with the State of New York for 25 years, the Cayuga Nation is delighted that our long banishment from our ancestral lands appears to be ending." The Settlement Agreement includes, among others, the following provisions:

- The Nation (and to the extent applicable the United States) shall voluntarily withdraw all of their cross-appeals, and undertake to perform all steps reasonably necessary to accomplish that dismissal.
- The appeal filed by the defendants in the Land Claim shall continue until all possible avenues of judicial review, including the institution and full and final appeal of any proceedings on remand, have been exercised or have become procedurally impossible, so

that there is a final determination of the issues presented in the Land Claim ("Final Determination").

- Following the Final Determination, the Nation shall dismiss with prejudice all claims against any person other than the State still pending in the District Court and undertake to perform all steps reasonably necessary to accomplish that dismissal.
- If the Final Determination results in a judgment against the State, then the Nation shall deliver to the State a satisfaction of judgment, acceptable in form to the State, stating that the judgment entered in the Land Claim is fully satisfied.
- If the Final Determination affirms the judgment entered by the United States District Court for the Northern District of New York in the Land Claim in its entirety, then the State shall pay the Nation $150 million ("Settlement Amount") in ten (10) equal annual installments beginning January 1, 2007, and the Nation may possess and exercise sovereignty on up to 10,000 acres land within the Claim Area acquired from willing sellers, by gift or by transfer. (Pursuant to the Agreement announced last week by the State and Seneca-Cayuga Tribe of Oklahoma ("Tribe"), the State will be reimbursed by the Tribe for the $150 million no later than ninety (90) days following payment by the State).
- If the Final Determination results in a judgment against the State awarding money to such entities against the State that is less than $150 million, then the State shall pay the Nation the amount of the reduced judgment as determined by the Final Determination ("Reduced Settlement Amount") in ten (10) equal annual installments beginning January 1, 2007, and the Nation may possess and exercise sovereignty on up to 10,000 acres land within the Claim Area acquired from willing sellers, by gift or by transfer.
- If the Final Determination results in a judgment in favor of the State (i.e., there is no monetary award against the State), then the State shall not pay any amount to the Nation and the Nation shall not be entitled to possess and exercise of sovereignty on any land within the Claim Area other than up to 2,500 acres total contained in no more than three parcels each in Seneca County and Cayuga County ("Counties") with all lands in each parcel to be contiguous.
- The Settlement requires federal legislation to ratify all transactions by which the State or others obtained land from the Cayugas within the 64,015 acre area set aside for the use of the Cayugas in the 1789 Treaty between the State and the Cayugas and, further, to extinguish all claims to land within the Cayuga aboriginal area.
- In order to mitigate the economic impact on the Counties of removing Cayuga Treaty Land from the real property tax rolls, the agreement provides for the State and Nation each to annually contribute the sum of $3 million for the benefit of the Counties.
- The State undertakes to hold the Counties harmless against any losses in real property taxes (based upon the assessed value at the time of acquisition by the Nation) resulting from removing Cayuga Treaty Land from the Counties' respective tax bases.
- The Nation will negotiate with appropriate local government authorities for the provision of fire, police and other municipal services, and other appropriate local issues, on a mutually satisfactory basis.
- The State and Nation will negotiate a tax parity compact for all sales by Nation vendors of alcohol, cigarettes, gasoline and other retail products and services to non-Indians on

Cayuga Treaty Land.

- The Nation will adopt and enforce building codes for all construction on Cayuga Treaty Land which shall be no less stringent than the standards set forth in the International Building Code.
- Federal environmental laws and regulations will apply on Cayuga Treaty Land, and the Nation may adopt and enforce environmental standards no less stringent than the applicable federal standards.
- The State has also agreed to negotiate and enter into a gaming compact with the Nation, which will authorize the Nation to operate a Class III gaming facility at the Monticello Raceway in Sullivan County once the subject land is taken into trust for the benefit of the Nation by the United States pursuant to the federal legislation.
- The Nation would also agree to cease any Class II gaming operations other than at its gaming facility in Monticello within two years after such Monticello facility begins operation, unless the county in which any Class II facility is located and the Nation otherwise agree.

To implement the agreement the State and Nation have committed to work together to obtain all of the necessary approvals, including the appropriate state and federal legislation. Last week, the Governor and Seneca-Cayuga Tribe of Oklahoma (the other tribal plaintiff in the Land Claim) announced a separate agreement to settle the land claim and develop another casino in the Town of Thompson, Sullivan County at a site to be determined.

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GOVERNOR ANNOUNCES SETTLEMENT AGREEMENTS WITH THE ONEIDA INDIAN TRIBE OF WISCONSIN AND STOCKBRIDGE-MUNSEE COMMUNITY TO SETTLE LAND CLAIMS AND DEVELOP TWO ADDITIONAL CASINOS IN THE CATSKILLS

Agreement Would Clear Title to Nearly 300,000 Acres of Land in Central New York

Governor George E. Pataki today announced that two new settlement agreements have been reached between the State and the Oneida Tribe of Indians of Wisconsin (Oneida Tribe) and the Stockbridge-Munsee Community, Band of Mohican Indians (Stockbridge-Munsee). These two settlement agreements would, collectively, extinguish the Oneida Indian claims to land and natural resources in Oneida and Madison Counties, in addition to authorizing each tribe to develop a casino in the Catskills.

"The agreements with the Oneida Tribe and the Stockbridge-Munsee will finally end the Oneida Indian Land Claim, while creating thousands of new jobs in the Catskills and provide a tremendous boost to the region's economy," Governor Pataki said. "I call upon the Legislature and Congress to act quickly to pass the legislation necessary to implement these agreements and end once and for all the decades of unrest uncertainty that has resulted from the land claim litigation."

"These agreements will protect homeowners and taxpayers by providing clear title to lands within Oneida and Madison Counties and will hold the counties harmless for any real property tax losses," Governor Pataki said. "With the State reaching agreement with four tribes to either collect and remit sales taxes or provide for tax parity, it is clear that our cooperative approach is the most effective way to resolve the tax collection issue with the Indian nations."

Cristina Danforth, Chairwoman of the Oneida Tribe of Indians of Wisconsin, said, "The oldest and largest land claim in the history of the nation has been settled between the Oneida Tribe of Indians of Wisconsin and the State of New York. Today we are encouraged that after 200 years of dedicated pursuit of an honorable conclusion to our land claim we are realizing a significant step."

Bob Chicks, President of the Stockbridge-Munsee Community, Band of Mohican Indians said, "This is a historic moment for the Stockbridge-Munsee Band of Mohicans. It has been more than 200 years since the Stockbridge-Munsee were removed from our ancestral homeland. Today, with this settlement, Governor Pataki is taking a big step

toward redressing that wrong. We commend the Governor for this action and we want to thank the residents and elected officials of Sullivan County for their important support of this settlement."

Oneida County Executive Joe Griffo said, "I applaud the Governor's tenacity to keep working for a resolution to this vital issue. A fair, negotiated settlement is the only way this issue can be resolved in our lifetimes. Oneida County needs this long-running issue to come to closure for the good of our region, and that can only come through a deal in which there is compromise on all sides for the greater good of everyone."

Madison County Board of Supervisors Chairman Rocco DiVeronica said, "We met with the Governor today on the Oneida land claim. We applaud the progress that the Governor has made toward its resolution. There are still details to be worked out, but we are optimistic that a settlement will be finalized."

The Oneida Tribe of Indians of Wisconsin is a federally-recognized tribe whose membership includes roughly 93% of the Oneida people living in the United States. During the Revolutionary War, the Oneidas who then resided in Central New York allied with the Americans against the British army and brought food and supplies to General Washington's troops at Valley Forge. The Oneidas or "People of the Standing Stone" were a member nation of the Six Nations otherwise known as the Iroquois Confederacy.

The Stockbridge-Munsee Community, Band of Mohican Indians is recognized by the United States as the successor in interest to the Mohican Indians, Mahicans or "Muh-he-con-neok" that once occupied lands within the Hudson and Champlain valleys and who met with Henry Hudson on the Half Moon in 1609. The Tribe's most significant religious, cultural and historical sites are located, and many of its ancestors are buried, in New York State. Like the Oneidas, the Stockbridge also sided with the colonists during the Revolution and also played a significant role in the politics, history and culture of New York.

The two settlement agreements include, among others, the following provisions:

- Under the agreements, the Oneida Tribe and Stockbridge-Munsee will jointly assume all liability for the extinguishment of the Oneida Indian land claim.
- The agreements provide for Oneida and Madison Counties to each receive $5 million per year in economic development funds (with a 2% annual adjustment for inflation each year). In addition, the settlement agreements hold each county harmless for any resulting losses in real property taxes.
- The Oneida Tribe and Stockbridge-Munsee will each be authorized to operate a casino in the Catskills once the subject lands are taken into trust status by the United States pursuant to federal legislation.
- The Stockbridge-Munsee would operate on an approximately 333-acre site in the Town of Thompson (just off I-86 on County Route 161) and the Oneida Tribe at a

site to be determined.

- Both the Stockbridge-Munsee and Oneida Tribe have agreed to collect and remit all state and local taxes on retail goods and services sold on or from their respective Catskills properties.
- Both tribes would be required to execute a local service and impact agreement with the county in which the casino is located on a mutually agreeable basis.

To implement the agreement the State and the two tribes have committed to work together to obtain all of the necessary approvals, including the appropriate state and federal legislation. ###

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Pataki wants more casinos built

By John Milgrim
Ottaway News Service
jmottaway@aol.com

Albany – Gov. George Pataki said yesterday that he favored increasing the number of Catskill casinos from three to five to help the state cover mounting education costs.

The proposal, however, met swift resistance from the lawmakers who ultimately need to approve it.

"Before we authorize more than three casinos, we should see the first three started, and only then allow more than three to be built in the Catskills," said Sen. John Bonacic, R-C-Mount Hope, who represents the region where casinos are authorized for development.

He also said no expansion should be considered without a local referendum.

Assemblywoman Aileen Gunther, D-Forestburgh, was similarly opposed to Pataki's plan. All of the proposed casinos, to be owned by Indian tribes, are within her district.

"I support three," she said, adding she can't see authorizing any more until work has started on at least one of the three authorized in 2001, and until she is sure the county will see some cash from the all the casinos.

Several top-level sources familiar with Pataki's plan said it would include settling Indian land-claim lawsuits against the state by the Stockbridge-Munsee Band of Mohicans and the Wisconsin Oneidas, which are cousins to the New York Oneida Indian Nation. Those two tribes would get the additional two casinos.

Also expected to get one of the originally authorized casinos is the New York-based St. Regis Mohawks, who have planned to build at Kutsher's Sporting Academy outside Monticello since 2000.

Each of those would be in addition to recently

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• Wounded local G.I. counts his blessings
• After Iraq, life at home isn't easy
• Crowds make plea for peace
• Iraq veteran observes protest

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announced proposals to grant casinos to the Oklahoma-based Seneca-Cayugas at the Concord resort, and the Cayuga Indian Nation of New York at Monticello Raceway, both of which still need approvals from Congress and the state Legislature.

Several sources with knowledge of the casino negotiations said Sullivan County could have a deal for at least one more Indian casino as early as today. The Stockbridge-Munsee Band of Mohicans would get a casino in Bridgeville off Route 17 Exit 107 as part of a settlement of its land claim against New York state.

Rep. Maurice Hinchey, D-Hurley, said he won't support Pataki's new expansion plan.

"For the second time in less than two weeks, the governor is pushing ahead with plans to dramatically alter the economic, social and physical landscape of Sullivan and Ulster counties without consulting local officials are seeking their support," Hinchey said.

State lawmakers approved the three Indian-owned Catskill casinos in late 2001 as part of the state's largest gambling expansion in history. The development was meant to help raise revenues to deal with fiscal fallout from the 9/11 terror attacks.

So far, however, Pataki has been unable to finalize deals for any of those that were previously authorized, though he's come close on several occasions.

Staff writer Steve Israel contributed to this report.

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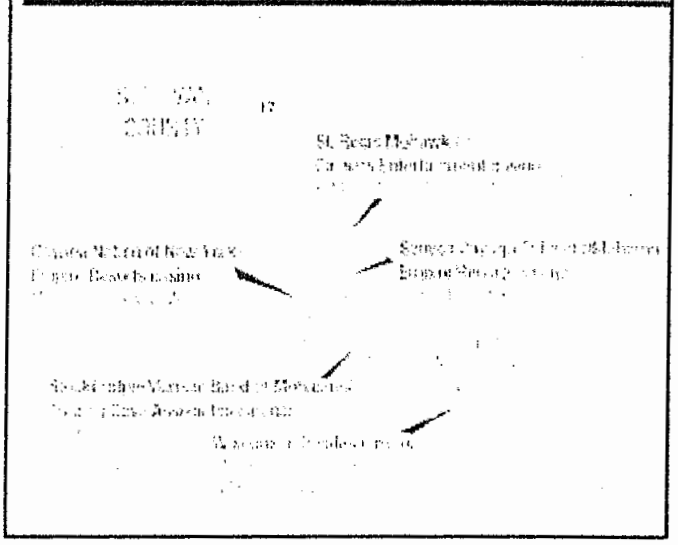
Our own little Las Vegas?

Impact of 5 local casinos would be felt

By Steve Israel
Times Herald-Record
sisrael@th-record.com

The five possible Catskill casinos and their Sullivan County locations:



The world has never seen anything like this:
Five of the biggest casinos on the planet.
In our back yard.
In two years.

This is what Gov. Pataki's new indian casino plan could mean for us.

"You're going to be the next Las Vegas, if Pataki has his way," says indian law professor Robert Odawi Porter of Syracuse University.

"There's really no precedent for anything like this, anywhere," says Indian casino expert Robert Batton of the Albany Law School.

"The closest would be Atlantic City, where in 40 months nine casinos opened," says Michael Pollack, the director of Spectrum Gaming, a casino consulting group that prepared an impact study for Sullivan County.

Congress could get the casino ball rolling in

• Do only parents care about war
• Wounded local G.I. counts his blessings
• After Iraq, life at home isn't easy

• Crowds make plea for peace
• Iraq veteran observes protest

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two months.

"It would be over and done with once it's signed into law," says the chief of staff for Rep. Maurice Hinchey.

Thirty thousand new jobs.

Twenty thousand new students.

More than 10 million cars and buses heading to the Catskill casinos per year.

How can this happen?

Why so soon?

And what, if anything, can stop it?

What's new?

Gov. Pataki said this week he wants a new law permitting five indian casinos in Sullivan and/or Ulster counties, not the three currently allowed. He also signed deals with two more tribes for casinos in Sullivan County. This comes a month after similar deals with two other tribes. The St. Regis Mohawks already have a deal with the state waiting to be signed.

Who are the players?

- The Mohawks, with their development partner Caesars Entertainment, at Kutsher's Sports Academy.
- The Oneida Tribe of Wisconsin, with the Cordish Company, on 88 acres off Route 17 in Mamakating.
- The Stockbridge-Munsee Band of Mohicans with Trading Cove Associates on 333 acres in Bridgeville.
- The Seneca Cayuga Tribe of Oklahoma, with Empire Resorts, at the Concord resort.
- The Cayuga Nation of New York, with Empire Resorts, at Monticello Raceway.

How can casinos open so fast?

Unlike the lengthy Bureau of Indian Affairs reviews of the past, Pataki's proposal requires Congress to pass a law settling the land claims of the five tribes in exchange for casinos. The state Legislature must also approve. While the law will require environmental reviews, they're not the lengthy ones of the past.

When will this happen?

Congress and the Legislature won't reconvene until January. A high-ranking state official says the target date for congressional action on all

five casinos is early February, when the Interior Department appropriations bill may be proposed.

Doesn't the Interior Department have to sign off on the casino deal?

Yes. But even though Interior Secretary Gale Norton has said she frowned on off-reservation casinos -- as all of these would be -- Interior officials told the state they're OK with them if they're part of land-claim settlements.

When would they build?

A few months after Congress and the state Legislature give their approvals. That means construction could start in the spring or summer of 2005. It would take 12-18 months.

Does Sullivan County have a say?

Sort of. Yesterday, Pataki issued a statement to the Record saying his bill for five casinos would "require each of the tribes to enter into an agreement with the county before they can develop a casino."

Sullivan already has casino agreements with the Mohawks and Stockbridge-Munsee. It has two pending deals with the Cayugas and Seneca Cayugas. That makes four casino agreements. The fifth tribe, the Wisconsin Oneidas, owns land in the eastern Sullivan Town of Mamakating, where it plans a casino.

Still, state Sen. John Bonacic says he won't introduce the bill if the county isn't behind it. And Congress is unlikely to act without a say-so from the state.

But upstate lawmakers could apply pressure to settle the land claims. Their counties, which are home to the disputed land, would get millions of dollars and the assurance they could keep some 300,000 acres of land the Indians say is theirs.

Is this a five-or-nothing deal?

No, although the congressional bill would be for five casinos. But even if that stalls, three tribes with land claim settlements could open casinos in about two years: The Mohawks at Kutsher's, the Stockbridge-Munsee in Bridgeville and the Cayuga Nation of New York at Monticello Raceway.

What could stop five casinos?

Two main things:

A lawsuit challenging the law allowing indian casinos in New York. It's failed two state tests but faces one more.

And/or strong New York opposition, although Republican Pataki will use his party connections to push hard for the bill. It settles land claims that could cost the state hundreds of millions and pumps billions into a state desperate for cash, including the $23 billion it must spend on New York City schools.

Casinos by the numbers:

3: Indian casinos New York state has approved for the Catskills

5: Indian casinos Gov. Pataki has proposed for the Catskills

49: Percentage of Sullivan residents in a 2004 Sunday Record poll who favor casinos in the county

62: Percentage of Sullivan residents in a 2001 Sunday Record poll who favor casinos in the county

- 2,025: New problem gamblers with three casinos, based on national averages

20,000: New students in Sullivan school districts with five casinos

30,000: New jobs with five casinos

359,091: Buses to Atlantic City casinos per year

2.7 million: More cars on local roads to visit three casinos per year

53.4 million: Americans who went to casinos in 2003

$75: Average lost in a two-hour visit at Mohegan Sun

$27,000: Average casino salary in the country

$41,000: Median income of average casino player

$65 million: Cost to Sullivan County communities (education, county and local services) from three casinos

$75 million: Revenue per year to Sullivan County from five tribes (not including new jobs and taxes from commercial growth)

$1 billion: Revenues per year of indian casinos in Connecticut (an unofficial number, since indian casinos don't report income or pay taxes).

$27 billion: Money Americans spend in commercial casinos per year (more than they spend on cable TV, coffee or videos)

Sources: Spectrum Gaming, Sullivan County, U.S. News and World Report, American Gaming Association

Coming tomorrow

Columnist Doug Cunningham on gambling our way to prosperity

Join Steve Israel at 11 a.m. tomorrow for a live chat session on this story. Log onto recordonline.com to ask your questions.

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Indian land deal driving Pataki?

By Steve Israel
Times Herald-Record
sisrael@th-record.com

Monticello – Forget the tens of thousands of jobs and millions of tourist dollars supporters say five casinos would bring to Sullivan County.

And put aside all of the addicted gamblers and traffic jams opponents claim the casinos would mean.

The real reason Gov. Pataki wants five Indian casinos in the Catskills – as opposed to three, two or one – has nothing to do with Sullivan County, his chief Indian affairs adviser told the County Legislature and a standing-room crowd of more than 400 yesterday.

Five casinos is the best way to settle hundreds of millions of dollars of land claims against New York state, without federal or state money, Greg Allen told a room mostly jammed with union workers wearing "Room for 5" buttons.

"Having five tribes is the greatest way of ensuring success in Congress," Allen said. "What we put together is a package that has the greatest chance of success ... and will resolve the Indian land claims in New York State."

If the legislation increasing the number of Catskill casinos from three to five isn't approved by state and federal lawmakers, it's unlikely the Interior Department would OK any casinos, said Allen.

Interior Secretary Gale Norton has said she frowns on off-reservation casinos, like those that would be built in Sullivan.

"The Department (of Interior) would have great difficulty approving off-reservation casinos through the administrative process," he said, referring to the lengthy Bureau of Indian Affairs applications tribes like the St. Regis Mohawks have filed. "They could only be approved

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through a land-claim settlement."

Or, as Jim Greier, the supervisor of the western Sullivan County Town of Fremont, put it:

"The governor is trying to settle land claims in our back yard."

When it came time for the Legislators to ask questions, the impact on Sullivan County – not land claims – was on their minds. This was despite the fact that Allen stressed each project would undergo an environmental review and have an impact agreement (worth $15 million per year) with the county.

What if one of the casinos doesn't do well? asked Jodi Goodman. What happens to the land in Sullivan?

"Once these lands are taken into trust, they become Indian country, said Allen, "and that's the way they stay. And I expect gaming will be successful."

What will the state do to help the county absorb the impact on schools, roads and quality of life? asked Rodney Gaebel. "I don't have a crystal ball," he said, "and I don't know if $75 million (from five tribes) will cover it."

Allen stressed the impact agreements that would give the county $15 million per casino. He added that the state would be "happy" to talk about to about assisting with the impacts.

"No one meeting will resolve any of the issues," he said. "This will require a lot of hard work ... financial assistance is an annual process, a budgeting process."

What about Route 42 and plans for road improvements? Greg Goldstein asked.

A DOT representative said that work could begin on Route 42 (which could lead to two casinos) "as early as this year."

But the conversion from Route 17 to I-86 will take 10 years and not include more lanes.

"It's a very uncertain transportation funding horizon at this moment," the DOT representative said.

Will there be some local regulatory control, since the legislation will make Sullivan a gambling center? asked Legislature

Chairman Chris Cunningham.

Regulation is done through a compact with the state, said Allen, who added that he didn't know of any local government involved in the "regulatory side of it."

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Bill Would Provide for State Approval of Five Indian Land Claim Settlement Agreements Between the State and Tribal Governments to Settle the Oneida, Mohawk, Cayuga and Stockbridge-Munsee Indian Land Claims; Authorize Creation of Five Casinos in the Catskills That Would Create Up to 50,000 New Jobs and Revitalize This Historic Resort Community

Governor George E. Pataki today introduced sweeping legislation that would approve each of the five settlement agreements executed between the Governor and the Seneca-Cayuga Tribe of Oklahoma, Cayuga Indian Nation of New York, Oneida Tribe of Indians of Wisconsin, Stockbridge-Munsee Community (a Band of Mohican Indians) and Akwesasne Mohawks. The ratification of these agreements would effectively resolve the Oneida, Mohawk, Cayuga and Stockbridge-Munsee Indian land claims in New York State.

"The approval of State legislation would represent a major step forward in realizing an unprecedented, historic opportunity to resolve each of the major land claims in New York State," Governor Pataki said. "The resolution of these land claims would effectively end decades of unrest and uncertainty for hundreds of thousands of property owners and taxpayers from the Finger Lakes, Central and Northern New York regions, extinguish billions of dollars in potential liability to the State and instead, generate billions of dollars and create tens of thousands of new jobs for New York's economy.

"In addition to resolving the major Indian land claims in New York, we have an extraordinary opportunity to create jobs and spur economic development and revitalization for the people of Sullivan County and the Catskills," Governor Pataki said. "Our plans for the Catskills would result in the creation of up to 50,000 new jobs and attract more than 30 million visitors annually to the region. This historic resort community was once home to more than a dozen first-class resorts and as we move forward, we will build on that proud legacy.

"I want to thank John O'Mara, who is concluding six years of service to the people of New York as our Chief Negotiator in the Indian land claim negotiations," Governor Pataki said. "The fact that we stand at the threshold of resolving each of the major Indian land claims in New York State is a testament and credit to his leadership."

The legislation submitted by the Governor today would implement the five settlement agreements that the Executive has negotiated and executed with the Seneca-Cayuga Tribe of Oklahoma, Cayuga Indian Nation of New York, Oneida Tribe of Indians of Wisconsin, Stockbridge-Munsee Community (a Band of Mohican Indians) and Akwesasne Mohawks. In addition to obtaining State implementing legislation of these settlement agreements, the State will be required to obtain federal approval as well. It is expected that federal legislation to implement these agreements will be introduced in Congress later this month.

Resolving the Major Land Claims in New York State

The purpose of the settlement agreements is to permanently resolve the remaining major Indian land claims to land or natural resources, and damages within the State. The agreements would end the decades of uncertainty about the status of the land by clearing land titles within Seneca, Cayuga, Madison, Oneida, St. Lawrence and Franklin Counties and eliminating the resulting economic and social hardships for tens of thousands of landowners, citizens and communities.

Establishing a Level-Playing Field between Indian and Non-Indian Vendors

This bill would also provide for agreements between the State and tribal governments on the sale of cigarettes, tobacco products, automotive fuel, alcoholic beverages and other tangible personal property or services when purchased by non-Indians from tribal vendors on or from such nation's or tribe's lands. The agreements will establish a more level playing field between Indian and non-Indian vendors, while furthering the interests of comity between the State and tribal governments.

"As we have seen from each of the five agreements that have now been reached, the most effective way to resolve retail pricing and sales tax issues is in a spirit of cooperation, not confrontation," Governor Pataki said. "Each of the agreements will ensure a level playing field for Indian and non-Indian vendors."

Creating Jobs and Spreading Economic Opportunity in the Catskills

This legislation will facilitate plans to build five casinos in the Catskills Region, which will create thousands of new jobs and provide a major boost to the region's economy. According to the State's Task Force on Casino Gambling's Report to the Governor, resort casinos within the Catskills Region -- with its proximity to New York City -- could attract over 31 million visitors annually.

The most far-reaching benefit of having casinos in the Catskills would be the new jobs created. Overall, the Task Force Report estimates that development of resort-style casinos in the Catskills Region would result in approximately 48,500 new jobs, including employment that is created in businesses other than casinos. These new jobs will be

realized in many industries such as agriculture, construction, transportation, wholesale and retail trade, hotels, entertainment and restaurants.

The bill also requires each tribe seeking to locate a casino in the Catskills to agree to collect and remit to the State all State and local taxes in connection with all sales made by all vendors (tribal or otherwise) of alcoholic beverages, cigarettes, tobacco products, automotive fuels and all other tangible personal property and services to non-members of the tribe or nation or, alternatively, to enter into a price or tax parity or trade agreement between the State and tribal government. The legislation also ensures that the interests of local governments affected by casino projects are protected through agreements with tribal governments, on a mutually satisfactory basis.

Finally, the bill provides for the amendment and ratification of the gaming compact between the State and Oneida Indian Nation of New York that authorizes the operation of the Turning Stone Casino, provided that, among other things, such amendment provides for the State to receive a certain percentage of slot machine revenue from which a minimum of 25% of the State's share from slot machines will be made available on an equal basis to Oneida and Madison counties and the affected towns within these counties.

Protecting the Interests of Local Governments and Property Taxpayers

The bill would protect the interests of local governments and taxpayers by holding localities in the land claim areas harmless from real property and sales tax losses and providing other funds to help them address economic impacts. Further, the bill would reimburse local governments for unpaid back property taxes owed by the tribes or their members. The bill would also hold the counties of Sullivan and Ulster harmless in the event that real property within either such county shall be held as "Indian land" within the meaning of the Indian Gaming Regulatory Act, 25 U.S.C. §2701, et seq.

"Throughout the entire settlement negotiation process, we have sought to keep local governments fully informed and made every effort to ensure their issues and concerns were addressed along the way," Governor Pataki said. "This legislation and the resulting agreements would make sure that the interests of local governments and property taxpayers are protected."

Specifically, the legislation provides for:

- An $8 million annual payment to be shared equally by the counties of Seneca and Cayuga, a $10 million annual payment to be shared equally by the counties of Oneida and Madison and a $2 million annual payment to be shared by the counties of St. Lawrence and Franklin;
- The counties of Seneca, Cayuga, Oneida, Madison, St. Lawrence and Franklin to be reimbursed for the principal amount any unpaid real property taxes on lands held by the tribal plaintiffs in the land claims;

- The counties of Seneca, Cayuga, Madison, Oneida, St. Lawrence, and Franklin to be held harmless for any potential future losses in real property taxes resulting from lands becoming Indian country as a result of the land claim settlements;
- The counties of Seneca, Cayuga, Madison, Oneida, St. Lawrence, and Franklin to be held harmless from any estimated losses in sales or compensating use taxes attributable to a real property tax exemption that results from a price or tax parity or trade agreement that the State enters into with a tribal government.

The bill would dedicate $10 million in casino revenues to support compulsive gambling treatment and provide substantial financial resources for environmental protection and community enhancements by establishing two new funding mechanisms for environmental projects in the region surrounding the proposed casinos as well as statewide. The legislation creates the "Catskill-Shawangunk Environmental and Community Protection Fund," which will provide up to $50 million to support open space land conservation, water quality improvement, municipal parks, historic preservation, heritage areas, agricultural and farmland protection, community protection and transportation improvements in the Catskill-Shawangunk region.

The bill would also require that ten percent of the State's share of the Indian casino revenues will be directed to the traditional Environmental Protection Fund for statewide environmental projects which will enhance the State's waterfront redevelopment, municipal parks, water pollution control and open space acquisition programs. Finally, the legislation requires that an environmental impact statement with full public review be conducted for each project in accordance with the State Environmental Quality Review Act. ###

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Legislators OK 5-casino deal

Sullivan vote key first step

Times Herald-Record/MICHELE HASKELL

The crowd applauds as the vote for casinos weighed over the negatives.

By Steve Israel
Times Herald-Record
sisrael@th-record.com

Monticello – At 5:24 p.m., as an orange sun set over the Catskill Mountains, a new era dawned in Sullivan County.

The county Legislature voted 6-3 yesterday to approve Gov. George Pataki's plan for five Indian casinos. They would all be built in Sullivan.

The vote, before a standing-room-only crowd of some 300 cheering and jeering supporters and opponents, is the first step toward the county's decadeslong dream – or fear – casino gambling.

It's also the most important step, say state and national politicians. Without a "yes" vote, the bill for five casinos would have died before it was introduced.

"It won't go anywhere without this," state Sen. John Bonacic, R-C-Mount Hope, said before the vote. He will sponsor the bill in Albany after he co-hosts one of two hearings on it scheduled to start later this month. If the land-claim-for-casino-bill is passed by the state, it must win final approval from Congress.

As they sat before New York City TV cameras, the legislators seemed to realize they were making history.

"It's time for this; it's been 30 years," Legislator Greg Goldstein said , echoing many of the 42 speakers during a two-hour public comment period that preceded the vote.

Several lawmakers invoked the history of the county that has seen its resort industry crumble from a heyday of 400 hotels to today's handful.

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"Our county must get out of the holding pattern we've been in for years," Jodi Goodman said.

"We can recapture what was once a lucrative market," added Jonathan Rouis, who stressed that casinos would bring "spinoff business" and retail outlets to a county where clothing stores are hard to find.

The three legislators who voted "no" said history could wait.

Kathy LaBuda won the most applause from those opposed to casinos.

"(The county) should not enter a fixed game where the state, Indian tribes and casino developers can only win and we can lose," she said, adding that casinos would increase crime, ruin families and create so much traffic, visitors would never get to smell the fresh air.

But Rodney Gabel and Chairman Chris Cunningham said they opposed the resolution for a different reason. The county should have used its leverage to win more concessions from the state, they said. After meeting with Sullivan County lawmakers last week, Pataki agreed to reimburse property taxes lost to tax-exempt Indian casinos and create a $50 million fund to protect the environment.

Cunningham said the county could have done better – even though the resolution calls for impact payments and "cooperation and assistance" from the state for the "design and completion" of schools and Interstate 86.

"This is bad negotiating strategy," he said. "Once we endorse something, it's hard to go back."

Yesterday's vote might have moved casinos a huge step closer to reality, but the debate isn't over.

Both sides vowed to carry their fight to Albany and Washington, D.C.

"We're going to get stronger," said Dick Riseling of Casino-Free Sullivan County, who helped lead the anti-casino fight.

"There was nothing the state could do without this," said developer Louis Cappelli, who plans to build a casino at the Concord. "But we have more work to do."

Sullivan legislators voted 6-3 for five-casino deal

The vote:
For the resolution to support five casinos:
Leni Binder, R
Greg Goldstein, R
Jodi Goodman, R
Ron Hiatt, D
Jonathan Rouis, D
Sam Wohl, D

Against:
Chairman Chris Cunningham, D
Rodney Gaebel, R
Kathy LaBuda, D

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STATE OF NEW YORK
SENATE HEARING

Sponsored by:

Senator John J. Bonacic, Chairman
Senate Standing Committee on Housing,
Construction & Community Development

Senator William Larkin, Chairman
Senate Standing Committee on
Racing, Gaming and Wagering

Senator Mary Lou Rath, Chairwoman
Senate Standing Committee on Tourism
Recreation and Sports Development

SUBJECT: Proposed land claim/casino legislation (S.2365)

PURPOSE: To receive testimony relating to the community development, construction, and housing impacts of Governor Pataki's proposed land claim/casino legislation. [Health, auxiliary life, Traffic, etc.]

DATE: Thursday, March 3, 2005

TIME: 11:00 a.m. to 2:00 p.m.

LOCATION: Sullivan County Government Center, 100 North St., Monticello, NY

CONTACT: Kate Glazer, Senator Bonacic's Office @ (518) 455-3181
John Emery, Senator Rath's Office @ (518) 455-3161

Oral Testimony is by invitation only and is limited to ten minutes, but may be extended upon request based on time considerations and upon the consent of the Chairmen. Written testimony will be accepted from interested parties through Friday, March 25, 2005 at 5:00 pm.

The Senate Standing Committees require that witnesses submit written copy of their testimony. It is also requested that all speakers bring with them fifteen additional copies of their testimony. Persons unable to attend the hearing are invited to send statements to:

Michael Avella, Esq.
First Assistant Counsel to the Majority
Room 430 Capitol
NYS Senate
Albany, NY 12247

Sunday, March 20, 2005

Bill Summary - A05159

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See Bill Text

A05159 Summary:

SAME AS Same as S 2365-A

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Rpld & add S11, add S10, amd S12, Exec L; add S17, amd SS470 & 471, T S99-h, add SS99-m & 99-n, St Fin L; amd S11-0715, En Con L; amd SS355 Ed L
Authorizes the settlement of the Seneca-Cayuga Tribe of Oklahoma, Cay Nation, Stockbridge-Munsee, Oneida Tribe of Indians and Akwesasne Moh Indian land claims; recognizes negotiated settlement of these land cl jurisdictional status of land.

A05159 Actions:

02/17/2005 referred to judiciary
03/16/2005 amend and recommit to judiciary
03/16/2005 print number 5159a

A05159 Votes:

A05159 Memo:

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Air quality grade clouds county's plans

By Brendan Scott
Times Herald-Record
bscott@th-record.com

Goshen – What does the state of Delaware have to do with a plan to widen Route 208 between Monroe and Washingtonville?

Plenty, planners say, when you factor in Orange County's failing grade on a new federal air quality standard. The rating lumps Orange with a large swath of the Eastern Seaboard and places the fate of its major transportation projects in the hands of dozens of agencies in five states.

"We're not ignoring our air quality issues," said David Church, Orange County planning commissioner. But, he added, "This has the potential to drag us into a bureaucratic morass the likes of which we've never seen before."

The controversy results from the Environmental Protection Agency's new minimal standard for fine particulate matter, the microscopic soot largely generated by power plants and diesel-fueled trucks.

In the short term, such pollution can cause asthma attacks or aggravate lung disease, according the EPA's Web site. In the long term, it can reduce lung function and lead to chronic bronchitis or premature death.

Thanks to increasing traffic, proximity to New York City and the presence of two large power plants in Roseton, the EPA decided last summer to consider Orange as part of an air quality region stretching from Massachusetts to Delaware.

That's even though Orange County's own measurements for dirty air – a reading taken regularly from atop a Newburgh area firehouse – have never exceeded the new federal threshold of 15 micrograms per cubic meter.

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The highest reading recorded at that location since 2000 was 11.5 micrograms, according to state statistics. That's compared with 16.7 in New Haven, Conn., the central monitoring station for the new air quality region.

The state Department of Environmental Conservation, which cites similar disparities in Rockland, Nassau, Suffolk and Westchester counties, failed in attempts to change their federal air quality designations. So, earlier this month, the agency filed papers in a federal appeals court, signaling its intention to sue on the counties' behalf.

Meanwhile, county officials have joined representatives from dozens of planning agencies trying to sort out how to operate under the new rules, which stem from the 1997 Clean Air Act.

Under the rules, each project or development that might add or reduce pollution must be considered for its potential impact on the entire region's air quality. Thus, widening Route 208, which might add traffic here, could affect the approval of similar projects in New Jersey or even Delaware, or vice versa.

Among local projects that Orange County worries could be affected: an interchange between interstates 84 and 87, a tunnel from the Orange Plaza to the Galleria at Crystal Run and a park-and-ride for Kiryas Joel.

"It's crazy," said Patricia Gilchrest, Orange County Citizens Foundation executive director. "We'd have no control over our own destiny. It takes long enough to get these projects approved."

An EPA spokesperson said the agency could not comment for this story because of the pending lawsuit brought by the DEC.

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Orange has diesel fume issues: study

By Paul Ertelt
Ottaway News Service
peottaway@aol.com

Albany – Orange County is a hot spot for diesel pollution linked to asthma, heart attacks, cancer and premature death, according to a new national study.

Orange was ranked No. 111 out of 3,109 counties nationwide and No. 9 out of the New York's 62 counties for health risks associated with diesel emissions, according to the report by the Clean Air Task Force.

The same report ranked New York state as the worst in the nation for diesel-related health problems and deaths.

Diesel emissions cause an estimated 21,000 premature deaths a year in the United States, making it a bigger killer than drunken driving or AIDS, according to the report.

In 1999, the most recent year for which data were available, trucks, buses and heavy equipment spewed more than 650 tons of soot into Orange County's air. That's enough to cause 21 premature deaths, 31 nonfatal heart attacks, 480 asthma attacks and 2,700 lost work days, the report concluded.

The report used the same researchers and the same methods used by the U.S. Environmental Protection Agency in its health assessments.

Peter Iwanowicz, chief policy officer for the American Lung Association of New York State, said Orange's booming population and heavy truck traffic contribute to the problem.

"Population drives commerce, which drives diesel use," he said.

Three major highways – Interstate 84, the New York State Thruway and Route 17 – cross the county.

Ulster and Sullivan counties also have relatively high health risks from diesel

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emissions, ranking 15th and 21st, respectively, among New York counties.

If a plan to locate five casinos in Sullivan County comes to pass, there will likely be an influx of diesel trucks and tour buses, Iwanowicz said.

Federal regulations that take effect in 2007 will require sharp reductions in emissions from new diesel vehicles, but the full impact of those regulations won't be felt for decades, Iwanowicz said.

"The truck that was bought yesterday is going to be around 30 years from now," he said.

The Lung Association said a number of steps can be taken to further reduce diesel emissions, such as requiring low-sulfur fuels and installing exhaust filters on school buses. Older buses that can't be retrofitted should be retired, he said.

The group also called for tougher enforcement of the state's anti-idling law. When the temperature is above 40 degrees, it is illegal to leave a bus or large truck idling for more than five minutes.

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Info for Researchers

CHRONIC LOWER RESPIRATORY DISEASE - DEATHS AND DEATH RATES PER 100,000 RESIDENTS

SOURCE: 2000-2002 VITAL STATISTICS DATA AS OF AUGUST, 2004
ADJUSTED RATES ARE AGE ADJUSTED TO THE 2000 UNITED STATES POPULATION

	DEATHS				POPULATION	CRUDE	ADJUSTED
REGION/COUNTY	2000	2001	2002	TOTAL	2001	RATE	RATE
REG-1 WESTERN NEW YORK							
ALLEGANY	26	41	36	103	50,298	68.3	61.8
CATTARAUGUS	47	49	46	142	83,399	56.8	48.6
CHAUTAUQUA	109	97	91	297	138,718	71.4	55.3
ERIE	486	448	495	1,429	946,625	50.3	39.7
GENESEE	41	30	32	103	59,967	57.3	48.4
NIAGARA	136	127	134	397	218,635	60.5	49.3
ORLEANS	27	24	25	76	43,940	57.7	56.6
WYOMING	21	27	26	74	43,070	57.3	56.6
REGION TOTAL	893	843	885	2,621	1,584,652	55.1	44.6
REG-2 FINGER LAKES							
CHEMUNG	74	73	64	211	90,704	77.5	62.4
LIVINGSTON	28	24	37	89	64,710	45.8	49.9
MONROE	270	254	288	812	736,215	36.8	33.9
ONTARIO	72	61	82	215	100,898	71.0	66.1
SCHUYLER	16	12	15	43	19,277	74.4	63.8

SENECA	21	17	25	63	34,845	60.3	52.9
STEUBEN	62	74	76	212	99,196	71.2	60.3
WAYNE	55	64	66	185	93,902	65.7	66.3
YATES	18	18	10	46	24,525	62.5	50.0
REGION TOTAL	616	597	663	1,876	1,264,272	49.5	45.3
REG-3 CENTRAL NEW YORK							
CAYUGA	45	50	70	165	81,412	67.6	57.0
CORTLAND	37	36	31	104	48,639	71.3	71.2
HERKIMER	49	42	30	121	64,170	62.9	45.3
JEFFERSON	47	44	53	144	110,212	43.6	47.7
LEWIS	17	14	24	55	26,941	68.0	62.7
MADISON	34	24	43	101	69,795	48.2	48.3
ONEIDA	200	188	147	535	234,635	76.0	56.4
ONONDAGA	246	228	235	709	459,288	51.5	46.5
OSWEGO	80	87	56	223	122,639	60.6	66.5
ST. LAWRENCE	78	75	100	253	111,385	75.7	73.2
TOMPKINS	34	32	33	99	97,998	33.7	42.7
REGION TOTAL	867	820	822	2,509	1,427,114	58.6	53.6
REG-4 NEW YORK-PENN							
BROOME	131	138	121	390	200,243	64.9	49.2
CHENANGO	26	37	41	104	51,192	67.7	56.0
TIOGA	22	29	27	78	51,535	50.5	48.9
REGION TOTAL	179	204	189	572	302,970	62.9	50.1
REG-5 NORTHEASTERN NEW YORK							
ALBANY	164	130	146	440	294,865	49.7	42.6
CLINTON	38	34	43	115	80,358	47.7	51.4
COLUMBIA	64	50	51	165	63,097	87.2	65.0
DELAWARE	19	19	27	65	47,615	45.5	31.1
ESSEX	23	33	22	78	38,725	67.1	52.7
FRANKLIN	34	30	30	94	51,025	61.4	60.0
FULTON	43	41	44	128	54,896	77.7	59.5
GREENE	37	25	29	91	48,373	62.7	51.2
HAMILTON	5	6	1	12	5,330	75.0	48.2
MONTGOMERY	28	32	29	89	49,474	60.0	40.1
OTSEGO	42	27	41	110	61,741	59.4	49.6
RENSSELAER	107	113	108	328	152,820	71.5	65.9
SARATOGA	78	106	96	280	204,276	45.7	49.4
SCHENECTADY	68	79	89	236	146,247	53.8	38.7
SCHOHARIE	14	33	22	69	31,747	72.4	61.5
WARREN	31	36	29	96	63,572	50.3	41.8
WASHINGTON	34	56	42	132	61,081	72.0	65.2
REGION TOTAL	829	850	849	2,528	1,455,242	57.9	49.4
REG-6 HUDSON VALLEY							
DUTCHESS	99	130	129	358	284,270	42.0	44.0

ORANGE	148	148	178	474	349,480	45.2	53.6
PUTNAM	20	24	18	62	97,125	21.3	27.7
ROCKLAND	90	86	88	264	289,430	30.4	32.3
SULLIVAN	51	39	51	141	74,048	63.5	57.7
ULSTER	84	108	89	281	178,372	52.5	49.3
WESTCHESTER	334	328	326	988	932,748	35.3	31.2
REGION TOTAL	826	863	879	2,568	2,205,473	38.8	38.2
REG-7 NEW YORK CITY							
BRONX	314	311	292	917	1,343,698	22.7	27.4
KINGS	434	465	469	1,368	2,479,923	18.4	19.7
NEW YORK	311	368	350	1,029	1,549,009	22.1	22.2
QUEENS	441	431	452	1,324	2,238,024	19.7	19.2
RICHMOND	145	130	175	450	451,373	33.2	35.4
REGION TOTAL	1,645	1,705	1,738	5,088	8,062,027	21.0	22.1
REG-8 NASSAU-SUFFOLK							
NASSAU	435	459	458	1,352	1,339,301	33.6	28.4
SUFFOLK	538	539	499	1,576	1,443,299	36.4	38.7
REGION TOTAL	973	998	957	2,928	2,782,600	35.1	33.2
NEW YORK STATE TOTAL	6,828	6,880	6,982	20,690	19,084,350	36.1	34.8

Questions or comments: phiginfo@health.state.ny.us
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Exposure to Traffic and the Onset of Myocardial Infarction

Annette Peters, Ph.D., Stephanie von Klot, M.P.H., Margit Heier, M.D., Ines Trentinaglia, B.S., Allmut Hörmann, M.S., H. Erich Wichmann, M.D., Ph.D., Hannelore Löwel, M.D., for the Cooperative Health Research in the Region of Augsburg Study Group

ABSTRACT

Background An association between exposure to vehicular traffic in urban areas and the exacerbation of cardiovascular disease has been suggested in previous studies. This study was designed to assess whether exposure to traffic can trigger myocardial infarction.

Methods We conducted a case–crossover study in which cases of myocardial infarction were identified with the use of data from the Cooperative Health Research in the Region of Augsburg Myocardial Infarction Registry in Augsburg, in southern Germany, for the period from February 1999 to July 2001. There were 691 subjects for whom the date and time of the myocardial infarction were known who had survived for at least 24 hours after the event, completed the registry's standardized interview, and provided information on factors that may have triggered the myocardial infarction. Data on subjects' activities during the four days preceding the onset of symptoms were collected with the use of patient diaries.

Results An association was found between exposure to traffic and the onset of a myocardial infarction within one hour afterward (odds ratio, 2.92; 95 percent confidence interval, 2.22 to 3.83; P<0.001). The time the subjects spent in cars, on public transportation, or on motorcycles or bicycles was consistently linked with an increase in the risk of myocardial infarction. Adjusting for the level of exercise on a bicycle or for getting up in the morning changed the estimated effect of exposure to traffic only slightly (odds ratio for myocardial infarction, 2.73; 95 percent confidence interval, 2.06 to 3.61; P<0.001). The subject's use of a car was the most common source of exposure to traffic; nevertheless, there was also an association between time spent on public transportation and the onset of a myocardial infarction one hour later.

Conclusions Transient exposure to traffic may increase the risk of myocardial infarction in susceptible persons.

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N Engl J Med 2005; 352:623-624, Feb 10, 2005. **Correspondence**

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- Frank, L. D., Engelke, P. (2005). Multiple Impacts of the Built Environment on Public Health: Walkable Places and the Exposure to Air Pollution. *International Regional Science Review* 28: 193-216
- Tosteson, D. C., Greenbaum, D. S., Lebwohl, B., Stone, P. H. (2005). Traffic and Myocardial Infarction. *N Engl J Med* 352: 623-624
- (2005). MI Onset After Exposure to Traffic. *Journal Watch Cardiology* 2005: 6-6

Comments and questions? Please .

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Peters, NEJM

Mid-Hudson fights for cardiac rights

NYC, N.J. throttling competition?

By Tim Logan
Times Herald-Record
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Warwick – Dr. Gerard Freisinger is sick of sending his heart patients to New Jersey.

But for years, whenever someone needed cardiac surgery, off to Jersey they went. In fact, when Freisinger himself had a bypass, he went to a New Jersey hospital, too.

Why?

As Freisinger puts it, "time is muscle," and for decades the closest heart surgery centers to much of Orange and Sullivan Counties have been many miles away, in New Jersey.

Now, Good Samaritan Hospital, in Suffern, wants to start cardiac surgery. It has cardiac catheterization and does emergency angioplasties, but its efforts to get to the next level are stalled.

Officials there blame a big New York City health network for the delay, which is tied to those hospitals in New Jersey.

This week, Good Samaritan will find out if its cardiac center will be on the agenda for the next meeting of a key state committee that rules on hospital expansions.

It's been trying to get a hearing for months. But recently Good Sam took its appeal public, hoping grassroots politics can trump what it calls the back-room efforts of New York Presbyterian Health System to stop its heart center.

"This is almost like a David and Goliath scenario," says Good Samaritan spokeswoman Deborah Marshall. "We're the little guys and we need to use every means possible to get our message out."

They've enlisted doctors and community leaders, bought dozens of newspaper ads and sent a mailing to every home in their service

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area – including much of Orange and Sullivan counties – urging people to call Gov. George Pataki and the state Department of Health to demand a hearing.

Their message is simple: the mid-Hudson needs better heart care.

Death rates from heart disease in Rockland, Orange and Sullivan counties far exceed the national average. And the farther one gets from a cardiac center, Good Samaritan notes, the higher the death rate.

A better program, closer to home, would improve patient care, Freisinger says.

"At least for Orange County, the mortality rate would decrease," he says. "It would decrease because of the closeness of care, and because an open heart program would attract many talented specialists."

Good Samaritan, which treats thousands of Orange County patients and is part of a system with hospitals in Warwick and Port Jervis, isn't the only local hospital eyeing heart surgery. Orange Regional Medical Center and St. Luke's Cornwall Hospital are also boosting their cardiac programs, though both are years away from open-heart programs.

And all three facilities are trying to woo patients in fast-growing southern Orange County. A cardiac center, and the prestige that goes with it, could help.

Neither St. Luke's nor Orange opposes Good Sam's application, and local doctors say there's enough demand here for at least two cardiac surgery programs.

That will be up to state health officials. And so far, they've been reluctant to certify even the one at Good Samaritan.

Spokesmen for the Department of Health did not return calls seeking comment Friday. But in the past they've noted that heart centers need a high patient volume to keep their skills sharp. Consequently, they've been stingy about new programs; so far there are just 32.

"With cardiac care, and particularly high-level cardiac care, the state has stringently held down the number of facilities," says Jeannie Cross, a spokeswoman for the Healthcare Association of New York State, a hospital group. "There's always been a high level of review."

But Good Samaritan officials say there's more at play.

New York Presbyterian has ties to several New Jersey hospitals that get heart patients from the mid-Hudson. A full cardiac center at Good Samaritan could hurt those programs.

So they don't want it to happen, says Dr. David Brogno, co-director of Good Sam's cardiology program. And, he says, they have the muscle to stop it.

Presbyterian's lobbyist in Albany is former Sen. Alfonse D'Amato, a Pataki ally. Brogno says DOH staffers had supported Good Samaritan's plan, but suddenly changed their minds last summer. That, he says, can only mean one thing.

"Al D'Amato's calling the shots here," he says. "Do the people of Orange and Rockland counties really want D'Amato and New York Presbyterian calling the shots on their health care?"

Presbyterian spokeswoman Kathy Robinson says the hospital supports the state's planning process, and that it wants good health care for the mid-Hudson.

Some local doctors say the best way to make that happen is a cardiac center at Good Samaritan.

"This whole thing has gotten very political," Freisinger says. "And it's not helping patients."

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Planners paint gloomy picture

By Steve Israel
Times Herald-Record
sisrael@th-record.com

Narrowsburg – How does a region that stretches from the icy Delaware River to the suburban streets of Monroe plan for the 50,000 new workers, thousands of new students and millions of new vehicles that five Sullivan County casinos will bring? Especially when neighboring Pennsylvania is set to open some 14 slot-machine halls?

It can't, according to the men who plan the future of Orange and Sullivan counties in New York and Pike County, Pa. That's what the county planners essentially said at a forum Friday night.

After all, Orange is already one of the two fastest-growing counties in the state, said Orange Planning Commissioner David Church. Even without casinos, the road that will carry most of the gamblers to Sullivan, Route 17, will be so jammed, it will get a flunking grade from government officials in 20 years.

"It's not going to work," Church told some 45 people at the forum sponsored by the Visioning Committee of the Upper Delaware River Corridor in the Sullivan West Elementary School gym. The impact of all of that traffic on emergency service vehicles is what really worries Church – especially when mass transit is not in the cards.

"We question whether they will be able to move," he said, stressing that Orange County has studied only the impact of the two proposed casinos that have filed impact statements.

The planners also wondered where the casino workers will live.

Because the median price of a home in Orange County is pushing $300,000, most won't be able to live there. So, like other noncasino

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employees, they'll head to Sullivan, where the average price is about half what it is in Orange – and affordable homes are hard to find.

"There's a single-family housing shortage in Sullivan, particularly workforce housing," Bill Pammer, the county's planning commissioner, told the crowd of mostly rural western Sullivan residents,

Ditto for Pike County, said its planning chief, Mike Mrozinski.

Sullivan also has a shortage of space in its schools, Pammer said, particularly in the eastern end of the county, where five casinos are planned and schools are already full.

The three planners painted a picture that was as icy as the wind blowing off the Delaware on this single-digit Sullivan night, especially because New York state relies on local, not regional, rule.

This makes planning difficult for an area like the Delaware River corridor, which includes the old railroad city of Port Jervis, the artsy hamlet of Narrowsburg and one of the fastest-growing spots in the Northeast, the Milford, Pa., area. That's one reason the citizens group that sponsored the forum, the Visioning Committee, was formed – to help coordinate planning.

"Our role is limited," Church acknowledged.

So it's essential that residents get busy on a grassroots level, the planners said – with or without casinos.

Towns should study their comprehensive plans for growth, Pammer said.

"Look at zoning and what density levels should be," he explained, adding that towns should hire experienced consultants to work with their volunteer planning boards.

And, stressed Church, residents from the open spaces of Sullivan to the crowded developments of Orange should strive to have one thing in common.

"You all should get involved in local government."

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Casino hearing draws talk of crime, traffic

Times Herald-Record/MICHELE HASKELL

Sullivan County District Attorney Steve Lungen testified at the state Senate hearing on casinos in Sullivan County Monday.

By Steve Israel
Times Herald-Record
sisrael@th-record.com

Monticello – Will crime soar if five casinos rise in Sullivan County?

"Absolutely, dramatically," Sullivan County District Attorney Steve Lungen told state Sen. John Bonacic, R-C-Mount Hope.

Will the Quickway turn into the slowway with millions of new casinogoers each year?

"At certain times of the year... it's already a parking lot," Orange County Executive Edward Diana testified.

And you don't have to be Einstein to know what more than 5,000 new students – the children of casino workers – would do to packed Sullivan schools.

"New buildings" and "a dramatic increase in school budgets," said Sullivan County BOCES Superintendent Martin Handler.

As for casinos upping the gambling addiction ante?

"I can almost guarantee it," said Ronnie Uss, executive director of the Recovery Center in Monticello.

This was the bleak picture of a Sullivan County with five casinos that was painted yesterday at Bonacic's hearing on Gov. Pataki's land-claim-for-casinos proposal. It was a picture that grows even bleaker if the state doesn't kick in millions – before the casinos open.

"If that partnership money isn't coming, the project may lead to a result we all regret," said Sullivan County Attorney Sam Yasgur during the hearing at the county Government Center.

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"There must be some form of upfront seed money from the state," said Lungen, who blasted county lawmakers – and their $85,000 casino study – for not consulting him and Sheriff Daniel Hogue.

"We don't have the infrastructure in place for three (originally proposed) casinos," said Sullivan Planning Commissioner Bill Pammer, one of several officials who called for an impact study of five casinos.

While representatives of Indian tribes and economic development officials spoke of the millions that some 50,000 new jobs casinos would bring – and the $15-million-per-year impact fee each casino would pay – local experts said they needed more. They told Bonacic and the lawmakers who joined him, state Sen. John Sabini, D-Queens, and Assemblywoman Aileen Gunther, D-Forestburgh, they want amendments for more funding attached to the bill.

"A third lane is not an option (for Route 17), but a necessity to preventing a traffic nightmare," said Diana, who asked for a fund for Orange County roadways and emergency services. That third lane would cost $500 million, said Orange Planning Commissioner David Church – for a state that says it doesn't have enough money to complete changing Route 17 into Interstate 86.

Hogue says his department will need $1.65 million the first year a casino opens – to ship out inmates who can't fit in his old, crowded jail.

This isn't about assurances from the state, said Yasgur. It's about guarantees.

"Schools are asking that their taxpayers not be asked to share the burden," said Handler.

Diana may head a county that won't get a casino, but he summed up the feelings of many of the speakers when he said this about the money he wants for Orange:

"It cannot be established on the backs of the taxpayers."

The next New York state Senate hearing on the land-claim-for-casino bill will be held Wednesday in Cayuga County. The first of three state Assembly hearings on the bill is scheduled for March 11 in Syracuse.

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Dave and Donna Colavito
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June 23, 2004

U.S. Dept. of the Interior,
Bureau of Indian Affairs
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

National Indian Gaming Commission
1441 L. Street, NW 9th Floor
Washington, D.C. 20005

Town of Thompson, NY
Town Planning Board
4052 Route 42
Monticello, NY 12701

Re: Public Comment Draft Environmental Impact Statement, St. Regis Mohawk Tribe Mohawk Mountain Casino and Resort

Thank you for the opportunity to provide input on this important project. The DEIS covers much ground, and there is also important ground that it does not cover. Enclosed are the text, supporting data sets and references, along with copies of most of those references. Where copies are not provided, easy access is afforded via the Internet.

I) ACTION ALTERNATIVES

As indicated in the DEIS (pgs. 3,42), the Action Alternatives were selected to best suit the needs of the tribe. What about the best interest of this community? I feel a bit like the chicken being asked to provide my thoughts on what would be in the best interest of the fox. My comments will primarily focus on what I believe to be in the best interest of my community.

Resolution of Tribal Land Claims:

The DEIS should contain a non-casino alternative for resolution of the Tribe's land claim. The No Action alternative does not address this. The public and the Tribe need to be

provided with all the information needed to assess what options exist. A public discourse, which covers sufficient breadth in this regard, seems to be lacking. Governor Pataki needs to make this a priority.

A brief consideration focusing on the Cayuga land claim in New York is instructive. As reported in the Times Herald Record on 6/11/04, a federal judge has previously awarded against New York and in favor of the Tribe for $247.9 million to be paid over 14yrs. Spreading this cost out over each employed worker in the state during the year 2003, results in $28.41 per worker, to be paid over 14 yrs. It is hard to image how this could be an excessive burden. Alternatively, as reported in the June 9 – June 15, 2004 edition of the Towne Crier, the Tribe is asking for $1.7billion in damages and interest for the past 200 yrs. Though substantially more than the federal award, spreading this cost out over each state worker comes to $194.82, the terms of which were not discussed in the article.

The point here is that resolving these land claims may prove to be more affordable than any of us realize. Additionally, given our Nation's history of genocide against Native Americans, there's a compelling argument for spreading these costs out over the entire U.S. Treasury, which holds the potential for further reducing the cost of any judgment per individual. The rationale here is that people alive today who are not members of the Tribe are no more responsible for this history of genocide and broken treaties, as Tribal members themselves, so why should any state – much less a single county – be forced to bear all the impacts associated with resolving these claims?

II) PUBLIC ACCESS TO DEIS

Access was insufficient and unacceptable. After calling the town, county and attorney for the project, I was informed that a single copy for the public was available in the Crawford Library located in Monticello, NY. When I expressed a need to obtain a copy in order to properly prepare my inputs, I was informed that Kristt Co., also in Monticello, was also in possession of the DEIS in order to provide photocopying services. My cost to obtain a copy from Kristt Co. would be $130.00. As someone who reviews a fair number of federal land actions, I can tell you that this is both an outrage and a disgrace.
First, when trying to access the DEIS in the library I was limited not only by my own work schedule and that of the library, but also by people who were reviewing this single copy upon my arrival. Second, without exception, federal agencies for whom I've participated in the public review process have provided access via either the Internet, CD Rom, or hardcopy, each available to anyone who needed it, and all of this free of additional charge to the public. And almost without exception several of these modes, if not all of them, were available to accommodate the needs of all interested parties.

If I didn't know better I might think that limiting the public's participation on this project was intentional. And after reviewing what I was able to review of the DEIS, I could understand why that might be the case. A series of public meetings providing sufficient coverage for all towns in the county to properly understand the DEIS is needed. This

limitation of the public's access, is alone, sufficient reason to extend the public comment period until all that need access, have access.

III) COMMUNITY COST/BENEFITS

The DEIS provides no quantitative cost/benefit analysis to the community. It asserts (pg.5) that it provides an assessment of two casino projects in addition to the Mohawk project, and that its finding is of no significant unmitigated impact. This lack of cost/benefit analysis leaves one wondering how such a finding could therefore be obtained, and is reason enough to scrap this DEIS and issue a new one that properly provides for this deficiency.

However, a cost/benefit analysis was performed by the Spectrum Gaming Group for these three casinos and its conclusion with regard to the net community benefit was not so direct (1). Although their report nets out a $7.5million surplus in the first year of full build-out, accompanying caveats point out that this surplus could prove to be a false comfort for reasons of inflation and because other costs that may be needed for the well-being of the community have not been considered. Such costs could arise from factors such as worker training needed to prepare county residents for casino jobs and tax abatements required to supply the affordable housing that will be required for the new residents of the county seeking those jobs, to name just two.

To the extent that one is comfortable with the determination of this surplus – and I am not, due to the caveats already mentioned – and in order to get a better feel for the implication of these caveats, we have calculated the impact of inflation upon this surplus in Table 1. The calculation was carried out under the two scenarios listed in order to give some sense of a range of possible outcomes. Though I am not an economist, it's my understanding that neither revenues nor profits necessarily track with inflation. In cases where market share may be of concern, it seems reasonable that businesses may refrain from passing certain costs on to the consumer.

Nevertheless, scenario "A" considers the case where both costs and that portion of benefits that can potentially increase with inflation do so. I say "potentially" here, because the conventional wisdom is that the county will receive a total of $15million in impact mitigation fees from each of the three casinos for a total of $45million. This portion of the benefit to the county will not increase with inflation since there is no credible contractual requirement for it to do so (But we will speak more of this in a later section). Further, as most of us are aware, the Cayuga project is not yet committed to generate more than the $5million impact mitigation payment agreed to previously.

Scenario "B" considers the more pessimistic case where costs increase with inflation while benefits do not.

$7.5 MILLION
SULLIVAN COUNTY CASINO SURPLUS*
REDUCTION WITH INFLATION

INFLATION RATE	5 YEARS	7 YEARS	9 YEARS
Scenario A - Costs and benefits increase ($45 million mitigation fee is fixed)			
2%	**$3,596,970**	**$1,924,287**	**$184,029**
3%	**$1,527,222**	**($1,120,270)**	**($3,928,994)**
Scenario B - Costs increase, while benefits remain fixed			
2%	**$661,891**	**($2,268,648)**	**($5,317,582)**
3%	**($2,964,307)**	**($7,602,713)**	**($12,523,598)**

* 2009 annual surplus from three casinos (benefit of $73.2 million less cost of $65.7 million): Spectrum Gaming Group, LLC report provided to Sullivan County in May 2004. Does not include costs that may be necessary to maintain the well-being of the County.

As you can see the effect of inflation is quite dramatic. It takes relatively little time and inflation for the $7.5million surplus to reduce, vanish, and then become a multi-million dollar loss each year for the county. In light of this, the DEIS needs to be revised to include various scenarios for this vanishing surplus and the effect that this will have upon our community. Our community needs to understand "before the fact", what the priority will be for cuts in vital services to the poor, elderly and disabled. Our community needs to understand "before the fact" what the implications will be for rising tax rates on these people and others living on fixed or severely constrained incomes. Indeed, all residents need to understand this. And it needs to be clearly spelled out now, since an after-the-fact "I'm sorry" will not make things all better for those adversely affected.

IV) EMPLOYMENT

Though several areas of the DEIS are problematic, few possess the grandeur of myth embellished by the sections on County employment. Simply put, on this topic the DEIS:

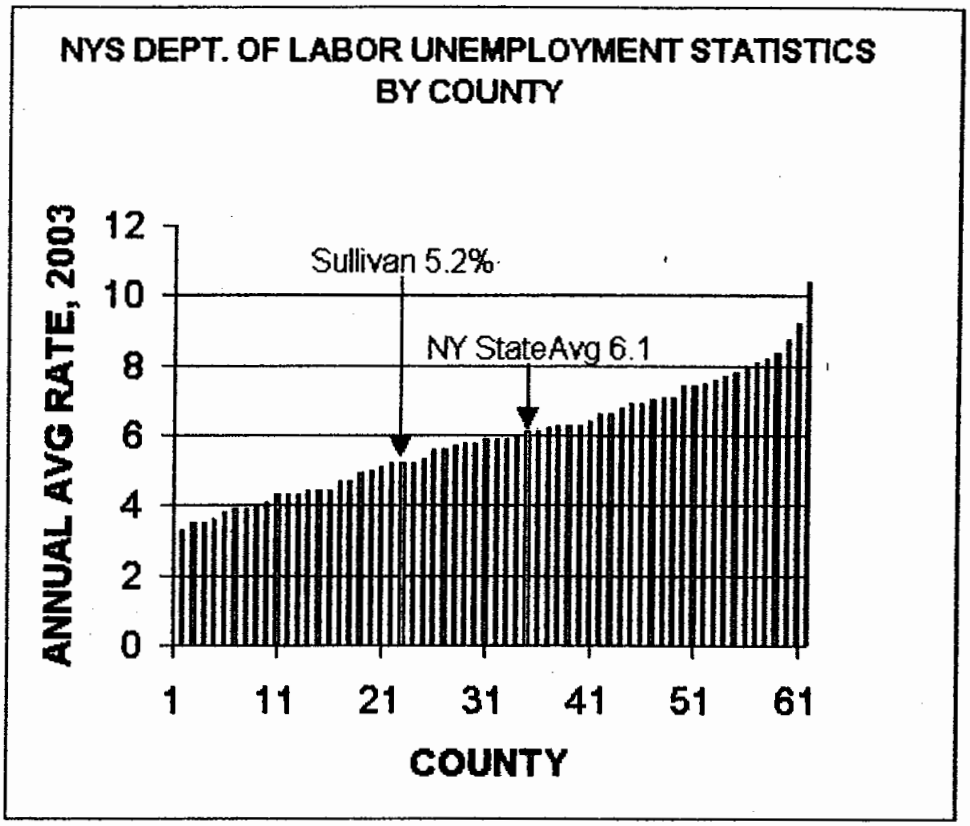
A. Omits current statistics
B. Makes unsupported claims
C. Uses inaccurate data
D. Uses data in an inappropriate manner

In DEIS sec. 3.2, Local Economic Needs, Table 3-1, "Regional Unemployment Rates" asserts that the Sullivan county rate is 100% higher than neighboring counties in the Mid-Hudson Valley. This seems to be a corner stone of the argument underlying the need for perceived casino benefit to the County, and is misleading in the extreme, for the following reasons.

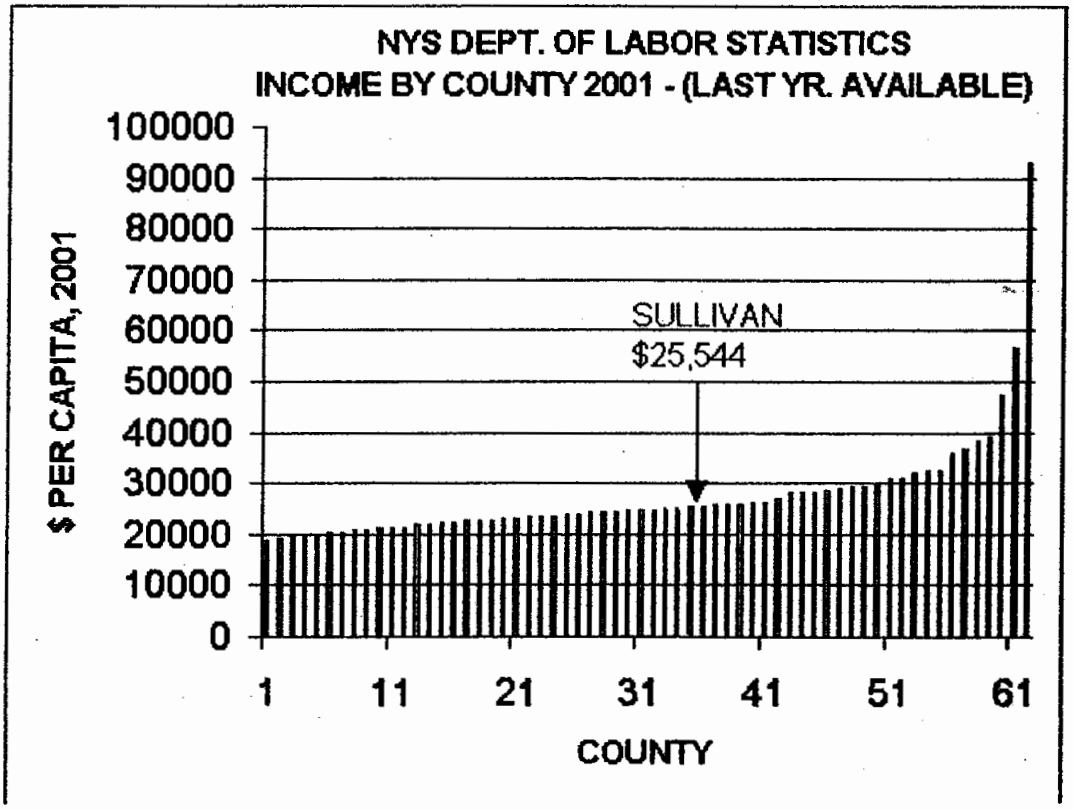
To make this claim, Table 3-1 compares employment for the single month of January across these counties for a period from 1995 through 1999. The New York State Department of Labor (NYSDOL) cautions on the inappropriateness of this approach since monthly statistics are not adjusted for seasonal variations and therefore may not provide an accurate assessment (2,3). One can clearly see this shortfall by substituting August data for January in Table 3-1. When doing so, the effect is dramatic; differences between Sullivan and the other counties become relatively small and Sullivan can even have a lower unemployment rate. Lastly, Table 3-1 omits several years worth of more recent data.

Graphs 1 and 2 below reflect average annual unemployment rates and per capita income for all 62 counties in New York State for 2003 and 2001 respectively, the most recent annual data available from the NYSDOL for each metric. Two comments are worthy of mention. First, Sullivan county unemployment, when compared to all counties in NY, is lower than about 2/3 of all the counties in the state. Said differently, the county was just about in the lower 1/3 of the population among all counties. Second, the per capita income for the county ranks in the upper half of all counties in the state. These numbers hardly paint a picture of destitution that the DEIS would have us believe.

Graph 1



Graph 2



In sec. 6.7.5.4, Socioeconomic Effects of the No Action Alternative, the DEIS again inappropriately cites a single month's unemployment statistic of 6.9% in 2002, also for the month of January, to infer a high unemployment rate for Sullivan County. The seasonal dependence of employment in this county is obvious to most people, and January is around that time of year when unemployment has historically peaked. Unfortunately once again selective amnesia seems to be operative by virtue of the omission of more recent data. My assessment here seems inescapable given that data is available up through January 2004 (4).

In sec. 3.0, Purpose and Need for the Project, the DEIS asserts that the 1999 unemployment rate for Sullivan county was 7.9%. Though I'm delighted that we've begun to use something beyond isolated monthly statistics, my delight is short-lived since, judging from the NYSDOL (4), the DEIS data reported here is false. The average annual unemployment rate for 1999 was 5.9%, not 7.9%.

Returning to sec. 6.7.5.4, Socioeconomic Effects of the No Action Alternative, the DEIS asserts that employment in Sullivan steadily decreased since 1990 and is currently at 28,000. Again, referring to the NYDOL (4), this is false. Currently the most recent average annual data, 2003, suggests that county employment is not 28,000, but rather it is 31,000. In keeping with the spirit of the DEIS, I'd add that for the most recent monthly data, April 2004, the employment level is 30,600. Additionally, the average annual county employment has increased year over year consecutively for the past three years and 2003's level reflects the highest it's been in 13yrs. Further, comparing the county to itself for the first four months of 2004, one observes that the employment level for each of these months has also increased year over year, consecutively for the past three years. January 04, February 04 and April 04 are each at the highest levels they've been for the past 30yrs., while March 04 was at the highest level it's been in 14yrs.

Unfortunately, the DEIS treatment of the county labor force shares a similar fate of gloom and doom as just discussed for unemployment. The DEIS asserts that "unemployment appears, at a 5% annual rate for 2001, to be quite low but it only exists because of this labor force shrinkage in the face of population growth." ..... They go on to say "another 3,200 should have been in the labor force [2001] but had left the area due to the lack of gainful employment."

Well, my question is "which is it", because you can't have it both ways. People who live in the county but work outside the county, as I do, are not and should not be counted among the unemployed. People who leave the county to live elsewhere in order to find work no longer contribute to county unemployment, but neither do they then contribute to the county population.

State Labor Force statistics for Sullivan County (4) are as follows:

The most recent average annual labor force data is for 2003, and it reflects the highest county labor force in the past 9yrs. as well as an increase in each consecutive year for the past 3 yrs. Additionally, comparing the county to itself reveals that in each of the first four months of 2004 the monthly labor force has also increased in each consecutive year for the past three years. Further, the labor force for January 04 is the highest it's been in 30yrs., the February 04 is the highest it's been in 8yrs., March 04 is the highest it's been in 13 yrs. and April 04 is the highest it's been in 11yrs.

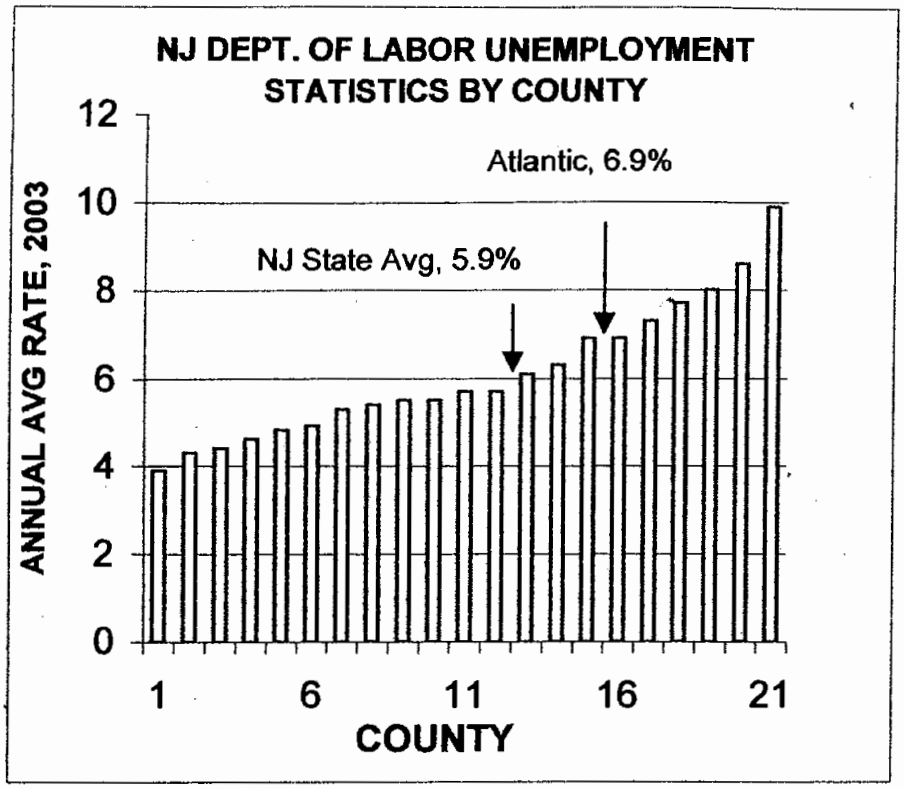
The DEIS uses Table 6.6 as the basis for its claim that county population is rising yet more and more people cannot find work. I have another question. Where's the supporting evidence for this claim, because Table 6.6 is not convincing? As we have just shown, Sullivan County employment levels are in fact not decreasing.

So to summarize the employment front over the past several years in this county:

A. The labor force is up
B. The employment level is up
C. If any discernable trend for unemployment exists, arguably the average annual unemployment is trending near 30yr. lows. The same can also be said for the first four months of 2004 (4).

So the really big question is, WHY DO WE NEED CASINOS? Because the employment dog just doesn't hunt.

It's instructive to revisit the NYS unemployment picture again for 2003 (Graph 1). Recall that when viewed for all 62 counties, Sullivan appeared in pretty decent shape. It's also instructive to contrast this situation with that of the state of New Jersey shown in Graph 3.



In particular, the average annual unemployment is comparable for both states with NY at 6.1% and NJ at 5.9%. What's striking is the comparison of Sullivan County with Atlantic County, NJ. While Sullivan enjoys nearly a full percentage point lower unemployment relative to the NYS average, Atlantic County by contrast is a full percentage point higher than the NJ state average. While Sullivan experienced a lower unemployment rate than nearly 2/3 of NY's 62 counties, Atlantic County, NJ experiences a higher unemployment rate than nearly 75% of NJ's 21 counties.

V) LOCAL AGREEMENT

Tort Liability/Limitation of Waiver of Tribal Sovereignty:

Appendix Volume II of the DEIS describes the agreement between the Tribe and the County of Sullivan. The tribe will carry insurance with general liability limits of not less than $10million. per occurrence and the Tribe agrees to waive sovereign immunity from unconsented suit up to the limits of this insurance.

The DEIS needs to explain the implications of this sovereign immunity waiver insurance cap and what this could mean for residents of our County. Residents need to understand what they are giving away. If someone is seriously injured due to negligence associated with operation of this casino project, what recourse exists for the injured party should Tribal sovereignty be invoked?

Terms of Termination:

The terms of termination provide for an automatic renewal of the County's agreement with the Tribe every seven years under the single proviso that gambling continues to be offered to the public. As I have mentioned in my earlier remarks concerning cost/benefit, there is no requirement to increase impact mitigation fees, should such an increase prove necessary.

As a resident of this County, I am left to wonder why my neighbors and I are not only left to assume all the risks, but to do so indefinitely. I am also left to wonder what the elected officials of our County are thinking, and why they are placing those who they have sworn to serve at such disadvantage? Are they, and those who are pushing for this project, committed to remain in the county, or do their plans involve relocating elsewhere?

VI) TRAFFIC/ROADS

The DEIS secs. 2.21, 5.10.1, 6.8.1.10 and Appendix Volume II discuss the traffic situation. I found four points particularly noteworthy with respect to Rt. 17. The DEIS findings here are:

A. 23million gaming visits per year are anticipated
B. 80% of this is expected along Rt. 17 from the east
C. Rt. 17 has an ideal capacity of 2,250 vehicles per hour per lane
D. A 50% reserve capacity exists on Rt. 17 near exit 105, the primary exit for the project.
E. Concludes No Significant Impact on Rt. 17

Anyone who travels Rt. 17, as I do through Middletown each day, understands - as recent press accounts also attest (5) - that Rt. 17 is already congested. Just try exiting Rt. 84 onto Rt. 17 west and move past the exit for the Galeria. This situation has gotten worse with the recent increase in speed limit to 65 mph. We're talking heavy traffic even in the off-season.

2,250 vehicles/hr./lane works out to a vehicle passing by each 1.6 seconds. As some may recall from their driver training, even at 55mph a car requires nearly 300 ft. to stop, while trucks require even more. And since at 55 mph we're traveling at 81 ft./sec., 1.6 sec./vehicle works out to 130 ft between vehicles. I am not a traffic engineer, but I must wonder about what ever happened to the concept of a safe stopping distance. Rt.17 is already a butcher shop with road kill increasing by the year. I can routinely count multiple fresh Deer kills on a single day just in the 20 miles or so from my place to Middletown. It stands to reason that a significant increase in motor vehicle accident rate is in the offing, though I could not find any discussion of this in the DEIS or how our automobile insurance rates might be affected. With anywhere near 23million gaming visits per year, they'll have to be affected. The DEIS needs to include insurance rate increase projections for this potential impact so the public can make informed decisions,

assuming that the public's input on this project is something more than just perfunctory compliance with National Environmental Policy Act.

The DEIS uses this 2,250vehicle/hr./lane figure as the basis for its claim that 50% excess capacity exists on Rt. 17 near exit 105. What about all those exits east of exit 105 where 80% of those 23 million gaming visits/year are supposed to come from? What about through Orange County where over a year ago the Times Herald record (May 06, 2003) reported that Rt. 17 was already packed, nearing capacity through Goshen even back then? What about bad weather? What about traveling over the Shawangunk Ridge, particularly as it is regularly beset by fog and ice at various times of the year? What about the concerns of Ulster County's planning director reported on in the same article, when he described Rt. 17 traffic as a major regional concern?

How can we responsibly speak of an ideal capacity of 2,250 vehicles along Rt. 17 without addressing these basic characteristics of Rt.17? The DEIS fails to do this, and this must be done.

The DEIS also needs to consider traffic from the north/east along the Thruway to Rt. 209. We need to know what the impacts will be on sensitive areas adjacent to the Shawangunk Ridge. And Rt. 209 is the primary artery through this region.

We need to know what happens after Rt. 17 gets converted to I-86. The DEIS needs to discuss what the impact will be should its projections prove to be overly rosy, as anyone who travels this route regularly knows they must be. The DEIS discusses improvements for local, county and state roads, but not federal roads. Who will pay for Rt. 17 upgrades, and how long will they take, should they be needed?

This is a regional issue. It is not an Exit 105 issue. To imply otherwise is an insult in the extreme.

VII) LAND USE/ZONING/GROUND WATER

DEIS sec. 5.01 asserts there's no need to evaluate Land Use/Zoning effects beyond a 1 mile radius, while sec. 5.4.7 discusses government controls on growth and references Town of Thompson and County wide Comprehensive Master Plans. Secs. 5.6.1 and 6.3.1. touch upon the present ground water situation and impacts thereon by this project; the bottom line conclusion is that ground water supply should not be much of an issue. Sec 6.5.1 of the No Action Alternative goes on to assert that if the project does not proceed, there is no major development presently progressing in the Town of Thompson.

The refusal of the DEIS to evaluate areas well beyond a 1 mile radius, and its conclusion that ground water resources should not be adversely impacted because the project site would be in good shape, are emblematic of what I will generalize to be my largest concern with this project, namely, its failure to acknowledge the scope and breadth of regional change, when doing so may highlight reasons why proceeding with it may be

detrimental to our county and the region. I can think of no better reason than this to justify scrapping the DEIS and starting over. Let me expand on this.

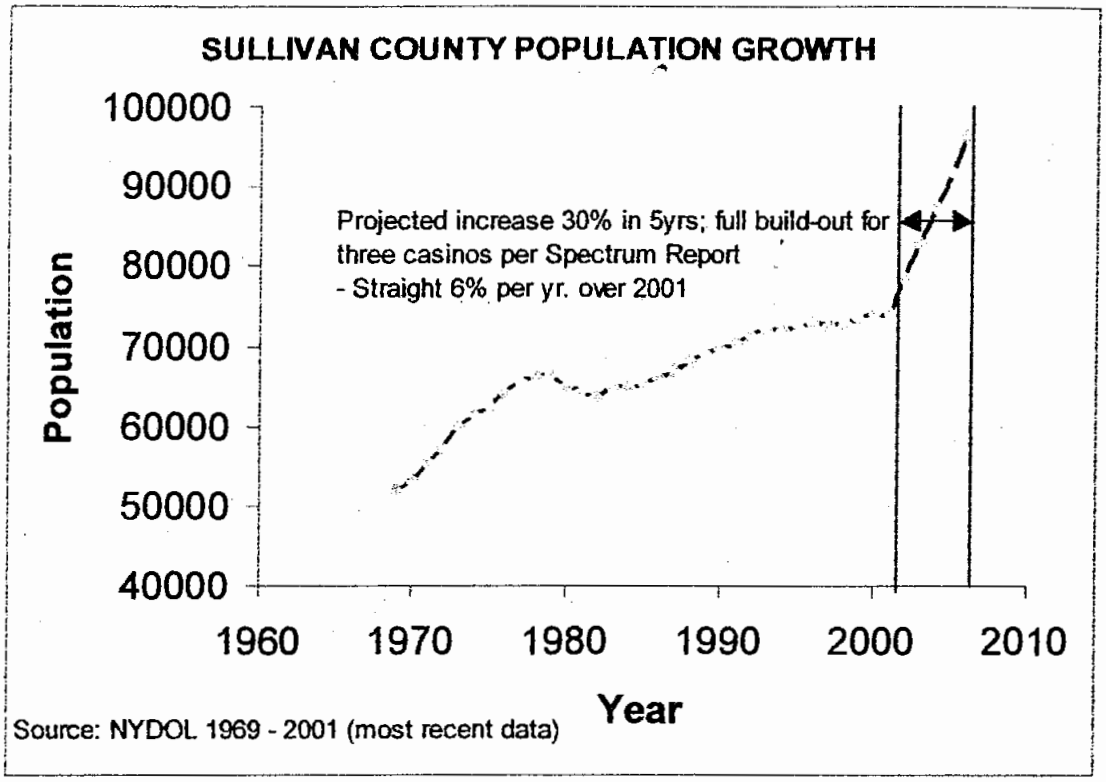
Of course casinos in our county will have long reaching affects well beyond a 1-mile radius from the project site. Consequently and water resources and other vital services, are therefore potentially at risk. One only need to consider that the County Master Plan Revision only began last month and is scheduled to continue through February 2005. So a critical question for our county is one that will have ripple effects throughout the region. Namely:.

How long will it take to have the Revised County Wide Master Plan reflected in the zoning for each of the 15 towns comprising our county?

The short answer is, not nearly in enough time to stave off a number of the undesirable affects of this project. With development already exploding in the county, what is to be of or our water resources? What protection is afforded to us? I can tell you as someone who draws his water from a well, the short answer here, is none, at least not if you're currently looking to the Town or the County for help. I was educated to this affect at a recent Town Planning Board meeting. So what happens between now and the time when the zoning laws are updated – assuming they properly capture the concerns I discuss here? What happens if your well runs dry? Is the town pro-actively looking to address the water problem for those of us who are already here? Two more short answers, "you're stuck" and "no". It is entirely inconsistent with life experience to expect the free market to slow down while folks at risk, be they the poor, the elderly, the young who may not know better, are given a fair shake. If you believe otherwise, I have a bridge to sell you.

Graph 4 looks at county population over the past 32 years, along with the projected population increase anticipated after full build-out for 3 casinos in our county. I've taken the projected estimated increase of 30%, along with the 5yr. time frame for full build-out through 2009 (I've shifted the build-out period in time on the graph merely to show continuity with the preceding period), from the Spectrum Report mentioned earlier (1), and simply linearized it as a 6% increase year over year.

Graph 4



As you can see, this rate of population increase is without precedent. It amounts to "shoe-horning" in a very large number of new residents over a relatively short period of time. The potential to adversely affect the quality of life for many of us, should be clear. There simply isn't the room left in this county to absorb this sort of increase, let alone that from gaming visitation, without dramatically impacting the very reason why many who've moved here voluntarily, have done so. And the risk to those less fortunate seems to be -- pardon the pun - a crapshoot.

As mentioned earlier, See 6.5.1 of the No Action Alternative goes on to assert that if the project does not proceed, there is no major development presently progressing in the Town of Thompson, a tacit endorsement in the salvation that Casinos will bring to our county. Well, if by "major development" they mean creating a need for far more jobs than the current level of county unemployment can absorb several times over (1, 4) thereby further accelerating the already hot pace of the current seller's market for real estate, with all the unintended consequence of driving up rental rates at the expense of those least able to afford it; increasing traffic to nightmarish proportions, all while placing essential resources and quality of life at risk; well, then I guess they'd be right.

I suppose the new Home Depot, Staples, construction of the new Performing Arts Center construction of the new Crystal Run Health Care Center within the new Emerald Green

Corporate Park, also under construction, just won't reek sufficient havoc to deserve even honorable mention.

VIII) COUNTY MEDICAID COSTS/ENVIRONMENTAL JUSTICE

Sec. 6.7.5.4 points out the high Medicaid costs for Sullivan County, equates this situation with a lack of quality jobs, and suggests casino related job creation is the answer. Sec. 6.13 considers environmental justice issues highlighting the need to avoid adverse impacts to low income and/or minority populations. It goes on to indicate that the county minority population is well below that existing on a national level and therefore concludes that an adverse environmental impact to minorities, by definition, will not ensue. It further goes on to say that there's nothing about the project that can be expected to adversely impact members of the minority community or the county's low-income group.

That Sullivan County's Medicaid costs are high is undeniable. Per capita spending is much higher than that of neighboring counties as the 1998 data on pg. 238 of the DEIS shows. While Sullivan was about $1100, other counties in the region ranged from about $600 to $850. And this is clearly an important issue for all of us. Whether casino jobs will significantly ameliorate the problem is quite another matter. Consider that per capita Medicaid spending for 2000, the most recent annual data (6), was $1185 for Sullivan County, $1175 for the state of New York and $1824 for NY City. To my knowledge no one is proposing building a casino in Central Park in NY City in order to address its Medicaid costs. But more importantly, the county's own study (1) points out that many of the county's poor – the elderly; disabled; and single parents, who for a variety of reasons, are unable to work for extended periods of time, are not be expected to come into the casino job market.

That the county's relatively low rate of minority population, as compared with the national level, is by itself a reason to exonerate the project from any Environmental Justice adverse impact seems a hollow argument. It may be legal, but is sure doesn't seem right. Further, since it is self-evident that an important component of the low-income population comprises the very poor, and since as mentioned previously, these folks are not likely to come into the casino job market, the issue of an Environmental Justice impact on this group is, in my view, very much an open question. The DEIS must consider realistic scenarios of pricing pressures on the poor, disabled and others forced to survive on relatively low fixed incomes. More specifically, if one believes the well-touted rhetoric that casino jobs will be relatively high paying, then one needs to acknowledge the likelihood of increased labor cost pressures. And since high housing demand is a foregone conclusion, the DEIS needs to assess what the effect will be on the poor from either rising property taxes or increases in rents that they can no longer afford to pay.

IX) EMERGENCY MEDICAL SERVICES/ADDICTION

Sec. 6.9.1.9 of the DEIS suggests that emergency medical healthcare should not be much of an issue, and that Catskill Regional Medical is plenty capable of handling healthcare emergencies that may result from the project. .

However, as reported recently in the press (7), Catskill Regional Medical Center is under tremendous financial pressure and layoffs seem imminent. The DEIS needs to rethink its position on the potential for adverse significant impacts here. Clearly additional resources would be needed should Catskill Regional's present circumstances persist.

The DEIS rightly acknowledges the need for increased social services for the County with the advent of casino gambling. As those familiar with Senator Frank Padavan's Legislative Report (8) know, services for problem gamblers are already severely deficient within New York State. Ample evidence exists (1) pointing to the likelihood of major increases in personal bankruptcies with the introduction of casino gambling. But the DEIS does not go much beyond stating that the Recovery Center provides the "Backbone" for social services within the county. It does say that revenues for the Recovery Center are derived from private donations, federal and state funding and fee for services by clients and that no revenues are derived from the county. The DEIS must lay out a time-line for appropriation of funds, hiring of additional professionals, and determine whether additional facilities will be needed and what portion of these costs, if any, will need to be borne by the county.

X) CLOSING REMARKS

I hope I have given sufficient cause to demonstrate the insufficiency of this DEIS on this matter of importance to the community. Whether comments provided today will receive the full consideration of their credence, or simply procedural lip service in accordance with the NEPA process, only time will tell. I for one will be looking to review all the public comment received on this DEIS, as I believe I am entitled to do under the Freedom of Information Act. I want to know whether our town officials are sufficiently flexible and courageous to exercise the type of leadership that may be called upon to address the rising tide of dissention against casinos in our county. I simply must believe that the road to casinos in our county began with good intentions. Whether or not my belief in those good intentions is well founded will be determined in the months ahead as more and more of our elected officials learn of the reservations that many of us have with the path we are on.

Respectfully,

Dave Colavito
Donna Colavito

PUBLIC HEARING REFERENCES: Comment Mohawk Casino June 23, 2004

REFERENCES:

1. Planning for the Future: Analyzing the potential economic impacts of Class III casino hotels on Sullivan County, NY prepared for Sullivan County Legislature by Spectrum Gaming Group, LLC (5/04) (need copies p. 8, 9).

2. NYS DOL Labor Market Information
   - Technical Notes: footnotes therein

3. NYS DOL Labor Market Information
   - Data: Frequently asked questions
     See: what is seasonally adjusted data and why do we examine it.

4. NYS DOL Statistics: Unemployment rate, labor force, employed, unemployed (1974 – 2004)

5. Times Herald Record (5/17/04) front page, p 1-3 Traffic, etc… 5/17/04

6. New York State Dept. of Health

7. Times Herald Record (6/9/04) Hospital Layoffs Possible

8. § IX. Problem Gambling Treatment in New York State. All Gambling All the Time: Turning the Empire State into the Gambling State. A legislative report by Senator Frank Padavan.

TABLES:

1. Table 1: Effect of Inflation on Surplus

GRAPHS:

1. Graph 1: 2003 Unemployment by NYS Counties

2. Graph 2: 2003 Per Capita Income by NYS Counties

3. Graph 3: New Jersey 2003 Unemployment by County

4. Graph 4: Sullivan County Population Trend

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November 5, 2004

Town of Thompson, NY
Town Planning Board
4052 Route 42
Monticello, NY 12701

U.S. Dept. of the Interior,
Bureau of Indian Affairs
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

National Indian Gaming Commission
1441 L. Street, NW 9th Floor
Washington, D.C. 20005

Re: Mohawk Mountain Casino, Caesar's Entertainment, FEIS

A. FAILURE OF THE PLANNING BOARD TO SATISFY SEQRA "HARD- LOOK" STANDARD AND IGRA REGULATIONS THROUGH DELEGATION TO THE DEVELOPER

Examination of the Town of Thompson Planning Board (PB) file, in reference to the above casino and attendance at public proceedings of the PB regarding the casino by myself and other members of the Casino Free Sullivan County demonstrates the failure of the PB, as lead agency under the State Environmental Quality and Review Act (SEQRA) to properly address the purposes of the statute in protecting the interests of the community as a whole in understanding, as stated in SEQRA, "the ecological systems, natural, human and community resources important to the people of the state".

Such conduct is contrary to the "hard-look" standard required by SEQRA and should not be relied upon by the Bureau of Indian Affairs (BIA) and the National Indian Gaming Commission in administering the Indian Gaming Regulatory Act (IGRA). Under the IGRA the Secretary of the Interior must make a determination that gaming on newly acquired lands would not only be in the interest of the Indian

Tribe and its members, but "would not be detrimental to the surrounding community". Instead, as drafted by the project applicant and accepted by the PB in the FEIS "The purpose of this Project is to serve the overwhelming health, welfare and economic needs of the Tribe, whose home is now on the northern rural border of the United States. The Project will provide a secondary benefit to the recessed economy of Sullivan County." (DEIS pg. 42, FEIS pg. 45).

Most important the review process failed to consider the likelihood that the project would be inconsistent with community values and replete with adverse environmental impacts. In particular, a determination by the PB to accept the FEIS as drafted by the project sponsor does not adequately address the public's concerns regarding adverse environmental impacts and is simply a rubber stamp of the applicant's stated purpose. As the lead agency, the PB must assume responsibility for the acceptability of the FEIS and must not, as demonstrated here, simply adopt the responses by the project sponsor to the concerns voiced by members of the community without independent scrutiny, deliberation and review and where appropriate, revision of any responses offered by the project sponsor.

A brief review of the recent history regarding the acceptance of the FEIS by the PB highlights the concern that, the FEIS as presently constituted, represents only the thinking of the project sponsor and the interests of the St. Regis Mohawk Tribe and its sponsor, Caesar's Entertainment. When reviewing the table of contents of the FEIS the date of September 22, 2004 is given for the PB response to public comment on the DEIS. On that date, the PB was not in possession of the project sponsor's draft responses to public comments and did not deliberate or review the public comments. The PB received the Responsiveness Summary (RS) on or after September 30, 2004, as is indicated by the date appearing above the RS in the FEIS. Attached to the project sponsor's RS is a resolution calling for the adoption of that summary, dated October 5, 2004. However on that date there was no meeting of the PB, with the next meeting having occurred on October 13, 2004, at which time the matter adjourned without comment until October 27, 2004. On October 27, 2004 the PB found that the FEIS was complete without any discussion of the RS. On October 28, 2004 Barbara Garigliano, the attorney for Caesar's Entertainment corresponded with the PB chair and forwarded, upon request of the PB, the PB's resolution of October 27, 2004, along with a hard and CD copy of the FEIS and supporting appendices to other involved agencies. The attorney also informed the PB chair that a Notice of Completion will be published in the state wide Environmental Notice Bulletin and that proof of publication will be forwarded to the PB. In addition, Ms. Garigliano also informed the PB chair that the U.S. Department of the Interior, BIA, has also accepted the FEIS as complete (although our correspondence with BIA confirms their receipt of the FEIS on 10/29/04) and has arranged for publication of a Notice of Availability on the Federal Register. Ms. Garigliano then requested that the supervisor of the Town of Thompson, maintain the FEIS and Appendices on file and available to the public. It should be noted that the PB Chair refused to make the FEIS available to the public until after the receipt of Ms. Garigliano's letter, although the PB clerk did make available on

10/08/04 (although she was later informed by Ms. Garigliano that this not have been made available on that date) the Comment and Response section along with the RS, which is the same as that included within the RS in the FEIS now available to the public

What the foregoing timeline demonstrates is that the SEQRA process, at its most critical stage is controlled entirely by the attorney for Caesar's Entertainment who not only provides the draft FEIS which is adopted by the PB in its entirety without independent review, but prepares and drafts the resolutions adopting the RS to the public's comments as well as the final Resolution and Notice of Completion. Indeed when I have contacted the Town of Thompson to ask about the status of the DEIS and FEIS I am consistently referred to the attorney for the project sponsor, who at first I thought was the attorney for the PB.

What follows is an enumeration, by topic of the inadequacy of the responses made to the comments by the public in the DEIS and now included in the FEIS RS. Please note that these are the same comments I made in my earlier letter of October 15, 2004, which the PB clerk indicated would not be included within the PB file.

1. Also refer Colavito: oral testimony and written submission of public comments to the Town of Thompson Planning Board, BIA and NIGC at the public hearing of June 23, 2004 on the DEIS, St. Regis Mohawk Tribe Mohawk Mountain Casino and Resort.

B. WASTEWATER

1. Response I(3) is inadequate since it assumes NYSDEC approval of the Mohawk Mountain Casino Resort on-site wastewater treatment plant. Under SEQRA this unlawfully delegates the issue of propriety of the on-site plant to some agency other than the lead agency. This is important since the absence of an on-site plant could cause adverse impacts resulting from the discharge of wastewater to the Kiamesha Lake Sewage Treatment Plant.

C. TRAFFIC

1. Response I(4) acknowledges concerns over traffic-related impacts on Rt. 17 by the Orange County Department of Planning (OCDP) and the NYS Thruway Authority. It does not acknowledge that OCDP concerns have been addressed.
2. Response I(6) contains the key underlying assumption that 75% or more of all bus trips will be taking place during off-peak hours and that therefore the portion of the Queue Analysis, sec. 6.81.4 is adequate. This assumption hinges upon the public's response to off-peak scheduling of charter bus trips by the casino and incentives offered by the casino to line haul carriers which are passed along to the

public. It also hinges upon the same distribution of bus trips across peak and off-peak hours during peak season as compared with off-peak season. The extent to which the absolute number of bus trips increase during peak time of day during the "off-season" (even in the presence of an overall decrease in the number of bus trips), will determine the extent to which the Queue Analysis is deficient. This needs further examination to determine the extent to which Queue time during the off-peak season will be problematic.

D. COST/BENEFIT

See Preliminary Remarks/Public Access

1. Response I (8) references a new report entitled "Comparative Analysis of Spectrum Gaming Report Regarding Incremental Public Service and Public Infrastructure Costs of Casinos in Sullivan County, New York", dated August 2004 (Comparative Analysis). This report is contained in App. Vol. V, Tab 61, and attempts to reconcile inconsistencies between "Planning For The Future: Analyzing The Potential Economic Impacts of Class III Casino Hotels on Sullivan County, New York", prepared for the Sullivan County Legislature by the Spectrum Gaming Group, published April, 2000, (Spectrum Study)", and the "Economic Analysis of Incremental Public Service and Public Infrastructure Costs of Casinos in Sullivan County, New York", dated 2003 (Economic Analysis Report of 2003) contained in the DEIS. And though comment I(8) requested only that the economic impact analysis of the Spectrum Study be included in the DEIS, Response I(8) goes beyond this request by making claims to the validity of the Economic Analysis Report of 2003. This support of the Economic Analysis Report of 2003 is then referenced in subsequent Responses, e.g., II(1). Since such is the case, it's important to point out some of the inadequacies of Response I(8) as they relate to subsequent Responses, here.

    a. The Economic Report of 2003 omits indirect impacts such as costs for worker training and tax abatements that may be needed for the affordable housing necessary for the increase in County population required to support casino jobs. These omissions are an important component used to justify the current proposal for fixed impact mitigation fees and justification for their omission has not been analyzed.
    b. Response I(8) considerations of inflation, per capita expenses for new residents, percentages of households with children and impacts on local communities other than the Town of Thompson as "questionable assumptions".

    The inadequacy of Response I(8) is borne out by its inconsistency with experience, e.g., inflation is not a "questionable assumption" but always contributes to expenses increasing with time. Further, treating a sufficient number of impacts (direct or indirect) as negligible leads to the illogical

conclusion of a "no impact mitigation fees are needed at all" position. These "questionable assumptions" are no more – and very arguably, much less so – questionable than a number of key assumptions used to support the developer's position. Concerns with issues mentioned in D(1a,1b)(see also Colavito in D(2))have not been adequately responded to.

2. Response II(1) is inadequate. Submission of a detailed report does not ensure the report's adequacy, particularly if fact-of-life considerations such as inflation are not properly accounted for. Simply wishing such concerns away does not make it so. Furthermore, although the Spectrum Study is instructive, it also suffers from important internal inconsistencies as they relate to its conclusion of a net positive economic impact from casinos; and they need to be reconciled if its conclusion is to be used in a credible manner. In particular, basic inflation computation demonstrates that it's a to small truth to emphasize the projected $7.5 million surplus contained in the Spectrum Study, while Response II(1) ignores the larger truth of substantial deficits awaiting the County through the action of inflation alone, even while not factoring in other expense detractors. Mr. Colavito has provided such figures (see A(1)) previously to the Town of Thompson Planning Board, BIA and NIGC along with other concerns, and they have not been adequately addressed. Additionally, the Spectrum Study estimates, on the one hand, that casino related jobs in Sullivan County at full build out will be equivalent to the current combined level of County employment in the following sectors: entertainment, services, food, retail and the arts, while on the other hand cautioning on the economic perils of having the casino industry dominate the local economy. As mentioned above, these inconsistencies need to be reconciled if its conclusion is to be credibly referenced.

E. COMMUNITY CHARACTER
- LAND USE/ZONING/GROUNDWATER/AIR QUALITY

See A(1) Colavito

1. No response has been provided to address comments submitted concerning the arbitrary and capriciousness of limiting the evaluation impacts on community character to within a 1-mile radius of the site. The projected 30% increase in County population associated with full build out of the Mohawk Casino and the other two Tribal Casinos planned for Sullivan County will have far-reaching impacts well beyond this 1-mile radius. (see E(2,3),E(5)).
2. No response has been provided to address comments submitted regarding concerns over the incompatibility of the Mohawk casino with findings from the ongoing revision of the Sullivan County Master Plan. Impacts from the casino on implementation of changes to zoning regulations necessary to reflect the new Master Plan needs to be analyzed for the 15 County Townships.
3. No response has been provided to address comments submitted concerning impacts to ground water supply. Concerns regarding aquifer depletion impacts

resulting from the Mohawk Casino and the increase in County population projected to take place therefrom need to be addressed. These impacts also need to be evaluated within the context of the 30% projected increase in County population arising from full build out of the three casinos evaluated for cumulative impacts in the DEIS. Additionally, as indicated at the Town of Thompson Planning Board meeting of June 9, 2004, the Thompson Planning Board does not see any role for itself regarding minimizing impacts from aquifer depletion that could result from expanded development. Indeed, the Board suggested that these concerns are within the purview of the NYSDEC. Such a position taken by the Planning Board, as it relates to the Mohawk Casino, is an unlawful delegation by the lead agency under SEQRA. I add, parenthetically, that when I contacted NYSDEC on June 21, 2004 to discuss responsibility for ensuring residential water supplies from the aquifer, no such corroboration of the Thompson Planning Board's position could be obtained. According to NYSDEC, it's up to individual municipalities to provide leadership roles for residential water supply concerns as they relate to increased development and requests for local assistance.

4. No response has been provided to address comments submitted concerning the developer's claim that casino development provides the only pathway for major development in Sullivan County. This conclusion, used to bolster the developer's position, belies the facts of major development that has taken place in recent years, and that continues to take place, in the absence of casinos. The developer's claim needs to be reconciled with experience in Sullivan County.
5. Response II(5) while acknowledging concerns expressed by Mr. Edelstein regarding community character, cumulative impacts and development of alternatives, does not address them. It defends the developer's position that a mesoscale (regional) air quality analysis is not needed since it is not required under procedures by the NYSDOT Environmental Procedures Manual (EPM). SEQRA demands a cumulative analysis, and deferring to the EPM in the above manner would be an unlawful delegation by the lead agency under SEQRA. Response II(5) then sites EPM criteria requiring a mesoscale analysis, such as construction of a high occupancy vehicle lane (HOVL). A clarification is warranted as to the distinction between air quality impacts arising from construction of a HOVL and the projected increase in vehicular presence along Rt. 17 in Orange and Sullivan Counties, and along Rt. 209 in Ulster and Sullivan Counties. (see Response III(2) where a 50 mile radius is identified as the primary market in the Catskill Gaming Visitation Analysis.)

   No lead agency under SEQRA should be bound by EPM criteria for a determination of adequacy of response, if such criteria draw meaningless distinctions between different mechanisms of source air pollution, if the net effect of those different configurations could result in a comparable impact on air quality. To do so, would be another unlawful delegation under SEQRA. Putting "X" more vehicles on our region's roadways, whether via a HOVL or otherwise, may make little difference to human health along travel corridors in Orange, Sullivan and Ulster Counties.

F. SCHOOLS

See A(1)

1. Response II(10) is inadequate. The Economic Analysis of 2003 prepared by the Innovation Group concludes that the number of new students (2694) would be 45% fewer than that determined by the Spectrum Study (4914). This margin of discrepancy alone consumes a significant portion of the combined fixed impact mitigation fees from the Mohawk Mountain Casino and the other two Tribal casinos whose cumulative impacts were analyzed in the DEIS. As a taxpayer in this County, the financial risk of this unresolved discrepancy is too great to leave unresolved. Accepting the contention that the Spectrum Study is flawed prima facie is totally inappropriate. When expert analysis exhibits a discrepancy of this magnitude, an analysis of that discrepancy is needed which is submitted for public review.

G. UNDERAGE GAMBLING

1. Response II(17) is inadequate since it does not describe monitoring and measurements for compliance; we need to understand these mechanisms on sovereign land, where the usual checks and controls do not apply. We also need to understand what recourse will exist should the casino be out of compliance with these controls. The cost response for underage gambling is also inadequate (see D(1) and F(1)) due to the low confidence in the assessment of costs. Perfunctory remarks acknowledging the concern of underage gambling does not constitute a credible analysis of impacts, a prevention and treatment plan, and assessment of related costs.

H. NON CASINO ALTERNATIVES

1. The response to the Federal EPA letter in V is inadequate. The EPA is not suggesting that NEPA or IGRA require a Tribe to exhaust all other opportunities for economic development and self-sufficiency before turning to their sovereign rights to earn funds through gaming. Apparently EPA shares similar concerns with others (see A(1) Colavito). NEPA and SEQRA require an evaluation of reasonable alternatives, and Colavito has pointed out that reasonable alternatives involving non-casino options may exist; yet none have been presented, e.g., spreading monetary settlements across New York State's labor force or that of the United States, could prove acceptable. Moreover, as is explicitly stated in the DEIS, its primary responsibility is not to evaluate what is in the best interest of the non-Tribal community. This is unlawful since important issues of community character and other environmental impacts must be addressed. This necessitates

consideration of reasonable non-casino alternatives that would address the Tribe's pursuit of economic self-sufficiency.

I. EMPLOYMENT

See A(1) Colavito

1. There is no response to the concerns expressed over the evaluation of unemployment and labor force in Sullivan County and how these concerns are integral to the developer's argument supporting overall benefit to the County should the Mohwak Casino Resort proceed. These concerns comprised the omission of recent data over the past several years, and the use of inaccurate data used to support the employment benefits from the casino. The concerns raised need to be reconciled against NYSDOL's own data.
2. No response is provided to address findings of the Spectrum Study that refute the likelihood of the poor entering into the casino job market, another assertion used by the developer to bolster both the attractiveness of employment opportunities and the to provide linkage with decreased Medicaid costs to the County.
3. No response has been provided addressing the concern of job "loss" associated with the casino. Specifically, an analysis in needed that evaluates the impact to local business that will not be able to compete against the unprecedented scale of projected new job openings that will occur over a relatively short period of time.

J. THE POOR, ELDERLY AND DISABLED

See A(1) Colavito

1. No response has been submitted to address comments concerning increased pricing pressures from those living on fixed incomes. As the County struggles to absorb the spike in population resulting from the casino, the dynamics of the projected housing shortage will increase demand on rents and on property taxes. How will these people be protected?

K. TORT LIABILITY/LIMITATION ON WAIVER OF TRIBAL SOVEREIGNTY

See A(1) Colavito, N(1)

No response has been provided to address comments submitted concerning the adequacy of tort liability caps, and their adverse impact on the non-tribal community.

L. EMERGENCY MEDICAL SERVICES/ADDICTION

See A(1) Colavito, D(1,2), F(1)

1. No response has been provided to address comments submitted concerning the impact to Catskill Regional Medical for emergency medical services.
2. As indicated above, the availability and appropriation of sufficient funds is in question and has not been responded to in meaningful way, or the associated increase in bankruptcy rates that independent research has documented with the advent of casino gaming in a community.

Respectfully,

Dave Colavito

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Eastern Regional Office
711 Stewarts Ferry Pike
Nashville, TN 37214

Trust Services
Environmental Management

APR 21 2005

Mr. Dave Colavito
145 Bowers Road
Rock Hill, NY 12775-6815

Dear Mr. Colavito:

Thank you for providing comments on the Draft Environmental Impact Statement (DEIS) for the proposed Stockbridge-Munsee Casino. We would like to address your comments as follows.

(1) *The cumulative impact analysis is inadequate. A five casino analysis is required.*

As already noted in the DEIS, the Final Environmental Impact Statement (FEIS) will include additional information. The regulation 40 Code of Federal Regulations 1502.22 requires the analysis of all reasonably foreseeable significant adverse effects, or that we provide a statement that the information is unavailable. As stated in the DEIS, information is currently unavailable to provide a full quantitative analysis of cumulative impacts for five potential casinos.

While you have presented substantial evidence of the Governor's plans we cannot base an analysis on what the Governor plans or what a newspaper reports that a tribe intends to do. A full analysis requires the details of the tribal plan that are included in a fee-to-trust application from a tribe to the Bureau of Indian Affairs (BIA). While your chronology provides evidence of intention, it does not provide the details needed for an analysis.

When a tribe submits a casino fee-to-trust application they include a preliminary Environmental Assessment (EA) or preliminary Environmental Impact Statement (EIS). Our staff then works with the tribe and the contractor to develop an acceptable National Environmental Policy Act (NEPA) document. The information that is required includes a marketing study that projects the number of casino visitors based on the size and location of the casino. After the marketing study is developed the traffic study can be developed, based on the projected number and origin of casino visitors. Potential air quality impacts usually depend on the traffic study. Without applications from two of the five tribes proposing casinos we do not have sufficient information to provide a full quantitative analysis of cumulative impacts for the five potential casinos.

The exact location, size and drawing power of any casino can make a dramatic difference in the potential impact. We can only provide a limited speculative narrative based on assuming that all the proposed casinos will have similar drawing power and will be located within Sullivan County close to Route 17. Since the specific size and location of two of the proposed casinos are unknown, it would be irresponsible to attempt to project

full quantitative impacts that would be subject to considerable error. The additional narrative covering the five casino cumulative impact analysis in the Stockbridge-Munsee FEIS will be as extensive as reasonably possible using the known information that is currently available.

The Indian Gaming Regulatory Act (IGRA) built controls into the process so that even the unknown impact of five casinos can still be mitigated. Off-reservation casinos require local support, thus encouraging tribes to have local mitigation agreements. With each tribe having a local mitigation agreement for their casino, the additional money they provide to the local governments is intended to cover the local issues, such as school impacts, crime and other social issues. Under IGRA each tribe also has to make a compact with the state where the casino is located. The intention of a state compact under IGRA is for the mitigation of potential impacts under state control. IGRA disallows payments to the state in lieu of taxes. State compacts commonly take a fixed percentage of slot machine revenues. This proportional funding provides proportional mitigation for any state-controlled issue such as roads and air quality, regardless of whether there is one casino or five. While we cannot project every impact, we know that the mitigation ratio is high enough to be more than adequate to cover a broad spectrum of issues.

(2) *The combustion of fossil fuels will impact air quality and cause health effects. These sources are from vehicular emissions which are presumed to decrease over time. Diesel fuels will increase over time, as will ozone and particulate matter. A regional analysis of air quality should be conducted. The DEIS ignores stationary sources of pollution, using home heating oil, that are a result of induced regional growth. Health effects from pollutants are also not included.*

Additional narrative will be provided that includes stationary source emissions from use of home heating fuel oil. Health impacts will not be included unless it can be demonstrated that the project would cause Sullivan County to become a Clean Air Act non-attainment area. These are the Federal standards that we must abide by, and only by exceeding these standards are the potential impacts considered to be harmful to human health. A regional air quality analysis would only reiterate current conditions that are already known. Sullivan County is a Clean Air Act (CAA) attainment area. Orange County is a known CAA non-attainment area due to vehicular emissions. Orange County air pollution is related to current traffic congestion and has nothing to do with casino development.

If the State chooses to use project mitigation funds provided through the five Tribal-State compacts, as intended by IGRA, to mitigate Route 17 traffic conditions the improved traffic flow will assist in CAA compliance, not hinder it. The amount of pollutants that any vehicle produces is directly related to its speed, consistency of speed and amount of acceleration required. Improving traffic flow, by making vehicle velocity more consistent, will reduce the pollution from each vehicle. Improving traffic flow also reduces travel time and reduces vehicle use time per trip. The reduction in cumulative trip time can be significant. Constant velocity reduces the total pollution produced per vehicle per trip. Because of that you can actually have more cars flowing smoothly and produce less pollution than fewer vehicles in congested traffic, simply by adding roadway

capacity. Air quality and traffic safety both benefit when traffic flows smoothly at a constant velocity. This also benefits roadway use by emergency vehicles.

(3) Community character impacts are not adequately assessed. Induced regional growth produces sprawl that impacts farmers, and impacts addiction, bankruptcy and crime.

Regional growth is adequately acknowledged in the DEIS. It is probable that community character will change over time and that it would be accelerated by casino development. Impacts on farmers are possible as community character changes. Due to the proximity of Sullivan County to New York City, community character would probably change over time regardless of whether casinos are located in Sullivan County. For additional information on the impacts of casinos please refer to "The Report of the New York State Task Force on Casino Gambling, August 30, 1996" that was commissioned by the State prior to considering gambling by Executive Order 36.1. This commission was chaired by Robert J. Sise. It documents the actual impacts that communities have felt, such as the potential for crime, as well as the economic gains for both communities and State. Since both your letter and this response letter are being made part of the FEIS, this report is hereby incorporated by reference into the FEIS. Please refer to this report for potential community character impacts.

(4) A supplemental Environmental Impact Statement will be needed if the five casino analysis is not provided.

As stated in the DEIS, the FEIS will include additional narrative on the potential impacts from five casinos. However, this analysis will not be a full quantitative analysis due to the unknown information. As also noted above, IGRA provides for full mitigation through the required State compact and local agreements, even when some information may be unknown. While NEPA is intended to analyze and then plan mitigation for any negative impact due to a Federal action, this Federal action must also comply with IGRA. The Federal approval process under IGRA requires mitigation provisions as an integral part of the approval process, rather than just planned mitigation in the FEIS as required under NEPA. IGRA thereby exceeds NEPA requirements. Even when unknown information prevents full analysis under NEPA full mitigation is already provided for by IGRA.

(5) Traffic impacts can only be mitigated by widening Route 17 or building a high-speed mass transit system.

The Bureau of Indian Affairs (BIA) concurs that the additional traffic that would result from the approval of five casinos has the potential to add sufficient traffic to the current volumes that additional transportation capacity to Sullivan County may be necessary. However, without the applications from the two additional Tribes, there is insufficient date to make quantitative predictions. Even without the hard data necessary for a full analysis, our environmental staff estimates that an additional traffic lane along Route 17 may be needed to accommodate the potential traffic from five casinos in Sullivan County. Others have suggested a light rail system. Casino patrons have their choice of venues and may not tolerate traffic slow-downs when easier choices are available, even when the roads are rated at higher capacity. Three casinos represent a slowing of traffic by

changing the level of service (LOS) along congested areas of Route 17. Five casinos could slow the traffic down further or even discourage casino patrons from going to Sullivan County. Either result would not be acceptable for many people. IGRA requires the tribes to provide mitigation funding to the State through the Tribal-State compacts for the purpose of mitigating such impacts under State control. It is up to the State to determine how to use these mitigation funds. The economic benefits to the State from these casinos should make adding a traffic lane to Route 17 an achievable mitigation. When you consider the loss of casino patrons that could result from traffic congestion, a cost-benefit analysis should make State mitigation measures that improve traffic flows to Sullivan County economically attractive. It would also address a major concern being raised by residents of neighboring Orange County. While the State does not currently plan to widen Route 17, if these casinos are approved, the Tribal funding should be considered available for impact mitigation. The State could issue bonds or other such means that can be paid back when Tribal mitigation funds are provided. At that time, State representatives should be encouraged to use the mitigation funds as intended by IGRA.

(6) A shift toward year-round residency from seasonal residency could shift tax burdens for schools. The renter/buyer ratio for homes could change.

This issue is already mitigated. The Tribe is paying 15 million dollars annually to mitigate such local impacts. "The Report of the New York State Task Force on Casino Gambling" documents economic gains and an expanding economy with the addition of casinos. State and local tax incomes have been shown to increase with increasing commerce and regional growth.

(7) The DEIS does not adequately discuss the increased cost associated with additional addiction, bankruptcy and crime. The land claims could expand gambling to other counties.

The information is adequate and these issues completely mitigated. The purpose of the local mitigation agreement is to mitigate such local impacts. The 15 million dollars annually paid by the Tribe is intended to mitigate local impacts on roads, school and social programs such as gambling addictions.

(8) The cumulative growth impacts sections include issues related to an expanding economy, but doesn't mention the detrimental impact of having the local economy dependent on casinos. Dependence on a single industry may not be beneficial to the local economy. Sullivan County is recovering without casinos.

Please refer to "The Report of the New York State Task Force on Casino Gambling". The detrimental impacts to the economy from casinos have historically been limited to those dependent on the same customer base, and include a loss to gambling establishments and a potential reduction in charity spending. Since money spent at casinos may largely be considered otherwise un-obligated, national or regional economic depressions could impact the spending habits of casino patrons and cause a reduction in State mitigation revenues. Since the local mitigation agreement is not based on a percentage of casino income it should not be impacted, so local services would also not

be impacted. Some people have reported to the BIA that they have moved into or are investing in Sullivan County simply due to the economic boom projected for the region due to the proposed casinos. It is also probable that some residents locate there due to the proximity to New York City. Regional growth is probable over time due to that proximity. Without casinos, the growth patterns would also continue as they have been, with Orange County receiving the majority of the economic benefits from growth while the roads become more crowded with increasing air pollution. A casino based Sullivan County economy includes economic independence from Orange County, and a State compact that provides Tribal mitigation funding for improved Sullivan County access to New York City that would also reduce air pollution along Route 17.

(9) Pricing pressures on those with fixed income is not addressed by the DEIS as an environmental justice concern. Tribal income and Sullivan County income are comparable.

The determination of environmental justice impacts must first determine if there is an environmental justice community that may be disproportionately impacted. While every community includes persons on a fixed income, low income alone does not define these people as an environmental justice community. Most communities include a broad spectrum of income levels, but those with lower incomes are not considered a community unless they also meet other criteria, such as being a clearly identified group with minority status. Tribes are considered environmental justice communities because they are minority groups that have been historically disadvantaged by the social order established by the greater population. Indian tribes are the only known communities that are known to be both historically disadvantaged and clearly defined as minority communities that may be impacted by casinos in Sullivan County. After establishing that there is an environmental justice community, the impact needs to be proven to be disproportionate on that community. At this point, the only known potential environmental justice impacts from this project would be on other local tribes within the State due to their unique right to establish a casino to support tribal social and health programs. Disproportionate impacts on those tribes have not been demonstrated to result from this project. Some people question whether gambling may have a greater impact on poor people, but low income and gambling addictions know no racial boundaries. While home prices may rise with an expanding economy so does personal income for most people. The local governments can choose to use the 15 million dollar annual mitigation funds provided by the tribe for social programs for those on fixed incomes in need.

For questions or further information please contact Kurt G. Chandler, Regional Environmental Scientist at (615) 467-1677.

Sincerely,

Robert K. Lipp

ACTING Director, Eastern Region

Appendix Q

Stream Impact Area Assessment

TETRA TECH

Stream Impact Area Assesment
Proposed Stockbridge-Munsee Casino
Thompson, NY

May 20, 2005

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1.0 Introduction

The three stream impacts areas were visited and evaluated for their wildlife habitat potential, and physical characteristics. Figure 1 provides the general location of the streams and specific impact locations are shown on Figure 2. This assessment was based on the USACE and USEPA (2004) *Physical Stream Assessment* review. Key habitat features and stream characteristics were assessed based on methodology developed for conducting evaluations by the University of Massachusetts Department of Forestry and Wildlife Management. Particular attention was paid to unique features or problems that could either be replicated or improved upon in mitigations areas. Data and general observations were recorded on forms which are included in Appendix A. Appendix B provides photographs.

Table 1 Evaluation Area Summary

Stream #	HUC Code	Lat/Long (start of impact)	Impact (linear feet)	Photographs
17	02040104	41.645134150 N 74.61806821 W	63	1, 2
3	02040104	41.646917531 N 74.619889371W	480	3, 4
4	02040104	41.64730294 N 74.618953026W	162	5, 6, 7

2.0 Impact Area Descriptions

2.1 Stream #17

This intermittent stream is a short channel located on the Gildick parcel in the vicinity of the disturbance caused by historic gravel mining operations. This 63 foot long stream flows across an unimproved road and connects Pond 4 to Basin 1, both of which appear to be artificial water features created during the site's mining history. Photographs 1 and 2 in Appendix B show the stream.

The main source of water for this stream is from the small man made pond via seepage from the base of a primitive rock dam. At the time the evaluation was completed this flow was negligible. However, the stream appears to be primarily influenced by stronger intermittent flows, presumably during storm events. These flows have given the channel the basic character of gully erosion with widths between 5 and 8 feet and a maximum depth of 1.5 feet. This erosion process is essentially removing

material from the road and sorting it downstream. The substrate of the channel in the upper part, just after it crosses the road, is dominated by cobble and gravel with progressively finer material toward the downstream end of the channel where the banks are poorly defined, if not non-existent.

There is no vegetation along the upper banks of the stream. There is a sparse tree cover of red maple and several highbush blueberry shrubs along the lower portion of the stream in the vicinity of the pond.

Given the sparse vegetation and problems with erosion, the stream is lacking most habitat features. One notable exception may be the apparently good turtle nesting habitat created by the large area of sand that has been washed down to the end of the channel.

2.2 Stream # 3

This intermittent stream is located in the forested part of the Gildick parcel in an area less disturbed by the former activities on the site. The entire stream is approximately 680 feet long and connects two small vegetated wetlands to the larger Wetland Area 4 (WA-4) at its terminus. The width of the channel ranges from 3 to 10 feet with an average of approximately 4 feet. The depth of the channel averages 1.5 feet. The impact to this stream will be 480 linear feet. Pictures 3 and 4 provide typical views of the stream within the impact area (Appendix B).

Water in the stream originates at the upper vegetated wetland (WA-6) as a very small flow as was observed during evaluation and on previous site visits. However, drift lines, scour and sediment deposits downstream suggest that the stream is intermittently subjected to high flows during storm events. The relatively steep topography to the east most likely contributes to the severity of the flows. The substrate of the stream is dominated by cobble size rock with gravel in the steeper areas and sands and silts within the flatter sections of the stream.

The stream flows through a forest nearly completely dominated by eastern hemlock. Aside from several types of moss there is very little other vegetation associated with the stream. Cover is available for amphibians, reptiles and small mammals in the form of significant woody debris on the ground and large rocks. Also a number of dead standing trees were observed in the immediate vicinity of the stream.

2.3 Stream # 4

This intermittent stream is approximately 350 feet in length. It connects WA-3 and Pond 1 to WA-4 at its confluence with Stream #3. The average

width of the channel is approximately 4 feet with an average depth of 1.5 feet. The impact to this stream will be 162 linear feet. Pictures 5 through 7 (Appendix B) provide views of the stream within the impact area.

In general this stream is very similar to Stream #3 in terms of its setting and character. The stream receives water from the pond within WA-3. The flow is normally low as it originates as seep from the base of a primitive dam at the pond. As with Stream # 3, though, storm flows are high as evidenced by several debris dams within the channel, multiple overflow channels and large sediment deposits downstream. Photographs of these debris dams and the large sediment deposits at the end of the stream (shared with Stream #3) are provided in Appendix B.

The substrate in Stream #4 is composed of slightly larger than cobble size rock with silts and sands. These large flat rocks may provide habitat for amphibians.

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Appendix A

Evaluation Forms

Project Name: Stockbridge-Munsee Casino
Location: Stream #3 Impact area
Investigator: ZG **Date:** 5/11/05
Aspect: W → E Slope:
Height of Bank in Project Area: 1.5' Avg. Length of Bank in Project Area: 480' impact

Characteristics:

Waterbody	☐ Yes ☒ No	Source of water begins at sm. veg wetland on steep grade to the west
Waterway	☒ Yes ☐ No	
Perennial	☐ Yes ☒ No	
Vegetated	☒ Yes ☐ No	
Depth:	6" Max	

Soil Characteristics:
Substrate Composition: 20 % Gravel (cobble) 60 % Sand 20 % Silt
___ % Clay ___ % Organics

General Description:

	Horizon	Depth	Structure	
adjacent channel deposits from flooding	A_p	0-10	loamy sand	7.5YR 4/3 — 4/6
	C_1	10-12	sand	7.5YR 5/2
	C_2	12-17	sandy loam	7.5YR 4/1

Mud flats or other exposed areas present : ☐ No ☒ Yes If yes describe (size, quantity, etc.)
limited muddy areas in flat portions of channel

Vegetation
% Cover 65 Trees 60 Shrubs 5 Herbaceous
— Aquatics 5 Low Ground Cover 1-2" Leaf Litter
Amount of Interspersion: ___

Trees: *(list species with ≥ 10% cover)*

Species:		Pattern of Distribution (random, uniform, clumped, etc.)
Eastern Hemlock	60%	uniform
Red Maple	20%	uniform

#3

Shrubs: *(list species with ≥ 10% cover)*

Species:		Pattern of Distribution (random, uniform, clumped, etc.)
Eastern Hemlock	60%	uniform

Range of Shrub Height (%): 10 0-3' 70 3-6' 20 >6'

Herbaceous: *(list species with ≥ 10% cover)*

Species:		Pattern of Distribution (random, uniform, clumped, etc.)
Mosses	10%	concentrated on Banks or on rocks near channel in moist areas
new, sp. unk → ferns	5%	

Aquatics: *(list species with ≥ 10% cover)*

Species:	Pattern of Distribution (random, uniform, clumped, etc.)
None	

Important Food and Habitat Features *(If present provide additional detail)*

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

____ Abundant ____ Present X Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry production)

____ Abundant ____ Present X Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

____ Abundant X Present ____ Absent

some muddy flat areas

#3

Number (or density) of Standing Dead Trees (potential for cavities)

many 6-12" dbh _____ 12-18" dbh _____ 18-24" dbh _____ >24" dbh

Number of Tree Cavities in Trunks or Limbs of:

many X 6-12" dia. (tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
____ 12-18" dia. (hooded mergansers, wood duck, common goldeneye, mink)
____ >18" dia. (common merganser, barred owl, mink, raccoon, fisher)

Cover/Perches/Basking/Denning Habitat

____ Dense herbaceous cover (voles, small mammnals, amphibians & reptiles)
X Large woody debris on the ground (small mammals, mink, amphibians & reptiles)
____ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)
X Rocks, crevices, fallen logs, overhanging branches or hummocks at or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoom)
____ Live or dead standing vegetation overhanging water or offering good visibility of open water (osprey, kingfisher, flycatchers, cedar waxwings)
X Rock piles, crevices or hollow logs suitable for:

____	otter	____	mink	X	porcupine + other small mammals
____	bear	____	bobcat	____	turkey vulture

X Flat rocks and logs (cover for stream salamanders and nesting habitat for dusky salamanders) Brown stone Bedrock has platy cleavage
____ Vertical sandy banks (bank swallow, kingfisher)
____ Exposed areas of well-drained, sandy soil for turtle nesting

Wildlife Dens/Nests

None observed

____ Known turtle nesting sites
____ Bank swallow colony

Nest(s) of	____	Bald eagle	____	Osprey	____	Great blue heron
Den(s) of	____	Otter	____	Mink	____	Beaver

Project is within:

100' of beaver, mink or otter den, bank swallow colony or turtle nesting area NO
200' of great blue heron or osprey nest(s) NO
300' of a bald eagle nest NO

- prints of deer and raccoon in muddy areas

Landscape Context

Habitat Continuity (If present, describe the landscape context)

Is the assessment area part of an emergent marsh at least: (marsh and shorebirds)

____ 1.0 ac ____ 2.0 ac ____ 5.0 ac ____ 10.0 ac

Is the assessment area part of a wetland complex at least: (turtles, frogs, waterfowl, mammals)

____ 2.5 ac ____ 5.0 ac ____ 10.0 ac ____ 25.0 ac

Is the assessment area part of a contiguous forest habitat at least: (forest interior nesting birds)

X 50 ac ____ 100 ac ____ 250 ac ____ 500 ac

Connectivity with Adjoining Natural Habitats

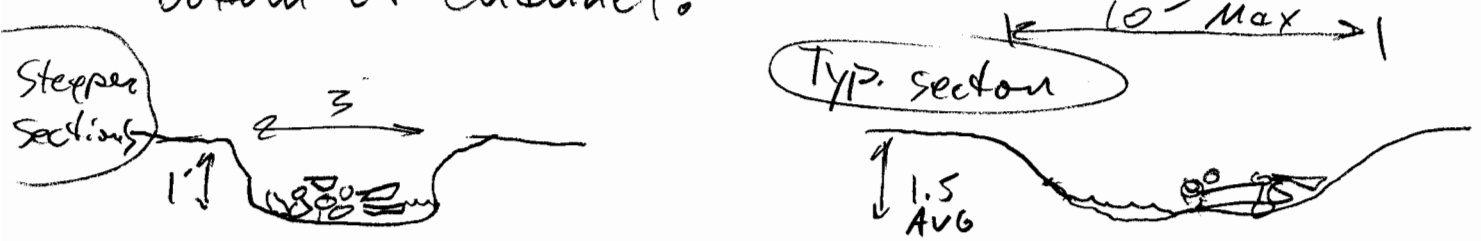
- ____ No direct connections to adjacent areas of wildlife habitat
- X Connectors numerous or assessment area is embedded in a large area of natural habitat
- ____ Assessment area contributes to a limited number of connectors to adjacent areas of habitat
- ____ Assessment area serves as *part of* a sole connector to adjacent areas of habitat
- ____ Assessment area serves as *only* connector to adjacent areas of habitat

Habitat Degradation Describe degradation and impacts on wildlife habitat value)

- ____ Evidence of significant chemical contamination
- ____ Evidence of significant levels of dumping
- ____ Evidence of significant erosion or sedimentation
- ____ Significant invasion of exotic plants
- X Disturbance from roads or highways } historic logging operations
- X Other human disturbance

Additional Comments: Refer to Photo #'s 3 + 4

Stream is shallow with mostly unpronounced banks. Numerous large woody debris is present throughout. Stream appears to experience very stormy intermittent flow, debris dams, scour, erosion, and many overflow channels at bottom of channel.



#4

Project Name: Stockbridge-Munsee Casino
Location: Stream # 4 impact
Investigator: BQ **Date:** 5/11/05
Aspect: W → E Slope:
Height of Bank in Project Area: 1.5 AVG Length of Bank in Project Area: 162' impact

Characteristics:

Waterbody	☐ Yes ☒ No	main source of water is wetland #3 and Pond #1, seep from base of stone/earth dam
Waterway	☒ Yes ☐ No	
Perennial	☐ Yes ☒ No	
Vegetated	☒ Yes ☐ No	
Depth:		

Soil Characteristics:
Substrate Composition: 45 % Gravel + cobble 25 % Sand 20 % Silt
___ % Clay ___ % Organics

General Description:

adj. channel, likely deposited by flood events

Horizon	Depth	Structure		
Ap	0-10	loamy sand	7.5YR	4/3 – 4/6
C1	10-12	Sand	7.5YR	5/2
C2	12-17	Sandy loam	7.5YR	4/1

Mud flats or other exposed areas present : ☐ No ☐ Yes If yes describe (size, quantity, etc.)
Small areas within channel where grade is flat and behind debris dams

Vegetation
% Cover 65 Trees 65 Shrubs 5 Herbaceous
— Aquatics 5 Low Ground Cover 1-2" Leaf Litter
Amount of Interspersion: ___

Trees: *(list species with ≥ 10% cover)*

Species:		Pattern of Distribution (random, uniform, clumped, etc.)
Eastern Hemlock	60 %	Uniform
Red Maple	20 %	

Shrubs: *(list species with ≥ 10% cover)*

Species: Pattern of Distribution (random, uniform, clumped, etc.)

Eastern Hemlock 60 uniform

Range of Shrub Height (%): 10 0-3' 70 3-6' 20 >6'

Herbaceous: *(list species with ≥ 10% cover)*

Species: Pattern of Distribution (random, uniform, clumped, etc.)

ferns (u.k. new) 5 random
Christmas Fern 10 random

Aquatics: *(list species with ≥ 10% cover)*

Species: Pattern of Distribution (random, uniform, clumped, etc.)

None

Important Food and Habitat Features *(If present provide additional detail)*

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

_____ Abundant _____ Present X Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry production)

_____ Abundant _____ Present X Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

_____ Abundant X Present _____ Absent

Some muddy flat areas

#4

Number (or density) of Standing Dead Trees (potential for cavities)

Many 6-12" dbh _____ 12-18" dbh _____ 18-24" dbh _____ >24" dbh

Number of Tree Cavities in Trunks or Limbs of:

Many 6-12" dia. (tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
____ 12-18" dia. (hooded mergansers, wood duck, common goldeneye, mink)
____ >18" dia. (common merganser, barred owl, mink, raccoon, fisher)

Cover/Perches/Basking/Denning Habitat

____ Dense herbaceous cover (voles, small mammnals, amphibians & reptiles)
X Large woody debris on the ground (small mammals, mink, amphibians & reptiles)
X Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)
____ Rocks, crevices, fallen logs, overhanging branches or hummocks at or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoom)
____ Live or dead standing vegetation overhanging water or offering good visibility of open water (osprey, kingfisher, flycatchers, cedar waxwings)
X Rock piles, crevices or hollow logs suitable for:

____	otter	____	mink	X	porcupine + other sm. mammals
____	bear	____	bobcat	____	turkey vulture

X Flat rocks and logs (cover for stream salamanders and nesting habitat for dusky salamanders) many flat rocks
____ Vertical sandy banks (bank swallow, kingfisher)
____ Exposed areas of well-drained, sandy soil for turtle nesting

Wildlife Dens/Nests

None observed

____ Known turtle nesting sites
____ Bank swallow colony

Nest(s) of	____	Bald eagle	____	Osprey	____	Great blue heron
Den(s) of	____	Otter	____	Mink	____	Beaver

Project is within:

100' of beaver, mink or otter den, bank swallow colony or turtle nesting area NO
200' of great blue heron or osprey nest(s) NO
300' of a bald eagle nest NO

- deer + raccoon prints

#4

Landscape Context

Habitat Continuity (If present, describe the landscape context)

Is the assessment area part of an emergent marsh at least: (marsh and shorebirds)

____ 1.0 ac ____ 2.0 ac ____ 5.0 ac ____ 10.0 ac

Is the assessment area part of a wetland complex at least: (turtles, frogs, waterfowl, mammals)

____ 2.5 ac ____ 5.0 ac ____ 10.0 ac ____ 25.0 ac

Is the assessment area part of a contiguous forest habitat at least: (forest interior nesting birds)

X 50 ac ____ 100 ac ____ 250 ac ____ 500 ac

Connectivity with Adjoining Natural Habitats

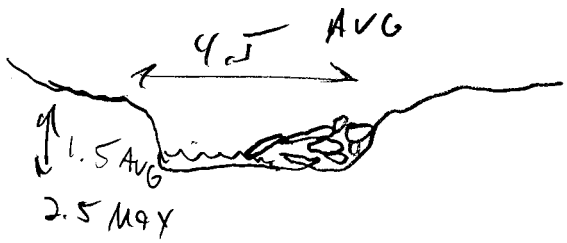
____ No direct connections to adjacent areas of wildlife habitat
X Connectors numerous or assessment area is embedded in a large area of natural habitat
____ Assessment area contributes to a limited number of connectors to adjacent areas of habitat
____ Assessment area serves as *part of* a sole connector to adjacent areas of habitat
____ Assessment area serves as *only* connector to adjacent areas of habitat

Habitat Degradation Describe degradation and impacts on wildlife habitat value)

____ Evidence of significant chemical contamination
____ Evidence of significant levels of dumping
____ Evidence of significant erosion or sedimentation
____ Significant invasion of exotic plants
____ Disturbance from roads or highways
X Other human disturbance Some signs of historic logging

Additional Comments: Refer to Photo #'s 5 – 8

Stream #4 directly adj. to #3 and very similar. Both streams converge just before edge of impact area. Large amount of sediment is deposited below confluence of #3+4 → erosion problem.



Project Name: Stockbridge – Munsee Casino
Location: Stream #17 Impact area
Investigator: BQ **Date:** 5/11/05
Aspect: W → E Slope:
Height of Bank in Project Area: 2' Max Length of Bank in Project Area: 63' impact

Characteristics:

Waterbody	☐ Yes ☒ No	
Waterway	☒ Yes ☐ No	main source water is pond #4, old man made basin, seep from base of stone dam.
Perennial	☐ Yes ☒ No	
Vegetated	☐ Yes ☒ No	
Depth:	5" Max H_2O	

Soil Characteristics:
Substrate Composition: 60 % Gravel (cobble) 20 % Sand 20 % Silt
____ % Clay 0 % Organics Sorted

General Description:

	Horizon	Depth	Structure	
adjacent channel →	Ap	0-16	loamy sand w/high gravel	7.5YR 4/2-5/6

- pockets of sand
- glass, metal, other debris

Mud flats or other exposed areas present : ☐ No ☒ Yes If yes describe (size, quantity, etc.)

- at end of channel prior to entering water of Basin #1, basically from erosion
- May have been deposited under water when Basin was higher

Vegetation
% Cover 20 Trees 10 Shrubs ____ Herbaceous
____ Aquatics ____ Low Ground Cover ____ Leaf Litter
Amount of Interspersion: ____

Trees: *(list species with ≥ 10% cover)*

Species:	Pattern of Distribution (random, uniform, clumped, etc.)
Red Maple 20%	concentrated around Basin #1

#17

Shrubs: *(list species with ≥ 10% cover)*

Species: Pattern of Distribution (random, uniform, clumped, etc.)

Highbush Blueberry 10% concentrated around Basin #1

Range of Shrub Height (%): _____ 0-3' __X__ 3-6' _____ >6'

Herbaceous: *(list species with ≥ 10% cover)*

Species: Pattern of Distribution (random, uniform, clumped, etc.)

new growth Sp. UK { grasses < 10%, ferns

Aquatics: *(list species with ≥ 10% cover)*

Species: Pattern of Distribution (random, uniform, clumped, etc.)

none

Important Food and Habitat Features *(If present provide additional detail)*

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

_____ Abundant _____ Present __X__ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry production)

_____ Abundant __X__ Present _____ Absent

Limited Blueberry

Shrub thickets or streambeds with abundant earthworms (American woodcock)

_____ Abundant _____ Present __X__ Absent

Number (or density) of Standing Dead Trees (potential for cavities)

____ 6-12" dbh / 12-18" dbh ____ 18-24" dbh ____ >24" dbh

Number of Tree Cavities in Trunks or Limbs of:

/ 6-12" dia. (tree swallow, saw whet owl, screech owl, bluebird, other songbirds)
____ 12-18" dia. (hooded mergansers, wood duck, common goldeneye, mink)
____ >18" dia. (common merganser, barred owl, mink, raccoon, fisher)

Cover/Perches/Basking/Denning Habitat

____ Dense herbaceous cover (voles, small mammnals, amphibians & reptiles)
X Large woody debris on the ground (small mammals, mink, amphibians & reptiles)
____ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)
____ Rocks, crevices, fallen logs, overhanging branches or hummocks at or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoom)
____ Live or dead standing vegetation overhanging water or offering good visibility of open water (osprey, kingfisher, flycatchers, cedar waxwings)
X Rock piles, crevices or hollow logs suitable for:

____ otter ____ mink X porcupine + other sm. mammals
____ bear ____ bobcat ____ turkey vulture

____ Flat rocks and logs (cover for stream salamanders and nesting habitat for dusky salamanders)
X Vertical sandy banks (bank swallow, kingfisher)
X Exposed areas of well-drained, sandy soil for turtle nesting ← good at end of channel

Wildlife Dens/Nests None observed

____ Known turtle nesting sites
____ Bank swallow colony

Nest(s) of ____ Bald eagle ____ Osprey ____ Great blue heron
Den(s) of ____ Otter ____ Mink ____ Beaver

Project is within:

100' of beaver, mink or otter den, bank swallow colony or turtle nesting area no
200' of great blue heron or osprey nest(s) no
300' of a bald eagle nest no

- prints of deer + raccoon

#17

Landscape Context

Habitat Continuity (If present, describe the landscape context)

Is the assessment area part of an emergent marsh at least: (marsh and shorebirds)

____ 1.0 ac ____ 2.0 ac ____ 5.0 ac ____ 10.0 ac

Is the assessment area part of a wetland complex at least: (turtles, frogs, waterfowl, mammals)

X 2.5 ac ____ 5.0 ac ____ 10.0 ac ____ 25.0 ac

Is the assessment area part of a contiguous forest habitat at least: (forest interior nesting birds)

____ 50 ac ____ 100 ac ____ 250 ac ____ 500 ac

Connectivity with Adjoining Natural Habitats

- ____ No direct connections to adjacent areas of wildlife habitat
- ____ Connectors numerous or assessment area is embedded in a large area of natural habitat
- ____ Assessment area contributes to a limited number of connectors to adjacent areas of habitat
- X Assessment area serves as *part of* a sole connector to adjacent areas of habitat
- ____ Assessment area serves as *only* connector to adjacent areas of habitat

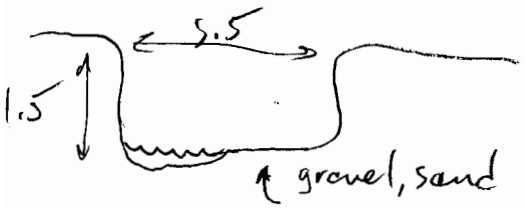
Habitat Degradation Describe degradation and impacts on wildlife habitat value)

- ____ Evidence of significant chemical contamination
- X Evidence of significant levels of dumping Old auto salvage yard
- X Evidence of significant erosion or sedimentation
- ____ Significant invasion of exotic plants
- X Disturbance from roads or highways
- ____ Other human disturbance

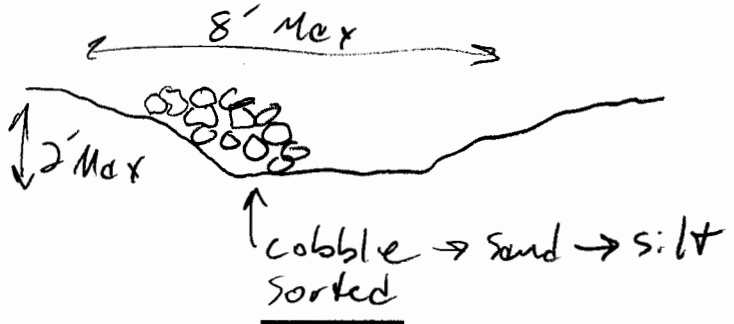
Additional Comments: Refer to photo #'s 1+2

Stream connects 2 old basins created by gravel mining operations. 1/2 stream cuts accross an unimproved road. Erosion problem.

Typ. @ Road crossing



Typ. after crossing Road



Appendix B

Impact Area Photographs

Picture 1----Stream #17 upstream

Picture 2---- Stream #17 downstream

Picture 3----Stream # 3shallow grade

Picture 4----Stream #3 steeper grade

Picture 5---- Stream #4 typical view

Picture 6---Debris dam on Stream #4

Picture 7---Above debris dam on stream #4

Picture 8---Large sediment deposit at end of streams 3 and 4

Appendix R

Wetland Functions and Values

TETRA TECH

Functions and Values Assessment
Stockbridge-Munsee Casino
Thompson, New York

May 12, 2005

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Appendix A Wetlands Function Value Forms
Appendix B Wetland Evaluation Supporting Documentation

1.0 Introduction

The Stockbridge-Munsee Community, Band of Mohican Indians of Wisconsin is proposing a casino in the Town of Thompson, New York. Figure 1 shows the site location. A Jurisdictional Determination was made by the U.S. Army Corps of Engineers (USACE) on January 8, 2002. An Individual Permit Application was subsequently filed on April 8, 2003. A Draft Environmental Impact Statement (DEIS) went to Public Comment on January 28, 2005. A copy of this DEIS was sent to the USACE, and contains much of the background information referred to in this report. A Final Environmental Impact Statement (FEIS) is currently being finalized.

The following report describes the impact and mitigation areas and their existing (or proposed) functions and values. The areas were assessed regarding the eight functions and five values recognized by the U.S. Army Corps of Engineers (USACE), following the guidelines of *The Highway Methodology Workbook Supplement* (USACE, 1995). Figure 2 shows the project area and wetland resources. Figure 3 shows the proposed site development plan. The Wetland Function-Value Forms are included in Appendix A. Appendix B provides the rational for the evaluations.

2.0 Wetland Impacts and Mitigation Areas

The project will involve a total of two Wetland Impact Areas (WIA), three Stream Impact Areas (SIA) and one Pond Impact Area (PIA). Project mitigation will include one Wetland Creation Area (WCA), one Pond Enhancement Area (PEA), one Pond Creation Area (PCA), and two Waterway Mitigation Areas (WMA). Tables 1 and 2 summarize proposed impacts and mitigation. Impact areas are shown on Figure 4. Figures 5 through 9 show the mitigation plans.

Table 1 Summary of Wetland Impacts

Area*	Impact	Comment*
WIA-4	1.48 ac.	The wetland is primarily forested with an area of emergent vegetation at the southern end. The forested portions of the wetland are dominated by eastern hemlock (*Tsuga candensis*) and eastern white pine (*Pinus strobus*) with an understory of high bush blueberry (*Vaccinium corymbosum*). Herbaceous species include cinnamon fern (*Osumuda cimmomea*) and sphagnum. Logging has occurred in the past. The impact area is forested.
WIA-21	0.05 ac.	This forested wetland is dominated by eastern hemlock with sparse understory and herbaceous cover.
SIA-3	480 lf.	Intermittent waterway that receives overland flow from adjacent uplands and WA-6. This stream outlets to WA-21 and ultimately WA-4.
SIA-4	162 lf.	Intermittent waterway that receives overland flow from adjacent uplands, WA-3 and Pond 1. SIA-4 outlets to WA-4.
SIA-17	63 lf.	Intermittent waterway that receives overland flow from adjacent uplands and Pond 4. SIA-17 outlets to non-jurisdictional Basin 1.
PIA-4	0.07 ac.	Pond adjacent old logging road and outlets to non-jurisdictional Basin 1. This pond appears to have been originally constructed as a sedimentation basin that has since reverted to a more natural state.

*WIA = Wetland Impact Area
SIA = Stream Impact Area
PIA = Pond Impact Area
WA = Wetland Area

Table 2 Summary of Wetland Mitigation

Area*	Enhancement	Creation	Comment
WCA-1	-	4.3 ac.	Creation area to occur along Neversink River in area previously used as a mining operation.
PEA-1	0.3 ac	-	Enhancement area within non-jurisdictional basin area previously used as in mining operation
PCA-1	-	0.5 ac.	Pond creation area within WCA-1.
WMA-1	-	60 lf	Waterway mitigation area adjacent to SIA-4.
WMA-2	-	740 lf	Waterway mitigation area within WCA-1
Total	0.3 ac enhancement	4.8 ac creation	/ 800 lf waterway mitigation

*WCA = Wetland Creation Area
PEA = Pond Enhancement Area
PCA = Pond Creation Area
WMA = Waterway Mitigation Area

3.0 Mitigation Areas Functions and Values

3.1 Wetland Impact Area Descriptions

WIA-4. Impacts to WIA-4 will occur from construction of the parking garage, casino, and surface parking. This wetland complex is primarily forested with an area of emergent vegetation at the southern end. The forested portions of the wetland are dominated by eastern hemlock and eastern white pine with an understory of high bush blueberry. Herbaceous species include cinnamon fern and sphagnum. The emergent portion of the wetland is dominated by assorted hydrophytic grasses, sedges and rushes. Water enters the wetland complex from other wetlands upgradient to the west via several intermittent streams. The water regime of this wetland ranges from saturated to seasonally flooded. Portions of this wetland complex have been disturbed by auto salvage operations, recent forest harvesting, and earthmoving activities.

WIA-21. Impacts to WIA-21 will occur from construction of the parking garage. This forested wetland is dominated by eastern hemlock with sparse understory or herbaceous cover. This wetland system is situated on an intermittent stream, which hydrologically connects to bordering wetland areas. The water regime of this wetland is saturated/seasonally flooded.

SIA-3. Impacts to SIA-3 will result from construction of the parking garage and Loop Road. SIA-3 is an intermittent waterway that receives overland flow from adjacent upland and adjacent wetland systems during rain events and seasonally high groundwater. The waterway is relatively steep, well defined and straight with no meanders. Dominant streambed texture is sand and silt. There is limited plant life within the streambed and scour is present. Canopy cover is approximately 100 percent upland forest.

SIA-4. Impacts to SIA-4 will occur from the construction of the Loop Road. SIA-4 is an intermittent waterway that receives overland flow from adjacent upland and wetland systems during rain events and seasonally high groundwater. The waterway is generally flat, well defined and straight with no meanders. Dominant streambed texture is sand and silt. Limited plant life is within streambed and canopy cover is approximately 100 percent upland forest.

SIA-17. Impacts to SIA-17 are associated with grading activities associated with the construction of the Loop Road. SIA-17 is an intermittent waterway that receives overland flow from adjacent uplands and pond (PIA-4) during rain events and seasonally high groundwater. The waterway is relatively flat, defined, straight with no meanders, and has received historical disturbance from adjacent dirt road. Dominant streambed texture is sand and silt. Limited plant life is found within streambed and canopy cover is approximately 25 percent upland forest. The stream is subject to erosion.

PIA-4. This pond is adjacent an old logging area and exists within a disturbed forested upland at the base of a steep slope. Impacts to PIA-4 are associated with grading activities associated with the construction of the Loop Road. Water flows from this pond into the non-jurisdictional Basin 1 below it, which was used for gravel operations.

3.2 Wetland Impact Areas Functions and Values Assessment

The following summarizes the functions and values of the impact areas as they currently exist. Tables 3 summarize the functions and values of the wetland impact areas and indicate the principal function(s) and/or value(s).

Table 3 Summary of Wetland Impact Areas Functions and Values

Function / Value	WIA-4	WIA-21	SIA-3	SIA-4	SIA-17	PIA-4
Groundwater Recharge/Discharge**	Y	Y	Y	Y	Y	Y
Floodflow Alteration	Y	N	N	N	N	Y
Fish/Shellfish Habitat	N	N	N	N	N	Y
Sediment/Toxicant Reduction	Y	N	N	N	N	N
Nutrient Transformation	Y	N	N	N	N	N
Production Export	N	N	N	N	N	N
Sediment/Shoreline Stabilization	N	N	N	N	N	N
Wildlife Habitat	Y*	Y*	Y*	Y*	Y*	Y*
Recreation	N	N	N	N	N	N
Education/Scientific	N	N	N	N	N	N
Uniqueness/Heritage	N	N	N	N	N	N
Visual Quality/Aesthetics	N	N	N	N	N	N
Endangered Species	N	N	N	N	N	N

* Denotes principal function/value ** Discharge only

Wetland Impact Area (WIA), Stream Impact Area (SIA), Pond Impact Area (PIA)

3.2.1 Groundwater Recharge/Discharge

Groundwater Recharge. Recharge is the movement of surface water into an aquifer. There is scant scientific literature to indicate that wetlands act as significant recharge areas (Carter et al., 1979). Wetlands with the highest probability of having recharge values are those with no outlet, perched above the surrounding terrain, and which occur high in the watershed (Adamus, 1983; Novitzki, 1979).

WIA-4 and 21 are predominantly sloped forested wetlands that do not contain large areas of standing water. These areas are primarily seasonal groundwater discharge areas and do not provide significant recharge.

SIA-3, 4 and 17 are relatively steep sloped intermittent streams. These areas are primarily seasonal groundwater discharge areas and do not provide significant recharge.

PIA-4 is a small and shallow pond with limited groundwater discharge and recharge.

Groundwater Discharge. Discharge is the movement of groundwater into surface waters. Discharge is evidenced by springs, seeps, and/or the presence of streams during low flow conditions.

WIA-4, WIA-21, SIA-3, SIA-4, SIA-17, and PIA-4 were observed to have a high water table in the spring, with evidence of groundwater discharge. All of the impact areas appear to provide this function.

3.2.2 Floodflow Alteration

Floodflow alteration is the process in which runoff, surface flow, and/or interflow is stored or delayed from continuing its downgradient surface flow. It also includes the process of desynchronizing the release of floodflows from numerous wetlands within the regional watershed. Wetlands that have constricted outlets, have a large watershed to wetland ratio, are basin-shaped, or are isolated in which water may enter but cannot exit, may significantly alter flood flows.

WIA-4 is part of a larger wetland that occurs high in the watershed. While it occurs high in its watershed and contains hydric soils that may absorb floodwaters, the fact that this area has a small contributary area and that the soils are saturated by groundwater during high groundwater times, indicate that this area does not significantly alter or desyncronize

floodflows. It can, however, store small areas of standing water and, as such, does contribute to this function.

WIA-21 is a small forested wetland that occurs on a slope and has a small watershed. Due to WIA-21's small contributory area and intermittent nature, this system does not significantly alter or desynchronize floodflows.

SIA-3, SIA-4 and SIA-17 are intermittent streams with no or limited vegetation. They are located on relatively steep slopes, with small watersheds and limited capacity to contain significant volumes of water. SIA-3, SIA-4 and SIA-17 provide negligible floodflow alteration.

PIA-4 is a man altered pond with a small watershed located on the base of a steep slope. The pond absorbs floodwaters from the small surrounding contributory area and has a relatively constricted outlet. PIA-4 provides limited floodflow alteration potential.

3.2.3 Fish and Shellfish Habitat

Fish Habitat. This function refers to the capacity of the seasonal or permanent watercourse/waterbody associated with the wetland to provide fisheries habitat. In order for a wetland to function as habitat for fish it must be associated with permanent open water or a perennial watercourse or be seasonally flooded.

WIA-4, WIA-21, SIA-3, SIA-4 and SIA-17 have intermittent water regimes, no standing water and do not provide fish habitat.

PIA-4 does have the potential to support a warm water fishery. No fish were observed during site investigations and low oxygen condition would be expected during the summer months. PIA-4 provides no fish habitat, but does have the potential.

Shellfish Habitat. This function refers to capacity of the seasonal or permanent watercourse/waterbody associated with the wetland to provide shellfish habitat. Wetlands provide significant shellfish habitat if they are associated with a permanent waterbody, a perennial watercourse, are regularly influenced by tides, or seasonally flooded, and that do not have substrates composed of cobbles or bedrock.

WIA-4, WIA-21, SIA-3, SIA-4, SIA-17 and PIA-4 contain no shellfish habitat. The adjacent Neversink River does have shellfish habitat but will not be impacted by this project.

3.2.4 Sediment/Toxicant/Pathogen Retention

Wetlands that physically or chemically trap and retain inorganic sediments and/or chemical substances generally toxic to aquatic life are considered sediment/toxicant reduction areas. Areas that have a high capacity to function in this ability generally have a relatively large watershed and an inlet, and either have no outlet or discharge surface waters slowly.

WIA-4 and WIA-21 have small watersheds that are largely undisturbed, except for past logging efforts. These areas do not have defined inlets or the capacity to store stormwater. The impact areas have a relatively small watershed with low sediment/ toxicant /pathogen production potential since it is comprised of a predominantly upland forest. While both WIA-4 and WIA-21may have limited capacity to provide some function here, WIA-4 is more likely to provide this function due to its larger size.

SIA-3, SIA-4 and SIA-17 are intermittent streams with no or limited vegetation. They are located on relatively steep slopes and small watersheds. SIA-3, SIA-4 and SIA-17 provide no sediment/toxicant/pathogen retention.

PIA-4 is a man altered pond with a small watershed located on the base of a slope. The pond contains runoff from the small surrounding contributory area and has a relatively constricted outlet. PIA-4 provides negligible sediment/toxicant/pathogen retention potential.

3.2.5 Nutrient Removal/Retention/Transformation

Nutrient removal/retention/transformation refers to the ability of a wetland to trap and store nutrients within the sediment or plant substrate, to retain or to transform inorganic phosphorus and/or nitrogen into their organic forms, or to remove nitrogen in its gaseous form during the growing season. One facet of this function is to remove these nutrients prior to them entering an underlying aquifer or before they are carried downstream. Wetlands possessing deep organic sediments or soils, emergent vegetation, deep water or open water habitats, and soil saturation for most of the growing season, are likely to have a high potential ability for nutrient removal/retention/transformation.

WIA-4, WIA-21, SIA-3, SIA-4, SIA-17 and PIA-4 are saturated for most of the growing season. However, they have no dominant emergent vegetation, deep organic soils or large open water habitats. The relatively small watersheds of the impact areas possess low potential to generate excessive quantities of nutrients. As such, they likely provide only negligible nutrient removal/retention/transformation functions. WIA-4, given its larger size, is most likely to perform this function.

3.2.6 Production Export

Production export is the capability of a wetland to provide food or usable products. A wetland's potential to provide food or usable products for man or other living organisms depends on the wetlands species and diversity of vegetation, landscape position, and its association with a watercourse or significant wildlife population.

WIA-4 has a moderate diversity of plant species and is associated with a moderate wildlife population, typical of forested wetland areas with low diversity. The impact area is not, however, associated with a perennial water course. As such, this impact area provides negligible production export value.

WIA-21, SIA-3, SIA-4, SIA-17 and PIA-4 do not have a diverse plant population and have limited habitat features. As such, they do not provide any significant production export.

3.2.7 Sediment/Shoreline Stabilization

Sediment/shoreline stabilization consists of shoreline anchoring and dissipation of erosive forces. Wetlands with sediment and shoreline stabilization functions either are associated with open waterbodies and watercourses or experience erosive events. The functional capacity of a wetland to provide stabilization is related to type and density of the vegetation abutting the open water or watercourse.

WIA-4 and WIA-21 do not abut perennial watercourses or open waterbodies that experience erosion. These areas do not provide sediment and shoreline stabilization.

Similarly, SIA-3, SIA-4, SIA-17 and PIA-4 are small watercourses and waterbodies with limited ability to provide sediment and shoreline stabilization.

3.2.8 Wildlife Habitat

The wildlife habitat potential of a wetland refers to the potential to provide habitat for wetland wildlife species and those species associated with the edge of wetlands. A wetland with a high principal wildlife habitat function would be a resource area that supports on-site diversity and/or abundance of wetland dependent animals during the breeding, migration, or winter seasons, or an area that is critical to a particular species, such as a deer wintering yard. A high wildlife potential is dependant upon the quality of the wetland's vegetation and water resource, and its surrounding habitat.

WIA-4, WIA-21, and PIA-4 provide medium to high wildlife habitat function. These areas do not provide a diversity of habitat, but contain moderate vegetative cover and suitable habitat conditions for typical wetland wildlife.

SIA-3, SIA-4, and SIA-17 have limited vegetation growth and cover to provide significant wildlife habitat value. The existing vegetation provides limited cover for small mammals, ground-feeding birds, reptiles, or amphibians. The intermittent streams do not contain permanent water or provide habitat for aquatic organisms. As such, they likely provide only nominal wildlife function.

3.2.9 Recreation

The recreation value refers to the wetland's potential to provide consumptive and noncomsumptive recreational opportunities. Wetlands that provide recreational opportunities are those that are easily accessible, provide access to open water or watercourses, and exhibit a high visual/aesthetic quality.

There is no public access, open water, or visual/aesthetic qualities at WIA-4, WIA-21, SIA-3, SIA-4, SIA-17 or PIA-4. Therefore, the recreational value of the impact areas is insignificant.

3.2.10 Educational/Scientific

Education and scientific value refers to a wetland's potential to provide an opportunity for scientific research and/or suitable environment as a "classroom." This potential is based on a wetland's undisturbed environment, regional location, vegetative diversity, its association with perennial open or flowing water, and accessibility.

The educational/scientific value of the impact areas is negligible. These areas do not contain a diversity of habitat classes and have restricted public access. The areas do not contain known threatened or endangered species and have been subject to previous disturbance.

3.2.11 Uniqueness/Heritage

Wetlands that possess a uniqueness or heritage value are those that are undisturbed, contain multiple wetland classes with a high degree of interspersion, are associated with open water or a perennial stream, pose no safety concerns, and are easily accessible. In addition, a wetland identified with this value contains remnant structures, is known as an educational, scientific, or historic/archaeological site, or is considered as an exemplary natural community.

The project area wetlands do not contain high species diversity, nor are they valued for their educational/scientific value and do not offer easy public access. No impacts to historical/archaeological resources are anticipated. The impact areas do not possess a uniqueness/heritage value.

3.2.12 Visual Quality/Aesthetic

Visual quality/aesthetic value is associated with wetlands that exhibit diversity of wetland classes, vegetative species, and open water that is visible from primary viewing locations. These wetlands would also be easily accessible, undisturbed, and located within an area that is not associated with unpleasant odors or high noise levels.

Each of the wetland areas within the project site is located within or adjacent to disturbed area, is adjacent to or within the vicinity of roadways, and is not easily accessible. The impact areas do not contain a diversity of wetland habitats. Therefore, the visual/aesthetic value of the project site wetlands is negligible.

3.2.13 Endangered Species Habitat

The wetland impact areas are not listed in state or federal databases as high priority sites, exemplary natural communities, or habitat for endangered species. None of the impact areas support endangered species.

4.0 Mitigation Areas Functions and Values

4.1 Wetland Mitigation Area Descriptions

The wetland mitigation areas within the project site have been previously described and detailed in *Individual Permit Application, Stockbridge-Munsee Casino Thompson, New York* (Rizzo, 2002), as well as Section 5.3.2.1 of the DEIS and FEIS.

Figures 5 through 9 show the proposed wetland mitigation areas. This includes enhancement, restoration and creation. The five mitigation areas have been designed to provide no net loss of wetland functions or values as a result of project implementation. Each of the thirteen functions and values are reviewed below with regard to post-construction conditions in each mitigation area..

WCA-1 is a wetland creation area that will total 4.3 acres, and will include a pond and a waterway (PCA-1 and WMA-2). Figure 5 shows the general concept for the WCA-1, with details in Figures 6 and 7. The WCA-1 has been designed so that there will be no net loss of wetland functions or values and to maintain and improve the existing vegetative buffer along the Neversink River. The WCA-1 location is an extremely low value, unvegetated area that has been impacted by mining operations

PCA-1 is mitigation for the impacts to PIA-4 and will include creation of 0.5 acres of pond inside the WCA-1. The proposed pond will be established at the same elevation as the current mining sedimentation ponds. This area will be overexcavated in order to remove accumulated sediments. This pond will create habitat diversity and provide fish habitat. It will include overhang logs, root wad revetments, fallen tree shelters and/or large rocks that will provide shelter and basking areas for fish and wildlife.

PEA-1 will involve enhancement of existing sedimentation Basin 1 (0.3 acres). This basin was originally created as part of the mining operation to control runoff from adjacent disturbed areas. Enhancement of this basin is proposed to include stabilization of the banks and surrounding area, increasing the depth to create a deeper permanent pool of water, and provision of landscaping to provide shade as well as diverse wetland plant species. Because grading will have to occur along the banks of this basin,

it is also proposed to establish an aquatic shelf along the edge of the basin. Figure 8 shows the general concept.

WMA-1 involves the creation of a new stream course that will be constructed between WA-3 and WA-4. WMA-1will include a culvert under the Loop Road. This new stream will be approximately 60 lf, excluding the portion in the culvert. This stream channel will be landscaped and end in a forebay, which will allow for flows to discharge to WA-4 as sheet flow. Figure 9 shows the general concept.

WMA-2 involves the creation of a stream channel inside WCA-1. This channel will direct surface water from the PCA-1 to the lower end of the creation area, where the surface water will ultimately discharge to the Neversink River, as occurs under existing conditions. This new stream will be approximately 740 lf. It will follow a slightly sinuous course to mimic natural conditions. Similar to the created pond (PCA-1), boulders, root wad revetments, fallen tree shelters and/or overhang logs will be placed intermittently along the bank to provide wildlife habitat. The entire area will be landscaped and seeded with a wetland seed mix.

4.2 Mitigation Areas Functions and Values Assessment

The following describes the functions and values of the mitigation areas as they are proposed. Table 4 summarizes the functions and values of the mitigation areas and indicates the principal function(s) and/or value(s).

Table 4 Summary of Mitigation Areas Functions and Values

Function / Value	WCA-1	PEA-1	PCA-1	WMA-1	WMA-2
Groundwater Recharge/Discharge	Y	Y	Y	Y	Y
Floodflow Alteration	Y*	Y	Y	N	Y
Fish/Shellfish Habitat	N	Y	Y*	N	Y
Sediment/Toxicant Reduction	Y*	Y	Y	Y	Y
Nutrient Transformation	Y*	Y	Y	Y	Y
Production Export	Y	N	Y	N	Y
Sediment/Shoreline Stabilization	Y	Y	Y	Y	Y
Wildlife Habitat	Y*	Y*	Y*	Y*	Y*
Recreation	N	N	N	N	N
Education/Scientific	N	N	N	N	N
Uniqueness/Heritage	N	N	N	N	N
Visual Quality/Aesthetics	N	N	N	N	N
Endangered Species	N	N	N	N	N

Function / Value	WCA-1	PEA-1	PCA-1	WMA-1	WMA-2
* Denotes principal function/value					

Wetland Creation Area (WCA), Pond Creation Area (PCA), Pond Enhancement Area (PEA) and Waterway Mitigation Area (WMA)

4.2.1 Groundwater Recharge/Discharge

WCA-1 will contain areas of standing water (PCA-4/WMA-2) and will act primarily as a seasonal groundwater discharge area. WCA-1 has been specifically designed to intercept groundwater during the growing season such that groundwater discharge can contribute to the establishment of wetland hydrology. The sandy and gravel dominant subsurface conditions beneath the WCA-1 will provide groundwater discharge ultimately to the Neversink River.

The proposed deepening of PEA-1 will provide limited enhancement of groundwater recharge and discharge by further intercepting the local groundwater table.

WMA-1 has been designed as a relatively sloped intermittent stream. This area has been designed as a primarily seasonal groundwater discharge area and would not provide significant recharge.

The proposed site development for the project area has also been designed to incorporate infiltration basins, through which pretreated stormwater will recharge the local aquifer providing ground water recharge.

4.2.2 Floodflow Alteration

The positioning of WCA-1, PCA-1, and WMA-2 bordering the Neversink River will be extremely valuable for flood storage and floodflow alteration. The volume of water stored within this created floodplain wetland system during such storm events is large and affects downstream flood elevations. These mitigation areas will also serve as additional storage areas, in tandem with the stormwater basins proposed as part of the overall site stormwater management plan.

The planned dredging activities in PEA-1will provide enhancement of floodflow alteration by supplying additional storage volume within the pond.

WMA-1 has been designed as a relatively steep sloped intermittent stream with limited floodflow alteration value.

4.2.3 Fish and Shellfish Habitat

Fish Habitat. The enhancement of existing ponds and the creation of open water areas have been specifically designed to provide improved fish habitat. The PCA-1 and WMA-2 will provide permanent habitat hydrologically connected to the Neversink River. With the stabilization of the site, these areas will provide improved habitat as siltation of adjacent unstable soils and waterways will be significantly decreased. PEA-1 will be deepened, allowing for a more continuous and reliable potential fish habitat.

WMA-1 has been designed to have an intermittent water regime with no standing water and will not provide fish habitat.

Shellfish Habitat. There is no existing shellfish habitat within the project area and the mitigation areas were not specifically designed to provide this function. An improvement of water quality will be realized by the stabilization of the existing site condition which has been a source of historic sedimentation.

4.2.4 Sediment/Toxicant/Pathogen Retention

All site runoff will be pre-treated before entering any wetland areas. It is anticipated that WCA-1, PCA-1, and WMA-2 will further reduce levels of contaminants (sediment/toxicant/pathogen) due to the proposed low and flat gradient, long detention times, and the planned dense vegetation and soils that will diffuse surface water flow. These wetland mitigation areas will also provide an important buffer for maintaining water quality conditions in the Neversink River.

The planned dredging activities in PEA-1will provide enhancement of sediment/toxicant/pathogen retention of the pond by supplying additional detention storage volume.

WMA-1 has been design to have a relatively steep slope, but it also has a vegetated forebay that will treat surface water prior to discharge to downstream wetland resources. WMA-1 will provide limited sediment/toxicant/ pathogen retention.

4.2.5 Nutrient Removal/Retention/Transformation

WCA-1, PCA-1, and WMA-2 will provide nutrient removal/retention/ transformation due to the proposed open water habitat, dense vegetation, and the planned diffuse and long surface water detention time within the mitigation areas.

PEA-1 will involve dredging activities that will provide improvement of removal/retention/transformation by contributing additional capacity for nutrient removal.

The proposed vegetated forebay within WMA-1 will treat surface water prior to discharge to downstream wetland resources. WMA-1 will provide limited nutrient removal/retention/transformation.

4.2.6 Production Export

WCA-1, WMA-2 and PCA-1 have been designed to contain a high diversity of plant species and habitat features conducive to wildlife and are positioned bordering the perennial Neversink River. As such, these mitigation areas will provide substantial production export values.

WMA-1 and PEA-1 will provide negligible enhancement of production export values.

4.2.7 Sediment/Shoreline Stabilization

WCA-1, PCA-1, and WMA-2 will provide sediment/shoreline stabilization due to the proposed dense vegetation and the length of waterway/waterbody planned. These wetland mitigation areas will also provide an important stabilization function for reducing sediment and maintaining water quality conditions in the Neversink River.

PEA-1 involves an open waterbody that experiences erosive forces. The proposed landscaping includes emergent vegetation that will provide the stabilization. These enhancements will provide sediment and shoreline stabilization functions.

The proposed landscaping associated with WMA-1 will stabilize the mitigation area and reduce sediment production prior to discharge to downstream wetland resources. WMA-1 will provide limited sediment and shoreline stabilization.

4.2.8 Wildlife Habitat

The physiographic and hydrologic settings of WCA 1, WMA-2 and PCA-1 have been designed to provide a bottomland, riverside, floodplain system which is seasonally flooded. Collectively, these wetland creation areas will have a variety of different wetland vegetation types which are considered valuable for wildlife. The length of bank and sinuous course within WMA-1 and PCA-1 provides important habitat edge for wildlife. WMA-2 and PCA-1 include overhang logs, root wad revetments, fallen tree shelters and/or large rocks that will provide shelter and basking areas for fish and wildlife. The surrounding cover types are complementary for wildlife and offer suitable buffering conditions from human activities for the Neversink River. Adjacent existing bank levees increase edge habitat and provide accessible upland areas during flood stages.

The PEA-1 will have a variety of different wetland vegetation types which are conducive to wildlife. The enhanced pond bank will provide important habitat edge for wildlife. An aquatic shelf vegetated with emergent and aquatic species selected for their habitat value will also be established. This habitat will substantially improve the breeding, feeding, and cover habitat of the existing basin for fisheries and amphibians. Additionally, trees and shrubs will be planted along the bank to shade the water surface and provide additional habitat.

The proposed landscaping associated with WMA-1 will include vegetation types found important to wildlife and create travel corridors to link upgradient resources to the Neversink River.

4.2.9 Recreation

There will be no public access to the mitigation areas. WCA-1, WMA-2 and PCA-1 will also provide an improved buffer to the Neversink River potentially improving recreational fishing use of the Neversink River. The 33-foot New York State Department of Environmental Conservation fishing easement will remain unaffected along the Neversink River.

4.2.10 Educational/Scientific

The educational/scientific value of the mitigation areas will be limited. The proposed mitigation areas will have diversity of habitat classes, the potential to provide educational mitigation monitoring and interpretative

educational displays. There will not be, however, any public access, similar to existing conditions.

4.2.11 Uniqueness/Heritage

The sites of the proposed mitigation areas do not possess a uniqueness/heritage value.

4.2.12 Visual Quality/Aesthetic

Each of the mitigation areas within the project will located within or adjacent to developed areas, are adjacent to roadways, and are not easily accessible. Even though the mitigation areas will contain a diversity of wetland habitats, the visual/aesthetic value of the project site mitigation will be negligible.

4.2.13 Endangered Species Habitat

None of the proposed site for the mitigation areas supports known endangered species or habitat.

5.0 Summary

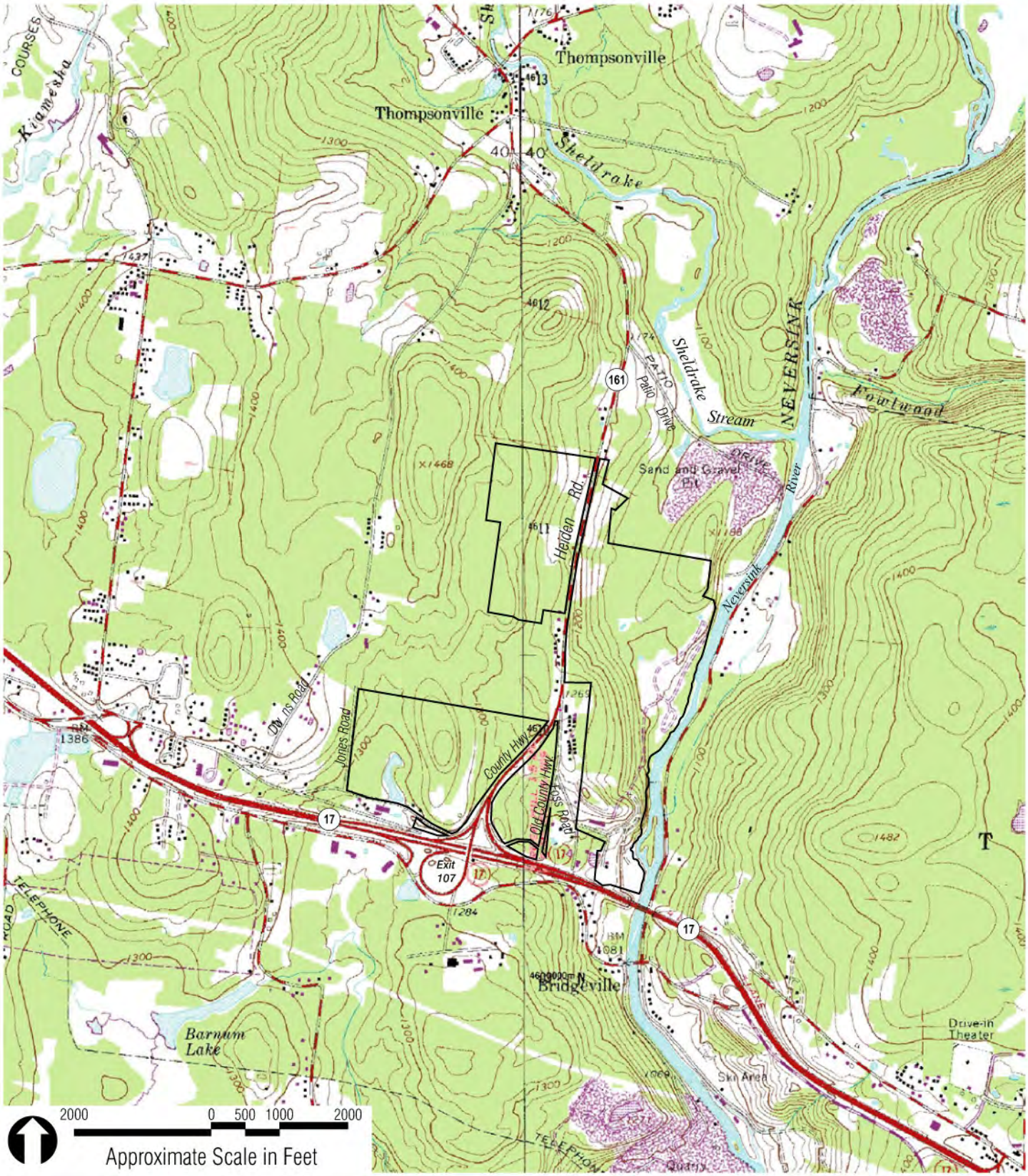
This function and value analysis was conducted to assess the impacts and mitigation of the proposed Stockbridge-Munsee Casino. The impact areas do possess and exhibit functions and values. Most significant are groundwater discharge and wildlife habitat, although these functions are limited due to relatively low productivity of the resource areas.

Although wetland functions and values will be impacted to various degrees, proposed mitigation will ensure that no net loss of these functions and values will occur. The proposed mitigation areas will provide functions and/or values of groundwater recharge/discharge, floodflow alteration, sediment/toxicant reduction, nutrient transformation, production export, and wildlife habitat comparable to or exceeding existing conditions. Other functions/values will be mitigated by the implementation of a Storm Water Pollution Prevention Plan, as well as a Storm Water Operations and Management Plan. Included in the storm water plans, as well as site design, are Best Management Practices that

will reduce storm water runoff velocities and quantities and improve the quality of the storm water runoff.

P:\7000\7419\Wetlands\May_05_Funtion-value\USACE Function_Values Report_May 2005 Rev4.doc

Figures



Date: April 3, 2001

Source: USGS Topographic Maps
Woodbridge, NY
Map Printed, 1966; Map Revised, 1988
Monticello, NY
Map Printed, 1966; Map Revised, 1988

NOTE: Contour Interval = 20 feet

Stockbridge-Munsee Casino
Thompson, New York

Site Location

Figure 1

Source: Rizzo Associates
Compiled Survey and GPS Data

NOTE: Contour Interval = 10 feet

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Project Site
Jurisdictional Wetlands

Figure 2

KEY

1 Main Entrance
2 Phase 1 Casino
1,500 Valet Spaces Below
Building Service/
Employee Drop-Off Below
3 Phase 1 Parking
5,000 Sp.@ 6 Levels
4 Phase 1 Employee Parking
1,500 Sp.@ 5 Levels
5 EMT/Fire/Tribal Court
In Employee Garage
6 Stormwater Management
7 Water Tower
8 Service Station
9 Warehouse & Storage
30,000 sf/150 Parking Spaces
10 Emergency Access
11 Utility Yard/
40,000 sf Power Plant
12 Phase 1 Parking
330 Spaces
13 Phase 2 Hotel
750 Rooms @ 15 Floors
14 Phase 2 Hotel Parking
900 Spaces
15 Wetland Mitigation

LEGEND

Pond
Wetland
Streams & River
Property Line
100-year Floodplain
100-year Floodway

600 0 150 300 600
Approximate Scale in Feet

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

EDAW

Proposed Site Plan Figure 3

Wetland Impacts

Wetland	Impact Area
Wetland 4	1.48 ac
Wetland 21	0.05 ac
Total=	**1.53 ac**

Stream Impacts

Stream	Impact Area
Stream 3	480 LF
Stream 4	162 LF
Stream 17	63 LF
Total=	**705 LF**

Pond Impacts

Pond	Impact Area
Pond 4	0.07 ac
Total=	**0.07 ac**

Basin Impacts

Basin	Impact Area
Basin 1	0.19 ac
Basin 2	0.18 ac
Total=	**0.37 ac**

Legend

Impact Area
Vegetated Wetland
Pond/Basin
Stream

200 0 50 100 200
Approximate Scale in Feet

TETRA TECH

Stockbridge-Munsee Casino
Thompson, New York

Wetland and
Waterway Impacts

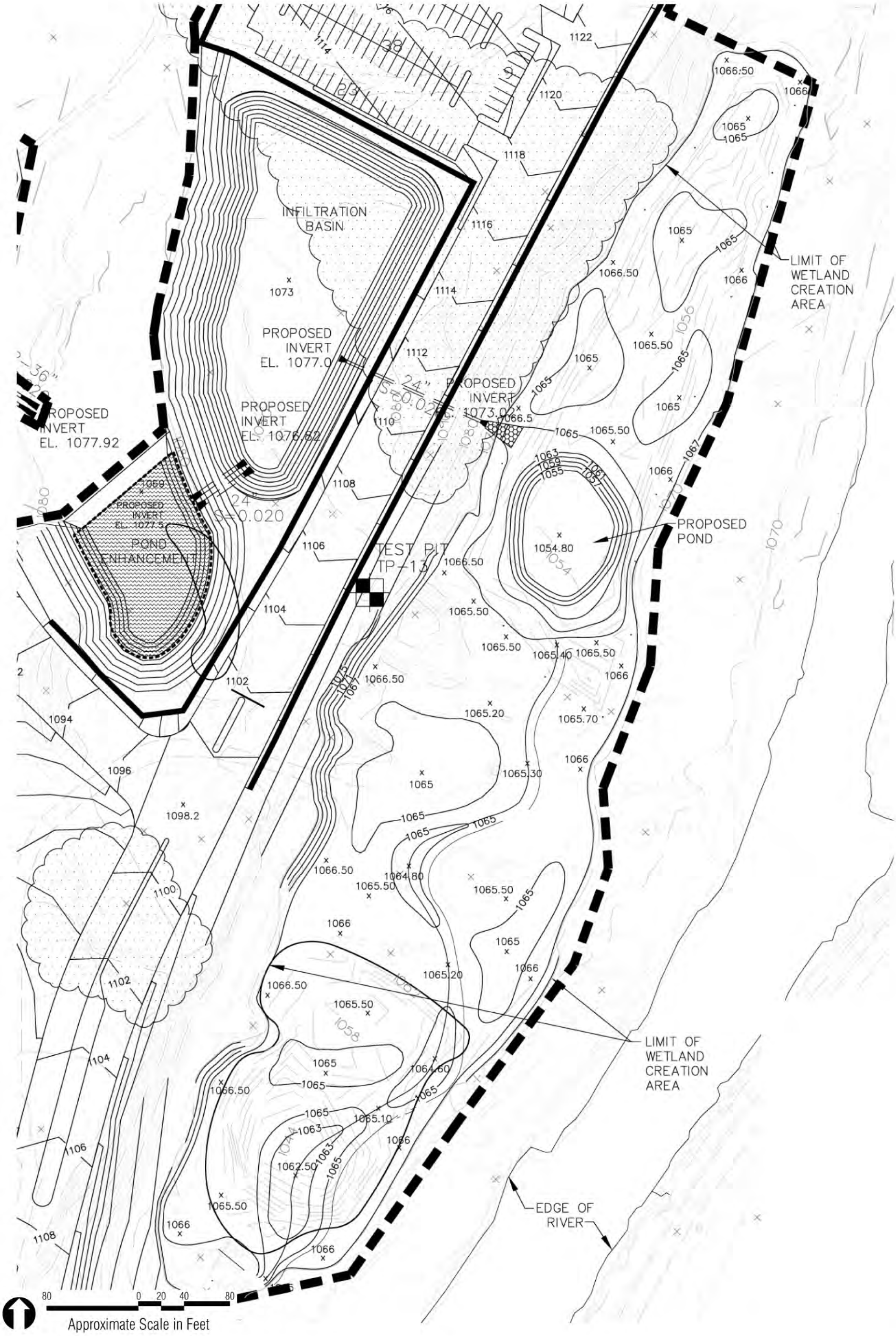
Figure 4

Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Wetland and Waterway
Mitigation Overview

Figure 5

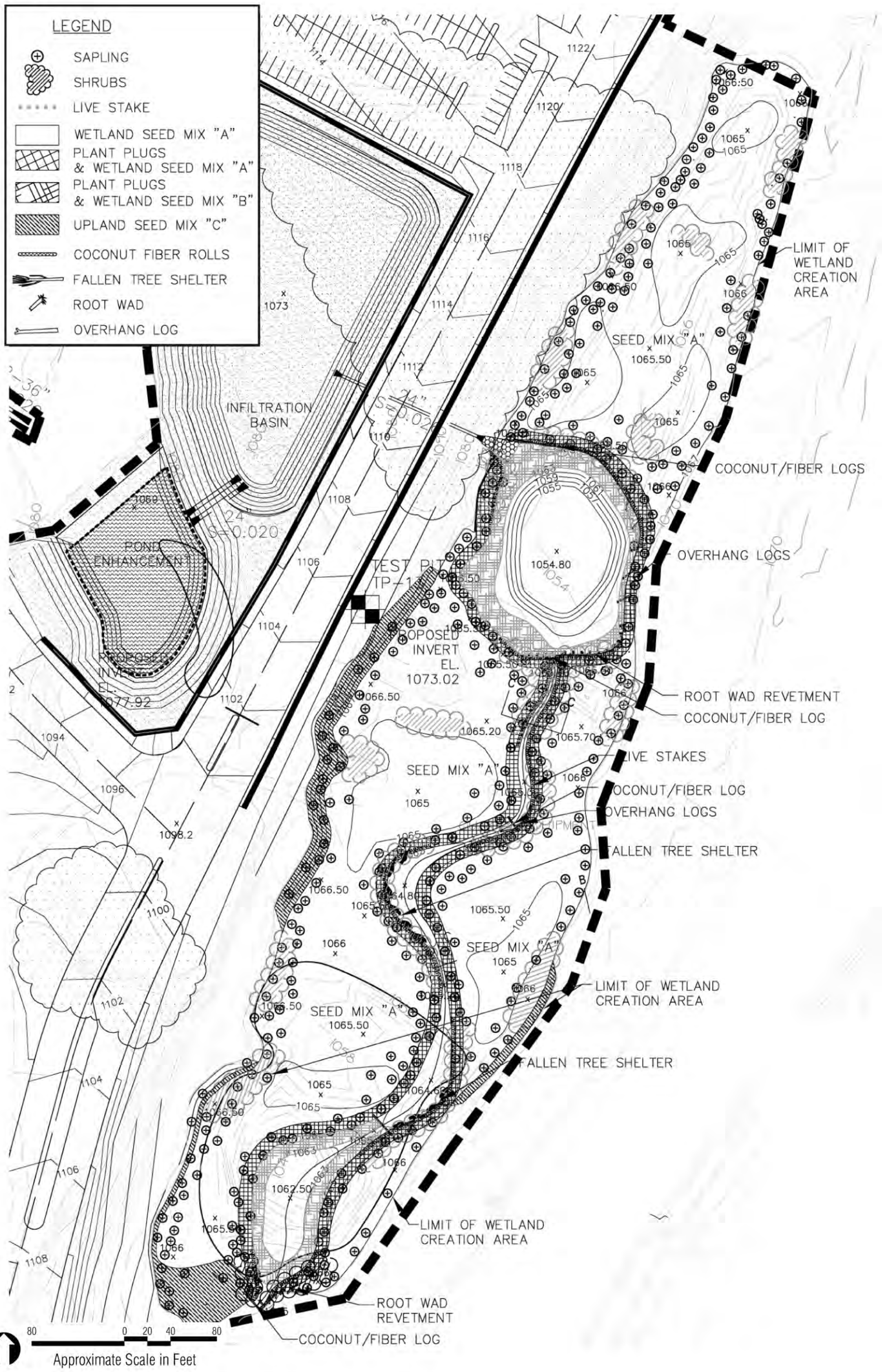


Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Wetland Creation Area
Grading Plan

Figure 6



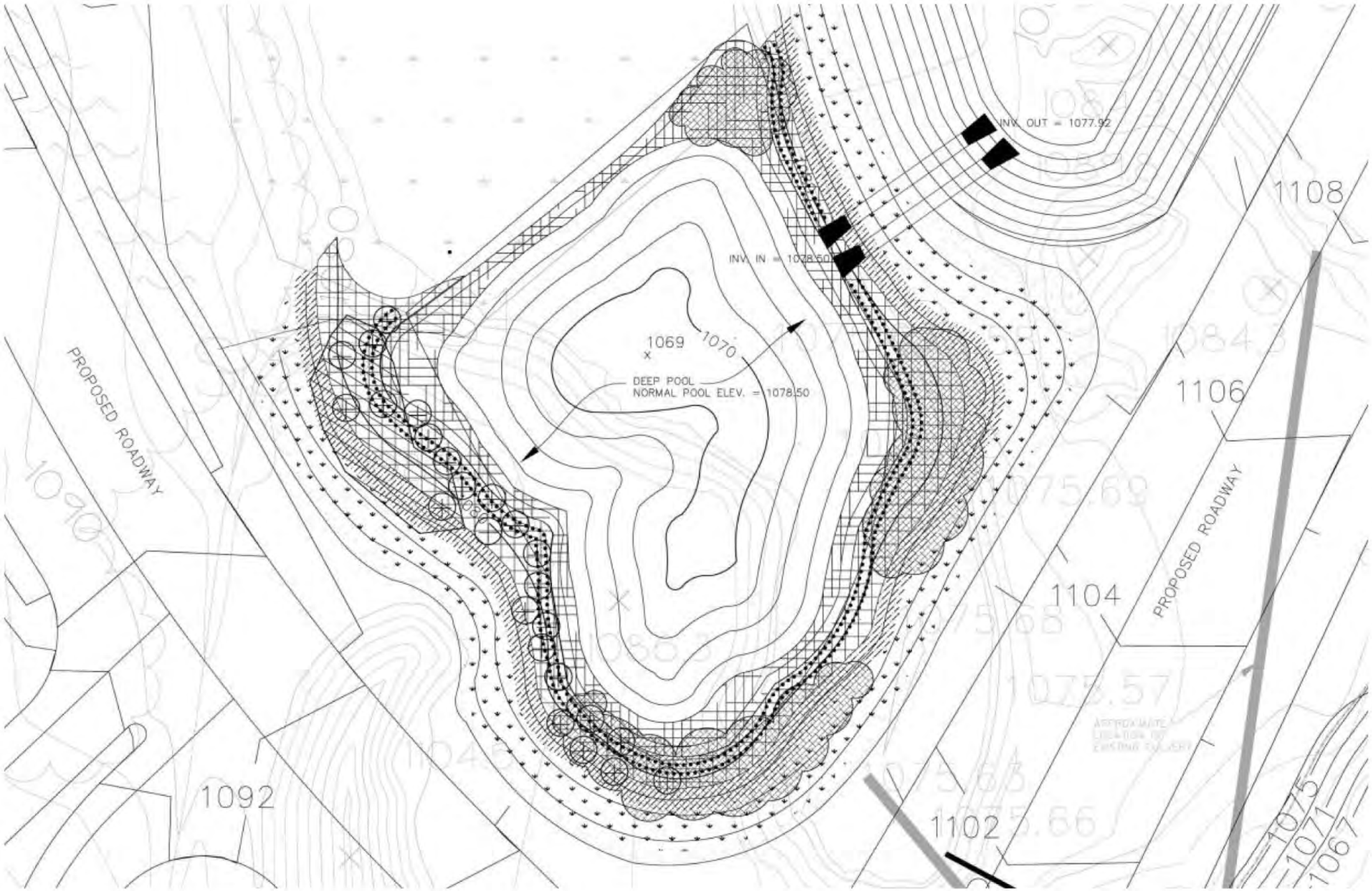
Stockbridge-Munsee Casino
Thompson, New York

TETRA TECH

Wetland Creation Area
Planting Plan

Figure 7

7419_pond_enhancement_planting_plan.cdr



LEGEND

- SHALLOW WATER BENCH
- SHORELINE FRINGE
- RIPARIAN FRINGE
- FLOODPLAIN TERRACE
- UPLAND
- SAPLING TREE
- SHRUB GROUPING
- LIVE STAKES

TETRA TECH

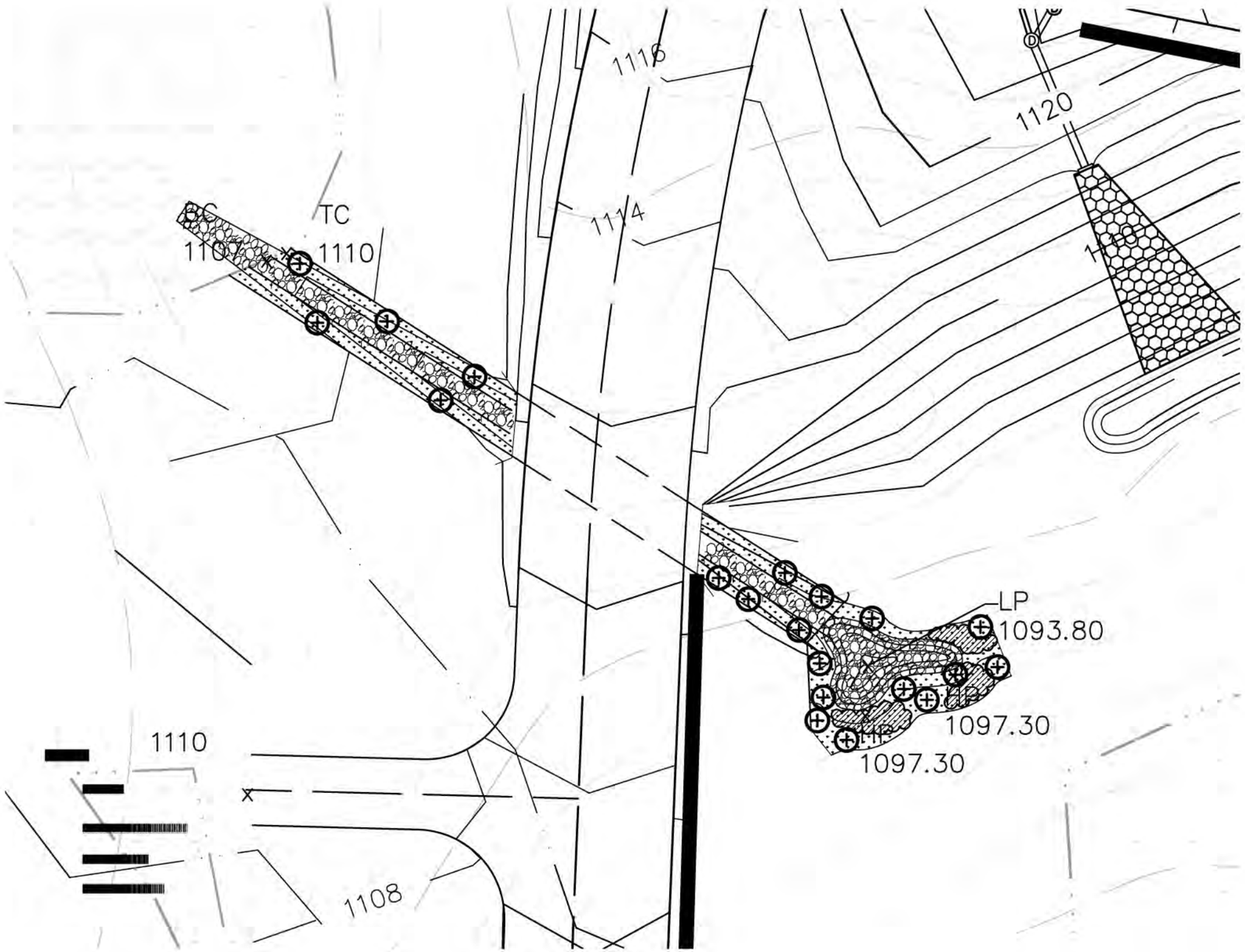
Stockbridge-Munsee Casino
Thompson, New York

30 0 7.5 15 30
Approximate Scale in Feet

Pond Enhancement Detail

Figure 8

7419_stream_enhancement_planting_plan.cdr



LEGEND

- RIP–RAP
- GRASS PLUGS & SEED
- SAPLING TREE
- SHRUB GROUPING

TETRA TECH

Stockbridge-Munsee Casino
Thompson, New York

Waterway Mitigation Area
Detail

Figure 9

40 0 10 20 40
Approximate Scale in Feet

Appendix A

Wetland Function-Values Forms

WETLAND FUNCTION - VALUE EVALUATION FORM

Total area of wetland **1.48 ac.** Human made? **No** Is wetland part of a wildlife corridor? **No** or a "habitat island"? **No**

Adjacent land use **Upland Forest/Mining** Distance to nearest roadway or other development **1,400 ft**

Dominant wetland systems present **PFO** Contiguous undeveloped buffer zone present **No**

Is the wetland a separate hydraulic system? **No** If not, where does the wetland lie in the drainage basin? **Mid**

How many tributaries contribute to the wetland? **1** Wildlife & vegetation diversity/abundance - **See Text**

Wetland I.D. **WIA-4**
Latitude -- Longitude--
Prepared by: **Rizzo** Date **2003**
Wetland Impact:
Type/Area **PFO/ 1.48 ac.**

Evaluation based on:
Office **XX** Field **XX**
Corps manual wetland delineation completed? Y **XX** N ____

Function/Value	Occurrence Y	Occurrence N	Rationale (Reference #)*	Principal Functions(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Yes		Yes: 5,7,13 No: 1,2,3,4,6,8,9,10,11,12,14,15,16,17,18	No	WIA-4 was observed to have high water table in the spring with areas of potential groundwater discharge.
Floodflow Alteration	Yes		Yes:2,3,5,9 No:1,4,6,7,8,10,11,12,13,14,15,16,17,18,19	No	WIA-4 does not contain thick vegetation and the floodflow alteration/desynchronization of this impact area is minimal. It can, however, hold small areas of standing water in depressions.
Fish and Shellfish Habitat		No	Yes: 1,2 N/A: 3-18	No	WIA-4 has an intermittent water regime, no standing water and does not provide fish or shellfish habitat.
Sediment/Toxicant Retention	Yes		Yes: 8,10 No: 1,2,3,4,5,6,7,9,11,12,13,14,16,15,17	No	WIA-4 has a small watershed with low sediment/ toxicant /pathogen production potential since it is comprised of upland forest. Existing vegetation can provide some function, though, given the size of the area.
Nutrient Removal	Yes		Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16	No	WIA-4 has a small, forested watershed of the impact area possesses low potential to generate excessive quantities of nutrients. Existing vegetation can provide some function, though, given the size of the area.

WETLAND FUNCTION - VALUE EVALUATION FORM

Production Export		No	Yes: 4 No: 1,2,3,5,6,7,8,9,10,11,12,13,14,15	No	WIA-4 does not contain a diverse community of vegetation nor is it associated with a significant wildlife population.
Sediment/Shoreline Stabilization		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16	No	WIA-4 does not abut perennial watercourses or open waterbodies that experience erosive forces or provide sediment and shoreline stabilization.
Wildlife Habitat	Yes		Yes:5,6,7,8,11,16,17 No:1,2,3,4,9,10,12,13,14,15,18,19,20, 21,22,23	Yes	The WIA-4 provides medium to high wildlife habitat function. This area does not provide a diversity of habitat, but contain moderate vegetative cover and suitable habitat conditions for typical wetland wildlife.
Recreation		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13	No	WIA-4 is located on restricted property where trespassing is prohibited.
Educational Scientific Value		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16	No	WIA-4 does not contain a diversity of vegetative habitat and has restricted public access.
Uniqueness/Heritage		No	Yes: No:1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,19 20,21,22,23,24,25,26,27,28,29,30,31,32	No	WIA-4 does not contain high species diversity or have educational/scientific values. No impacts to archaeological resources are anticipated
Visual Quality/Aesthetics		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,12,13 N/A: 11	No	WIA-4 has restricted public access and is adjacent to a roadway with limited view potential. The impact area also does not contain a diversity of wetland habitats and has been disturbed by human activities.
Endangered Species Habitat		No	Yes: No: 1,2,3	No	Review of state and federal databases indicates that no habitats of rare wetlands wildlife are located within the WIA-4.
Other					

Notes:

WETLAND FUNCTION - VALUE EVALUATION FORM

Total area of wetland **.05 ac.** Human made? **No** Is wetland part of a wildlife corridor? **No** or a "habitat island"? **No**

Adjacent land use **Upland Forest/Mining** Distance to nearest roadway or other development **1,000 ft**

Dominant wetland systems present **PFO** Contiguous undeveloped buffer zone present **No**

Is the wetland a separate hydraulic system? **No** If not, where does the wetland lie in the drainage basin? **Mid**

How many tributaries contribute to the wetland? **1** Wildlife & vegetation diversity/abundance - **See Text**

Wetland I.D. **WIA-21**
Latitude -- Longitude--
Prepared by: **Rizzo** Date **2003**
Wetland Impact:
Type/Area **PFO/ .05 ac.**

Evaluation based on:
Office **XX** Field **XX**
Corps manual wetland delineation completed? Y **XX** N ____

Function/Value	Occurrence Y	Occurrence N	Rationale (Reference #)*	Principal Functions(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Yes		Yes: 5,7,13 No: 1,2,3,4,6,8,9,10,11,12,14,15,16,17,18	No	WIA-21 was observed to have high water table in the spring with areas of potential groundwater discharge.
Floodflow Alteration		No	Yes:2,3,5,9 No:1,4,6,7,8,10,11,12,13,14,15,16,17,18,19	No	WIA-21 does not contain thick vegetation and the floodflow alteration/desynchronization of this impact area is minimal.
Fish and Shellfish Habitat		No	Yes: 1,2 N/A: 3-18	No	WIA-21 has an intermittent water regime, no standing water and does not provide fish and shellfish habitat.
Sediment/Toxicant Retention		No	Yes: 8,10 No: 1,2,3,4,5,6,7,9,11,12,13,14,15,16,17	No	WIA-21 has a small watershed with low sediment/ toxicant /pathogen production potential since it is comprised of upland forest.
Nutrient Removal		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16	No	WIA-21 has a small, forested watershed of the impact area possesses low potential to generate excessive quantities of nutrients.

WETLAND FUNCTION - VALUE EVALUATION FORM

Production Export		No	Yes: 4 No: 1,2,3,5,6,7,8,9,10,11,12,13,14,15	No	WIA-21does not contain a diverse community of vegetation nor is it associated with a significant wildlife population.
Sediment/Shoreline Stabilization		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16	No	WIA-21 does not abut perennial watercourses or open waterbodies that experience erosive forces or provide sediment and shoreline stabilization.
Wildlife Habitat	Yes		Yes:5,6,7,8,11,16,17 No:1,2,3,4,9,10,12,13,14,15,18,19,20, 21,22,23	Yes	The WIA-21 provides medium to high wildlife habitat function. This area, due to it's size, does not provide a diversity of habitat, but contain moderate vegetative cover and suitable habitat conditions for typical wetland wildlife.
Recreation		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13	No	WIA-21 is located on restricted property where trespassing is prohibited.
Educational Scientific Value		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16	No	WIA-21 does not contain a diversity of vegetative habitat and has restricted public access.
Uniqueness/Heritage		No	Yes: No:1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,19 20,21,22,23,24,25,26,27,28,29,30,31,32	No	WIA-21does not contain high species diversity or have educational/scientific values. No impacts to archaeological resources are anticipated
Visual Quality/Aesthetics		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,12,13 N/A: 11	No	WIA-21 has restricted public access and the impact area also does not contain a diversity of wetland habitats and has been disturbed by human activities.
Endangered Species Habitat		No	Yes: No: 1,2,3	No	Review of state and federal databases indicates that no habitats of rare wetlands wildlife are located within WIA-21.
Other					

Notes:

WETLAND FUNCTION - VALUE EVALUATION FORM

Total area of wetland **705 ln.ft.** Human made? **No** Is wetland part of a wildlife corridor? **No** or a "habitat island"? **No**
Intermittent Streams SIA 3,4,&17
Adjacent land use **Upland Forest/Mining** Distance to nearest roadway or other development **1,000 ft**

Dominant wetland systems present Intermittent Streams Contiguous undeveloped buffer zone present **No**

Is the wetland a separate hydraulic system? **No** If not, where does the wetland lie in the drainage basin? **Mid**

How many tributaries contribute to the wetland? **1** Wildlife & vegetation diversity/abundance - **See Text**

Wetland I.D. **SIA 3, 4, & 17**
Latitude -- Longitude--
Prepared by: **Rizzo** Date **2003**
Wetland Impact:
Type/Area **WW 705 ln.ft.**

Evaluation based on:
Office **XX** Field **XX**
Corps manual wetland delineation completed? Y **XX** N ____

Function/Value	Occurrence Y	Occurrence N	Rationale (Reference #)*	Principal Functions(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Yes		Yes:5, 7,13 No: 1,2,3,4,6,8,9,10,11,12,14,15,16,17,18	No	The impacted streams were observed to have high water table in the spring with areas of potential groundwater discharge.
Floodflow Alteration		No	Yes:2,3,5,9 No:1,4,6,7,8,10,11,12,13,14,15,16,17,18,19	No	None of the impacted streams contain thick vegetation and the floodflow alteration/desynchronization of these impact areas is minimal.
Fish and Shellfish Habitat		No	Yes: 1,2 N/A: 3-18	No	The impacted streams have intermittent water regimes, no standing water and do not provide fish or shellfish habitat.
Sediment/Toxicant Retention		No	Yes: 8,10 No: 1,2,3,4,5,6,7,9,11,12,13,14,15,16,17	No	The impacted streams have small watersheds with low sediment/ toxicant /pathogen production potential since it is comprised of upland forest.
Nutrient Removal		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16	No	The impacted streams possess low potential to generate excessive quantities of nutrients.

WETLAND FUNCTION - VALUE EVALUATION FORM

Production Export		No	Yes: 4 No: 1,2,3,5,6,7,8,9,10,11,12,13,14,15	No	The impacted streams do not contain a diverse community of vegetation or are associated with a significant wildlife population.
Sediment/Shoreline Stabilization		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16	No	The impacted streams do not experience significant erosive forces or provide sediment and shoreline stabilization.
Wildlife Habitat	Yes		Yes:5,6,7,8,16,17 No:1,2,3,4,9,10,11,12,13,14,15,18,19,20, 21,22,23	Yes	The impacted streams have limited vegetation growth and cover to provide significant wildlife habitat value. The intermittent streams do not contain permanent water or provide habitat for aquatic organisms. As such, they likely provide only nominal wildlife function.
Recreation		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13	No	The impacted streams are located on restricted property where trespassing is prohibited.
Educational Scientific Value		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16	No	The impacted streams do not contain a diversity of vegetative habitat and has restricted public access.
Uniqueness/Heritage		No	Yes: No:1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,19 20,21,22,23,24,25,26,27,28,29,30,31,32	No	The impacted streams do not contain high species diversity or have educational/scientific values. No impacts to archaeological resources are anticipated
Visual Quality/Aesthetics		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,12,13 N/A: 11	No	The impacted streams have restricted public access and the impact areas do not contain a diversity of wetland habitats and has been disturbed by human activities.
Endangered Species Habitat		No	Yes: No: 1,2,3	No	Review of state and federal databases indicates that no habitats of rare wetlands wildlife are located within the impacted streams.
Other					

Notes:

WETLAND FUNCTION - VALUE EVALUATION FORM

Total area of wetland **.07 ac.** Human made? **Yes** Is wetland part of a wildlife corridor? **No** or a "habitat island"? **No**

Adjacent land use **Upland Forest/Mining** Distance to nearest roadway or other development **1,000 ft**

Dominant wetland systems present **Pond** Contiguous undeveloped buffer zone present **No**

Is the wetland a separate hydraulic system? **No** If not, where does the wetland lie in the drainage basin? **Mid**

How many tributaries contribute to the wetland? **1** Wildlife & vegetation diversity/abundance - **See Text**

Wetland I.D. **PIA 4**
Latitude -- Longitude--
Prepared by: **Rizzo** Date **2003**
Wetland Impact:
Type/Area **OW .07ac.**

Evaluation based on:
Office **XX** Field **XX**
Corps manual wetland delineation completed? Y **XX** N ____

Function/Value	Occurrence Y	Occurrence N	Rationale (Reference #)*	Principal Functions(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Yes		Yes: 5,9 No:1,2,3,4,6,7,8,9,10,11,12,13,14,15,16,17,18	No	PIA-4 is a small and shallow pond with limited groundwater discharge and recharge.
Floodflow Alteration	Yes		Yes:2,3,5,7,9 No:1,4,6,8,10,11,12,13,14,15,16,17,18,19	No	PIA-4 is a man altered pond with a small watershed located on the base of a steep slope. The pond absorbs floodwaters from the small surrounding contributory area and has a relatively constricted outlet. PIA-4 provides limited floodflow alteration potential.
Fish and Shellfish Habitat	Yes		Yes: 1,2 N/A: 3-18	No	PIA-4 does have the potential to support a warm water fishery. No fish were observed during site investigations and low oxygen condition would be expected during the summer months. PIA-4 provides minimal fish habitat potential.
Sediment/Toxicant Retention		No	Yes: 8,10 No: 1,2,3,4,5,6,7,9,11,12,13,14,15,16,17	No	PIA-4 is a man altered pond with a small watershed located on the base of a slope. The pond contains runoff from the small surrounding contributory area and has a relatively constricted outlet. PIA-4 provides minimal sediment/toxicant/pathogen retention potential.
Nutrient Removal		No	Yes: 2,5,14 No: 1,3,4,6,7,8,9,10,11,12,13,15,16	No	PIA-4 possesses low potential to generate excessive quantities of nutrients.

WETLAND FUNCTION - VALUE EVALUATION FORM

Production Export		No	Yes: 4 No: 1,2,3,5,6,7,8,9,10,11,12,13,14,15	No	PIA-4 does not contain a diverse community of vegetation or are associated with a significant wildlife population.
Sediment/Shoreline Stabilization		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16	No	PIA-4 does not experience significant erosive forces or provide sediment and shoreline stabilization.
Wildlife Habitat	Yes		Yes:5,6,7,8,11,16,17 No:1,2,3,4,9,10,12,13,14,15,18,19,20, 21,22,23	Yes	PIA-4 provides medium to high wildlife habitat function. This area does not provide a diversity of habitat, but contain moderate vegetative cover and suitable habitat conditions for typical wetland wildlife.
Recreation		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13	No	PIA-4 is located on restricted property where trespassing is prohibited.
Educational Scientific Value		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16	No	PIA-4 does not contain a diversity of vegetative habitat and has restricted public access.
Uniqueness/Heritage		No	Yes: No:1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,19 20,21,22,23,24,25,26,27,28,29,30,31,32	No	PIA-4 does not contain high species diversity or have educational/scientific values. No impacts to archaeological resources are anticipated
Visual Quality/Aesthetics		No	Yes: No: 1,2,3,4,5,6,7,8,9,10,12,13 N/A:11	No	PIA-4 has restricted public access and the impact area does not contain a diversity of wetland habitats and has been disturbed by human activities.
Endangered Species Habitat		No	Yes: No: 1,2,3	No	Review of state and federal databases indicates that no habitats of rare wetlands wildlife are located within PIA-4.
Other					

Notes:

Appendix B

Wetland Evaluation Supporting Documentation

Appendix A

Wetland evaluation supporting documentation; Reproducible forms.

Below is an example list of considerations that was used for a New Hampshire highway project. Considerations are flexible, based on best professional judgment and interdisciplinary team consensus. This example provides a comprehensive base, however, and may only need slight modifications for use in other projects.

GROUNDWATER RECHARGE/DISCHARGE— This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. It refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

CONSIDERATIONS/QUALIFIERS

1. Public or private wells occur downstream of the wetland.
2. Potential exists for public or private wells downstream of the wetland.
3. Wetland is underlain by stratified drift.
4. Gravel or sandy soils present in or adjacent to the wetland.
5. Fragipan does not occur in the wetland.
6. Fragipan, impervious soils, or bedrock does occur in the wetland.
7. Wetland is associated with a perennial or intermittent watercourse.
8. Signs of groundwater recharge are present or piezometer data demonstrates recharge.
9. Wetland is associated with a watercourse but lacks a defined outlet or contains a constricted outlet.
10. Wetland contains only an outlet, no inlet.
11. Groundwater quality of stratified drift aquifer within or downstream of wetland meets drinking water standards.
12. Quality of water associated with the wetland is high.
13. Signs of groundwater discharge are present (e.g., springs).
14. Water temperature suggests it is a discharge site.
15. Wetland shows signs of variable water levels.
16. Piezometer data demonstrates discharge.
17. Other

FLOODFLOW ALTERATION (Storage & Desynchronization) — This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

CONSIDERATIONS/QUALIFIERS

1. Area of this wetland is large relative to its watershed.
2. Wetland occurs in the upper portions of its watershed.
3. Effective flood storage is small or non-existent upslope of or above the wetland.
4. Wetland watershed contains a high percent of impervious surfaces.
5. Wetland contains hydric soils which are able to absorb and detain water.
6. Wetland exists in a relatively flat area that has flood storage potential.
7. Wetland has an intermittent outlet, ponded water, or signs are present of variable water level.
8. During flood events, this wetland can retain higher volumes of water than under normal or average rainfall conditions.
9. Wetland receives and retains overland or sheet flow runoff from surrounding uplands.
10. In the event of a large storm, this wetland may receive and detain excessive flood water from a nearby watercourse.
11. Valuable properties, structures, or resources are located in or near the floodplain downstream from the wetland.
12. The watershed has a history of economic loss due to flooding.
13. This wetland is associated with one or more watercourses.
14. This wetland watercourse is sinuous or diffuse.
15. This wetland outlet is constricted.
16. Channel flow velocity is affected by this wetland.
17. Land uses downstream are protected by this wetland.
18. This wetland contains a high density of vegetation.
19. Other

FISH AND SHELLFISH HABITAT (FRESHWATER) — This function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

CONSIDERATIONS/QUALIFIERS

1. Forest land dominant in the watershed above this wetland.
2. Abundance of cover objects present.

STOP HERE IF THIS WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE

3. Size of this wetland is able to support large fish/shellfish populations.
4. Wetland is part of a larger, contiguous watercourse.
5. Wetland has sufficient size and depth in open water areas so as not to freeze solid and retain some open water during winter.
6. Stream width (bank to bank) is more than 50 feet.
7. Quality of the watercourse associated with this wetland is able to support healthy fish/shellfish populations.
8. Streamside vegetation provides shade for the watercourse.
9. Spawning areas are present (submerged vegetation or gravel beds).
10. Food is available to fish/shellfish populations within this wetland.
11. Barrier(s) to anadromous fish (such as dams, including beaver dams, waterfalls, road crossing) are absent from the stream reach associated with this wetland.
12. Evidence of fish is present.
13. Wetland is stocked with fish.
14. The watercourse is persistent.
15. Man-made streams are absent.
16. Water velocities are not too excessive for fish usage.
17. Defined stream channel is present.
18. Other

Although the above example refers to freshwater wetlands, it can also be adapted for marine ecosystems. The following is an example provided by the National Marine Fisheries Service (NMFS) of an adaptation for the fish and shellfish function.

FISH AND SHELLFISH HABITAT (MARINE) — This function considers the effectiveness of wetlands, embayments, tidal flats, vegetated shallows, and other environments in supporting marine resources such as fish, shellfish, marine mammals, and sea turtles.

CONSIDERATIONS/QUALIFIERS

1. Special aquatic sites (tidal marsh, mud flats, eelgrass beds) are present.
2. Suitable spawning habitat is present at the site or in the area.
3. Commercially or recreationally important species are present or suitable habitat exists.
4. The wetland/waterway supports prey for higher trophic level marine organisms.
5. The waterway provides migratory habitat for anadromous fish.
6. Essential fish habitat, as defined by the 1996 amendments to the Magnuson-Stevens Fishery & Conservation Act, is present (consultation with NMFS may be necessary).
7. Other

SEDIMENT/TOXICANT/PATHOGEN RETENTION — This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

CONSIDERATIONS/QUALIFIERS

1. Potential sources of excess sediment are in the watershed above the wetland.
2. Potential or known sources of toxicants are in the watershed above the wetland.
3. Opportunity for sediment trapping by slow moving water or deepwater habitat are present in this wetland.
4. Fine grained mineral or organic soils are present.
5. Long duration water retention time is present in this wetland.
6. Public or private water sources occur downstream.
7. The wetland edge is broad and intermittently aerobic.
8. The wetland is known to have existed for more than 50 years.
9. Drainage ditches have not been constructed in the wetland.

STOP HERE IF WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE.

10. Wetland is associated with an intermittent or perennial stream or a lake.
11. Channelized flows have visible velocity decreases in the wetland.
12. Effective floodwater storage in wetland is occurring. Areas of impounded open water are present.
13. No indicators of erosive forces are present. No high water velocities are present.
14. Diffuse water flows are present in the wetland.
15. Wetland has a high degree of water and vegetation interspersion.
16. Dense vegetation provides opportunity for sediment trapping and/or signs of sediment accumulation by dense vegetation is present.
17. Other

NUTRIENT REMOVAL/RETENTION/TRANSFORMATION — This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.

CONSIDERATIONS/QUALIFIERS

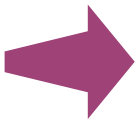
1. Wetland is large relative to the size of its watershed.
2. Deep water or open water habitat exists.
3. Overall potential for sediment trapping exists in the wetland.

4. Potential sources of excess nutrients are present in the watershed above the wetland.
5. Wetland saturated for most of the season. Ponded water is present in the wetland.
6. Deep organic/sediment deposits are present.
7. Slowly drained fine grained mineral or organic soils are present.
8. Dense vegetation is present.
9. Emergent vegetation and/or dense woody stems are dominant.
10. Opportunity for nutrient attenuation exists.
11. Vegetation diversity/abundance sufficient to utilize nutrients.

STOP HERE IF WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE.

12. Waterflow through this wetland is diffuse.
13. Water retention/detention time in this wetland is increased by constricted outlet or thick vegetation.
14. Water moves slowly through this wetland.
15. Other

PRODUCTION EXPORT (Nutrient) — This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.



CONSIDERATIONS/QUALIFIERS

1. Wildlife food sources grow within this wetland.
2. Detritus development is present within this wetland
3. Economically or commercially used products found in this wetland.
4. Evidence of wildlife use found within this wetland.
5. Higher trophic level consumers are utilizing this wetland.
6. Fish or shellfish develop or occur in this wetland.
7. High vegetation density is present.
8. Wetland exhibits high degree of plant community structure/species diversity.
9. High aquatic vegetative diversity/abundance is present.
10. Nutrients exported in wetland watercourses (permanent outlet present).
11. “Flushing” of relatively large amounts of organic plant material occurs from this wetland.
12. Wetland contains flowering plants that are used by nectar-gathering insects.
13. Indications of export are present.
14. High production levels occurring, however, no visible signs of export (assumes export is attenuated).
15. Other

SEDIMENT/SHORELINE STABILIZATION — This function considers the effectiveness of a wetland to stabilize streambanks and shorelines against erosion.

CONSIDERATIONS/QUALIFIERS

1. Indications of erosion or siltation are present.
2. Topographical gradient is present in wetland.
3. Potential sediment sources are present up-slope.
4. Potential sediment sources are present upstream.
5. No distinct shoreline or bank is evident between the waterbody and the wetland or upland.
6. A distinct step between the open waterbody or stream and the adjacent land exists (i.e., sharp bank) with dense roots throughout.
7. Wide wetland (>10’) borders watercourse, lake, or pond.
8. High flow velocities in the wetland.
9. The watershed is of sufficient size to produce channelized flow.
10. Open water fetch is present.
11. Boating activity is present.
12. Dense vegetation is bordering watercourse, lake, or pond.
13. High percentage of energy-absorbing emergents and/or shrubs border a watercourse, lake, or pond.
14. Vegetation is comprised of large trees and shrubs that withstand major flood events or erosive incidents and stabilize the shoreline on a large scale (feet).
15. Vegetation is comprised of a dense resilient herbaceous layer that stabilizes sediments and the shoreline on a small scale (inches) during minor flood events or potentially erosive events.
16. Other

WILDLIFE HABITAT — This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered. Species lists of observed and potential animals should be included in the wetland assessment report.[1]

CONSIDERATIONS/QUALIFIERS

1. Wetland is not degraded by human activity.
2. Water quality of the watercourse, pond, or lake associated with this wetland meets or exceeds Class A or B standards.
3. Wetland is not fragmented by development.
4. Upland surrounding this wetland is undeveloped.
5. More than 40% of this wetland edge is bordered by upland wildlife habitat (e.g., brushland, woodland, active farmland, or idle land) at least 500 feet in width.
6. Wetland is contiguous with other wetland systems connected by a watercourse or lake.
7. Wildlife overland access to other wetlands is present.
8. Wildlife food sources are within this wetland or are nearby.
9. Wetland exhibits a high degree of interspersion of vegetation classes and/or open water.
10. Two or more islands or inclusions of upland within the wetland are present.
11. Dominant wetland class includes deep or shallow marsh or wooded swamp.
12. More than three acres of shallow permanent open water (less than 6.6 feet deep), including streams in or adjacent to wetland, are present.
13. Density of the wetland vegetation is high.
14. Wetland exhibits a high degree of plant species diversity.
15. Wetland exhibits a high degree of diversity in plant community structure (e.g., tree/shrub/vine/grasses/mosses)
16. Plant/animal indicator species are present. (List species for project)
17. Animal signs observed (tracks, scats, nesting areas, etc.)
18. Seasonal uses vary for wildlife and wetland appears to support varied population diversity/abundance during different seasons.
19. Wetland contains or has potential to contain a high population of insects.
20. Wetland contains or has potential to contain large amphibian populations.
21. Wetland has a high avian utilization or its potential.
22. Indications of less disturbance-tolerant species are present.
23. Signs of wildlife habitat enhancement are present (birdhouses, nesting boxes, food sources, etc.).
24. Other

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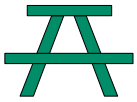
[1]In March 1995, a rapid wildlife habitat assessment method was completed by a University of Massachusetts research team with funding and oversight provided by the New England Transportation Consortium. The method is called WEThings (wetland habitat indicators for non-game species). It produces a list of potential wetland-dependent mammal, reptile, and amphibian species that may be present in the wetland. The output is based on observable habitat characteristics documented on the field data form. This method may be used to generate the wildlife species list recommended as backup information to the wetland evaluation form and to augment the considerations. Use of this method should first be coordinated with the Corps project manager. A computer program is also available to expedite this process.

RECREATION (Consumptive and Non-Consumptive) — This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals, or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish these resources of the wetland.



CONSIDERATIONS/QUALIFIERS

1. Wetland is part of a recreation area, park, forest, or refuge.
2. Fishing is available within or from the wetland.
3. Hunting is permitted in the wetland.
4. Hiking occurs or has potential to occur within the wetland.
5. Wetland is a valuable wildlife habitat.
6. The watercourse, pond, or lake associated with the wetland is unpolluted.
7. High visual/aesthetic quality of this potential recreation site.
8. Access to water is available at this potential recreation site for boating, canoeing, or fishing.
9. The watercourse associated with this wetland is wide and deep enough to accommodate canoeing and/or non-powered boating.
10. Off-road public parking available at the potential recreation site.
11. Accessibility and travel ease is present at this site.
12. The wetland is within a short drive or safe walk from highly populated public and private areas.
13. Other

EDUCATIONAL/SCIENTIFIC VALUE — This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

CONSIDERATIONS/QUALIFIERS

1. Wetland contains or is known to contain threatened, rare, or endangered species.
2. Little or no disturbance is occurring in this wetland.
3. Potential educational site contains a diversity of wetland classes which are accessible or potentially accessible.
4. Potential educational site is undisturbed and natural.
5. Wetland is considered to be a valuable wildlife habitat.
6. Wetland is located within a nature preserve or wildlife management area.
7. Signs of wildlife habitat enhancement present (bird houses, nesting boxes, food sources, etc.).
8. Off-road parking at potential educational site suitable for school bus access in or near wetland.
9. Potential educational site is within safe walking distance or a short drive to schools.
10. Potential educational site is within safe walking distance to other plant communities.
11. Direct access to perennial stream at potential educational site is available.
12. Direct access to pond or lake at potential educational site is available.
13. No known safety hazards exist within the potential educational site.
14. Public access to the potential educational site is controlled.
15. Handicap accessibility is available.
16. Site is currently used for educational or scientific purposes.
17. Other

UNIQUENESS/HERITAGE — This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation, and habitat diversity.

CONSIDERATIONS/QUALIFIERS

1. Upland surrounding wetland is primarily urban.
2. Upland surrounding wetland is developing rapidly.
3. More than 3 acres of shallow permanent open water (less than 6.6 feet deep), including streams, occur in wetlands.
4. Three or more wetland classes are present.
5. Deep and/or shallow marsh or wooded swamp dominate.
6. High degree of interspersion of vegetation and/or open water occur in this wetland.
7. Well-vegetated stream corridor (15 feet on each side of the stream) occurs in this wetland.
8. Potential educational site is within a short drive or a safe walk from schools.
9. Off-road parking at potential educational site is suitable for school buses.
10. No known safety hazards exist within this potential educational site.
11. Direct access to perennial stream or lake exists at potential educational site.
12. Two or more wetland classes are visible from primary viewing locations.
13. Low-growing wetlands (marshes, scrub-shrub, bogs, open water) are visible from primary viewing locations.
14. Half an acre of open water or 200 feet of stream is visible from the primary viewing locations.
15. Large area of wetland is dominated by flowering plants or plants that turn vibrant colors in different seasons.
16. General appearance of the wetland visible from primary viewing locations is unpolluted and/or undisturbed.
17. Overall view of the wetland is available from the surrounding upland.
18. Quality of the water associated with the wetland is high.
19. Opportunities for wildlife observations are available.
20. Historical buildings are found within the wetland.
21. Presence of pond or pond site and remains of a dam occur within the wetland.
22. Wetland is within 50 yards of the nearest perennial watercourse.
23. Visible stone or earthen foundations, berms, dams, standing structures, or associated features occur within the wetland.
24. Wetland contains critical habitat for a state- or federally-listed threatened or endangered species.
25. Wetland is known to be a study site for scientific research.
26. Wetland is a natural landmark or recognized by the state natural heritage inventory authority as an exemplary natural community.
27. Wetland has local significance because it serves several functional values.
28. Wetland has local significance because it has biological, geological, or other features that are locally rare or unique.
29. Wetland is known to contain an important archaeological site.
30. Wetland is hydrologically connected to a state or federally designated scenic river.
31. Wetland is located in an area experiencing a high wetland loss rate.
32. Other

VISUAL QUALITY/AESTHETICS — This value considers the visual and aesthetic quality or usefulness of the wetland.

CONSIDERATIONS/QUALIFIERS

1. Multiple wetland classes are visible from primary viewing locations.
2. Emergent marsh and/or open water are visible from primary viewing locations.
3. A diversity of vegetative species is visible from primary viewing locations.
4. Wetland is dominated by flowering plants or plants that turn vibrant colors in different seasons.
5. Land use surrounding the wetland is undeveloped as seen from primary viewing locations.
6. Visible surrounding land use form contrasts with wetland.
7. Wetland views absent of trash, debris, and signs of disturbance.
8. Wetland is considered to be a valuable wildlife habitat.
9. Wetland is easily accessed.
10. Low noise level at primary viewing locations.
11. Unpleasant odors absent at primary viewing locations.
12. Relatively unobstructed sight line exists through wetland.
13. Other

ENDANGERED SPECIES HABITAT — This value considers the suitability of the wetland to support threatened or endangered species.

ES

CONSIDERATIONS/QUALIFIERS

1. Wetland contains or is known to contain threatened or endangered species.
2. Wetland contains critical habitat for a state or federally listed threatened or endangered species.

Appendix S

Wetland Creation Area Water Budget

TETRA TECH

Pond 8P: Wetland

Inflow Area = 784.880 ac, Inflow Depth = 0.32" for 1-yr event
Inflow = 44.11 cfs @ 13.48 hrs, Volume= 20.785 af
Outflow = 32.68 cfs @ 15.11 hrs, Volume= 20.063 af, Atten= 26%, Lag= 97.7 min
Primary = 32.68 cfs @ 15.11 hrs, Volume= 20.063 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 1,066.10' @ 15.11 hrs Surf.Area= 148,851 sf Storage= 180,335 cf
Plug-Flow detention time= 131.5 min calculated for 20.060 af (97% of inflow)
Center-of-Mass det. time= 113.0 min (1,117.0 - 1,004.0)

#	Invert	Avail.Storage	Storage Description
1	1,064.50'	514,711 cf	**Custom Stage Data (Conic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,064.50	54,348	0	0	54,348
1,065.00	71,146	31,279	31,279	71,152
1,067.00	212,426	271,005	302,285	212,455
1,068.00	212,426	212,426	514,711	214,089

#	Routing	Invert	Outlet Devices
1	Primary	1,065.00'	**102.7 deg x 8.0' long Sharp-Crested Vee/Trap Weir** C= 2.49
2	Primary	1,067.00'	**2,000.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=32.68 cfs @ 15.11 hrs HW=1,066.10' TW=0.00' (Dynamic Tailwater)
└─**1=Sharp-Crested Vee/Trap Weir** (Weir Controls 32.68 cfs @ 3.2 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Hydrograph for Pond 8P: Wetland

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	1,064.50	0.00
2.00	0.00	0	1,064.50	0.00
4.00	0.00	0	1,064.50	0.00
6.00	0.00	0	1,064.50	0.00
8.00	0.00	0	1,064.50	0.00
10.00	0.00	0	1,064.50	0.00
12.00	**6.10**	1,989	1,064.53	0.00
14.00	**38.57**	**167,170**	**1,066.00**	**28.14**
16.00	27.96	**175,341**	**1,066.06**	**30.92**
18.00	17.20	145,847	1,065.85	21.41
20.00	11.70	120,579	1,065.66	14.42
22.00	9.18	105,558	1,065.55	10.80
24.00	7.35	95,529	1,065.47	8.61
26.00	1.73	76,800	1,065.34	5.05
28.00	0.29	57,994	1,065.20	2.23
30.00	0.03	47,584	1,065.12	1.05
32.00	0.01	42,098	1,065.08	0.57
34.00	0.00	38,965	1,065.06	0.34
36.00	0.00	37,015	1,065.04	0.22
38.00	0.00	35,723	1,065.03	0.15
40.00	0.00	34,824	1,065.03	0.11
42.00	0.00	34,172	1,065.02	0.08
44.00	0.00	33,685	1,065.02	0.06
46.00	0.00	33,312	1,065.02	0.05
48.00	0.00	33,019	1,065.01	0.04
50.00	0.00	32,786	1,065.01	0.03
52.00	0.00	32,597	1,065.01	0.02
54.00	0.00	32,441	1,065.01	0.02
56.00	0.00	32,311	1,065.01	0.02
58.00	0.00	32,202	1,065.01	0.01
60.00	0.00	32,110	1,065.01	0.01
62.00	0.00	32,030	1,065.01	0.01
64.00	0.00	31,962	1,065.01	0.01
66.00	0.00	31,902	1,065.00	0.01
68.00	0.00	31,850	1,065.00	0.01
70.00	0.00	31,805	1,065.00	0.01
72.00	0.00	31,764	1,065.00	0.01
74.00	0.00	31,728	1,065.00	0.00
76.00	0.00	31,696	1,065.00	0.00
78.00	0.00	31,667	1,065.00	0.00
80.00	0.00	31,642	1,065.00	0.00
82.00	0.00	31,618	1,065.00	0.00
84.00	0.00	31,597	1,065.00	0.00
86.00	0.00	31,578	1,065.00	0.00
88.00	0.00	31,560	1,065.00	0.00
90.00	0.00	31,544	1,065.00	0.00
92.00	0.00	31,530	1,065.00	0.00
94.00	0.00	31,516	1,065.00	0.00
96.00	0.00	31,504	1,065.00	0.00
98.00	0.00	31,492	1,065.00	0.00
100.00	0.00	31,482	1,065.00	0.00

Pond 8P: Wetland

Inflow Area = 784.880 ac, Inflow Depth = 0.50" for 2-yr event
Inflow = 76.12 cfs @ 13.35 hrs, Volume= 32.605 af
Outflow = 59.63 cfs @ 14.22 hrs, Volume= 31.883 af, Atten= 22%, Lag= 52.1 min
Primary = 59.63 cfs @ 14.22 hrs, Volume= 31.883 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 1,066.59' @ 14.22 hrs Surf.Area= 183,222 sf Storage= 246,265 cf
Plug-Flow detention time= 103.7 min calculated for 31.883 af (98% of inflow)
Center-of-Mass det. time= 90.9 min (1,076.0 - 985.1)

#	Invert	Avail.Storage	Storage Description
1	1,064.50'	514,711 cf	**Custom Stage Data (Conic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,064.50	54,348	0	0	54,348
1,065.00	71,146	31,279	31,279	71,152
1,067.00	212,426	271,005	302,285	212,455
1,068.00	212,426	212,426	514,711	214,089

#	Routing	Invert	Outlet Devices
1	Primary	1,065.00'	**102.7 deg x 8.0' long Sharp-Crested Vee/Trap Weir** C= 2.49
2	Primary	1,067.00'	**2,000.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=59.63 cfs @ 14.22 hrs HW=1,066.59' TW=0.00' (Dynamic Tailwater)
└─**1=Sharp-Crested Vee/Trap Weir** (Weir Controls 59.63 cfs @ 3.8 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Hydrograph for Pond 8P: Wetland

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	1,064.50	0.00
2.00	0.00	0	1,064.50	0.00
4.00	0.00	0	1,064.50	0.00
6.00	0.00	0	1,064.50	0.00
8.00	0.00	0	1,064.50	0.00
10.00	0.00	0	1,064.50	0.00
12.00	**14.24**	6,401	1,064.60	0.00
14.00	**63.68**	**244,561**	**1,066.57**	**58.85**
16.00	41.85	**218,892**	**1,066.38**	**47.59**
18.00	25.06	175,118	1,066.06	30.85
20.00	16.50	141,185	1,065.81	20.03
22.00	12.78	122,071	1,065.67	14.80
24.00	10.19	109,637	1,065.58	11.74
26.00	2.38	85,470	1,065.40	6.61
28.00	0.44	62,039	1,065.23	2.77
30.00	0.04	49,631	1,065.14	1.26
32.00	0.01	43,177	1,065.09	0.65
34.00	0.00	39,600	1,065.06	0.38
36.00	0.00	37,421	1,065.05	0.24
38.00	0.00	35,998	1,065.03	0.16
40.00	0.00	35,018	1,065.03	0.11
42.00	0.00	34,314	1,065.02	0.08
44.00	0.00	33,793	1,065.02	0.06
46.00	0.00	33,395	1,065.02	0.05
48.00	0.00	33,085	1,065.01	0.04
50.00	0.00	32,839	1,065.01	0.03
52.00	0.00	32,639	1,065.01	0.03
54.00	0.00	32,476	1,065.01	0.02
56.00	0.00	32,341	1,065.01	0.02
58.00	0.00	32,227	1,065.01	0.01
60.00	0.00	32,131	1,065.01	0.01
62.00	0.00	32,049	1,065.01	0.01
64.00	0.00	31,978	1,065.01	0.01
66.00	0.00	31,916	1,065.00	0.01
68.00	0.00	31,862	1,065.00	0.01
70.00	0.00	31,815	1,065.00	0.01
72.00	0.00	31,774	1,065.00	0.01
74.00	0.00	31,737	1,065.00	0.00
76.00	0.00	31,704	1,065.00	0.00
78.00	0.00	31,674	1,065.00	0.00
80.00	0.00	31,648	1,065.00	0.00
82.00	0.00	31,624	1,065.00	0.00
84.00	0.00	31,602	1,065.00	0.00
86.00	0.00	31,582	1,065.00	0.00
88.00	0.00	31,564	1,065.00	0.00
90.00	0.00	31,548	1,065.00	0.00
92.00	0.00	31,533	1,065.00	0.00
94.00	0.00	31,519	1,065.00	0.00
96.00	0.00	31,507	1,065.00	0.00
98.00	0.00	31,495	1,065.00	0.00
100.00	0.00	31,484	1,065.00	0.00

Pond 8P: Wetland

Inflow Area = 784.880 ac, Inflow Depth = 2.67" for 50-yr event
Inflow = 517.80 cfs @ 13.21 hrs, Volume= 174.883 af
Outflow = 517.65 cfs @ 13.22 hrs, Volume= 174.159 af, Atten= 0%, Lag= 0.6 min
Primary = 517.65 cfs @ 13.22 hrs, Volume= 174.159 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 1,067.18' @ 13.22 hrs Surf.Area= 212,426 sf Storage= 340,905 cf
Plug-Flow detention time= 38.9 min calculated for 174.159 af (100% of inflow)
Center-of-Mass det. time= 35.0 min (1,005.9 - 970.9)

#	Invert	Avail.Storage	Storage Description
1	1,064.50'	514,711 cf	**Custom Stage Data (Conic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,064.50	54,348	0	0	54,348
1,065.00	71,146	31,279	31,279	71,152
1,067.00	212,426	271,005	302,285	212,455
1,068.00	212,426	212,426	514,711	214,089

#	Routing	Invert	Outlet Devices
1	Primary	1,065.00'	**102.7 deg x 8.0' long Sharp-Crested Vee/Trap Weir** C= 2.49
2	Primary	1,067.00'	**2,000.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=517.64 cfs @ 13.22 hrs HW=1,067.18' TW=0.00' (Dynamic Tailwater)
└─**1=Sharp-Crested Vee/Trap Weir** (Weir Controls 102.14 cfs @ 4.4 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 415.50 cfs @ 1.1 fps)

Hydrograph for Pond 8P: Wetland

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	1,064.50	0.00
2.00	0.00	0	1,064.50	0.00
4.00	0.00	0	1,064.50	0.00
6.00	0.00	0	1,064.50	0.00
8.00	0.00	0	1,064.50	0.00
10.00	1.89	3,491	1,064.56	0.00
12.00	**157.92**	**151,848**	**1,065.89**	**23.22**
14.00	**350.07**	**330,276**	**1,067.13**	**354.54**
16.00	158.80	313,839	1,067.05	160.15
18.00	101.08	306,054	1,067.02	102.05
20.00	76.31	288,189	1,066.90	80.42
22.00	64.28	262,721	1,066.71	67.46
24.00	53.12	239,412	1,066.54	56.51
26.00	20.91	176,538	1,066.07	31.34
28.00	8.54	119,389	1,065.65	14.12
30.00	4.12	89,077	1,065.43	7.31
32.00	1.66	69,794	1,065.28	3.91
34.00	0.51	56,338	1,065.18	2.03
36.00	0.12	47,656	1,065.12	1.06
38.00	0.01	42,300	1,065.08	0.58
40.00	0.01	39,116	1,065.06	0.35
42.00	0.01	37,143	1,065.04	0.23
44.00	0.00	35,836	1,065.03	0.15
46.00	0.00	34,924	1,065.03	0.11
48.00	0.00	34,262	1,065.02	0.08
50.00	0.00	33,766	1,065.02	0.06
52.00	0.00	33,385	1,065.02	0.05
54.00	0.00	33,086	1,065.01	0.04
56.00	0.00	32,847	1,065.01	0.03
58.00	0.00	32,652	1,065.01	0.03
60.00	0.00	32,492	1,065.01	0.02
62.00	0.00	32,358	1,065.01	0.02
64.00	0.00	32,245	1,065.01	0.02
66.00	0.00	32,150	1,065.01	0.01
68.00	0.00	32,073	1,065.01	0.01
70.00	0.00	32,009	1,065.01	0.01
72.00	0.00	31,950	1,065.00	0.01
74.00	0.00	31,896	1,065.00	0.01
76.00	0.00	31,846	1,065.00	0.01
78.00	0.00	31,802	1,065.00	0.01
80.00	0.00	31,763	1,065.00	0.01
82.00	0.00	31,727	1,065.00	0.00
84.00	0.00	31,695	1,065.00	0.00
86.00	0.00	31,667	1,065.00	0.00
88.00	0.00	31,641	1,065.00	0.00
90.00	0.00	31,618	1,065.00	0.00
92.00	0.00	31,596	1,065.00	0.00
94.00	0.00	31,577	1,065.00	0.00
96.00	0.00	31,560	1,065.00	0.00
98.00	0.00	31,544	1,065.00	0.00
100.00	0.00	31,529	1,065.00	0.00

Pond 8P: Wetland

Inflow Area = 784.880 ac, Inflow Depth = 3.43" for 100-yr event
Inflow = 699.07 cfs @ 13.02 hrs, Volume= 224.534 af
Outflow = 698.82 cfs @ 13.03 hrs, Volume= 223.811 af, Atten= 0%, Lag= 0.7 min
Primary = 698.82 cfs @ 13.03 hrs, Volume= 223.811 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 1,067.23' @ 13.03 hrs Surf.Area= 212,426 sf Storage= 351,190 cf
Plug-Flow detention time= 33.0 min calculated for 223.811 af (100% of inflow)
Center-of-Mass det. time= 29.8 min (994.1 - 964.4)

#	Invert	Avail.Storage	Storage Description
1	1,064.50'	514,711 cf	**Custom Stage Data (Conic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,064.50	54,348	0	0	54,348
1,065.00	71,146	31,279	31,279	71,152
1,067.00	212,426	271,005	302,285	212,455
1,068.00	212,426	212,426	514,711	214,089

#	Routing	Invert	Outlet Devices
1	Primary	1,065.00'	**102.7 deg x 8.0' long Sharp-Crested Vee/Trap Weir** C= 2.49
2	Primary	1,067.00'	**2,000.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=698.82 cfs @ 13.03 hrs HW=1,067.23' TW=0.00' (Dynamic Tailwater)
└─**1=Sharp-Crested Vee/Trap Weir** (Weir Controls 106.06 cfs @ 4.4 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 592.76 cfs @ 1.3 fps)

Hydrograph for Pond 8P: Wetland

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	1,064.50	0.00
2.00	0.00	0	1,064.50	0.00
4.00	0.00	0	1,064.50	0.00
6.00	0.00	0	1,064.50	0.00
8.00	0.00	0	1,064.50	0.00
10.00	3.59	8,397	1,064.63	0.00
12.00	**220.74**	**232,364**	**1,066.48**	**53.37**
14.00	**448.10**	**336,902**	**1,067.16**	**453.24**
16.00	189.80	317,025	1,067.07	191.28
18.00	119.12	308,925	1,067.03	120.02
20.00	89.98	303,464	1,067.01	90.68
22.00	76.34	286,421	1,066.88	79.48
24.00	64.37	263,279	1,066.71	67.73
26.00	27.17	193,827	1,066.20	37.62
28.00	15.73	144,583	1,065.84	21.03
30.00	6.95	108,009	1,065.57	11.36
32.00	2.89	81,665	1,065.37	5.91
34.00	0.98	63,719	1,065.24	3.00
36.00	0.21	51,895	1,065.15	1.51
38.00	0.02	44,626	1,065.10	0.78
40.00	0.01	40,460	1,065.07	0.44
42.00	0.01	37,988	1,065.05	0.28
44.00	0.00	36,401	1,065.04	0.18
46.00	0.00	35,320	1,065.03	0.13
48.00	0.00	34,550	1,065.02	0.09
50.00	0.00	33,982	1,065.02	0.07
52.00	0.00	33,551	1,065.02	0.05
54.00	0.00	33,216	1,065.01	0.04
56.00	0.00	32,951	1,065.01	0.03
58.00	0.00	32,736	1,065.01	0.03
60.00	0.00	32,561	1,065.01	0.02
62.00	0.00	32,416	1,065.01	0.02
64.00	0.00	32,294	1,065.01	0.02
66.00	0.00	32,191	1,065.01	0.01
68.00	0.00	32,107	1,065.01	0.01
70.00	0.00	32,039	1,065.01	0.01
72.00	0.00	31,976	1,065.01	0.01
74.00	0.00	31,919	1,065.00	0.01
76.00	0.00	31,867	1,065.00	0.01
78.00	0.00	31,820	1,065.00	0.01
80.00	0.00	31,778	1,065.00	0.01
82.00	0.00	31,741	1,065.00	0.00
84.00	0.00	31,708	1,065.00	0.00
86.00	0.00	31,678	1,065.00	0.00
88.00	0.00	31,651	1,065.00	0.00
90.00	0.00	31,627	1,065.00	0.00
92.00	0.00	31,605	1,065.00	0.00
94.00	0.00	31,585	1,065.00	0.00
96.00	0.00	31,567	1,065.00	0.00
98.00	0.00	31,550	1,065.00	0.00
100.00	0.00	31,535	1,065.00	0.00

Appendix T

Greenhouse Gas Analysis

TETRA TECH

GREENHOUSE GAS ANALYSIS FOR THE STOCKBRIDGE-MUNSEE CASINO FINAL EIS

THOMPSON, NEW YORK

September 2010

tech environmental

FOCUSED KNOWLEDGE. REAL SOLUTIONS.

GREENHOUSE GAS ANALYSIS FOR THE STOCKBRIDGE-MUNSEE CASINO FINAL EIS

THOMPSON, NEW YORK

Prepared for:

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1.0 SUMMARY OF RESULTS

A greenhouse gas (GHG) emissions analysis was performed for the Stockbridge-Munsee Casino (the "Project") in Thompson, NY, consistent with the New York State Department of Environmental Conservation Policy "Guide for Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements," July 15, 2009 (the "Policy"). Although the Policy does not apply to this FEIS under NEPA (as well as because the Project would be on lands taken into trust for the Stockbridge-Munsee Community), it does provide guidance in performing an assessment of GHG emissions for activities such as the Project. The Policy recommends a project to quantify its carbon dioxide (CO_2) emissions and to review and assess mitigation measures that reduce such emissions. In addition, the Policy suggests the project proponent quantify the effect of proposed mitigation in terms of emissions reduction and energy savings.

The energy modeling for the Project reflects the New York State Energy Code (the "Code") in effect at the time of the filing of this FEIS, namely the ASHRAE Standard 90.1-2004, adopted by New York on April 9, 2008. This GHG analysis conforms to the NYS DEC Policy.

The Project's Phase I and II building program includes the following buildings:

1. The Main facility building of 584,000 square feet (sf), including 150,000 sf for the casino; 30,000 sf for a multi-purpose area hosting conventions or sports events; 82,500 sf for restaurants, bars and food service; 25,000 sf for retail and day care; 6,500 sf for the bus transportation center; 15,000 sf for facilities and engineering storage; and 275,000 sf for back-of-house uses that encompass kitchens, gaming function support and administrative offices, building systems and corridors.

2. A warehouse building providing 30,000 sf of storage space including 5,000 sf of refrigerated food storage.

3. A convenience store of 1,500 sf and gasoline service station at the Project entrance.

4. A 15-story hotel of 500,000 sf that includes restaurant and retail space.

The Policy identifies five potential sources of GHG emissions that could be considered: direct emissions from on-site stationary sources and fleet vehicles owned by the Project, indirect emissions

from energy generated off-site (electricity) and traffic generated by the Project, and indirect emissions from the Project's solid waste generation and disposal. This assessment addresses each of the sources.

CO_2 emissions were quantified for: (1) the Base Case corresponding to the New York State Code, and (2) the Preferred Alternative, which includes all energy saving measures. Building energy saving measures include high-efficiency boilers, chillers and HVAC units; Demand Control Ventilation (DCV) controls for the Main Facility; building envelope insulation that exceeds Code; lighting efficiency better than Code; high-efficiency refrigeration systems, low-energy design electronic gaming machines (EGMs); and a central energy management system. Solid waste energy mitigation consists of recycling cardboard and consumer beverage containers. Transportation energy mitigation is arranging direct bus service to the Project on a regular basis from urban areas.

This GHG analysis uses the eQUEST energy design software (version 3.63), which incorporates the U.S. Department of Energy's DOE-2 building energy use model, along with CO_2 emission rates of 22.4 lb/gallon distillate oil[1], 120.6 lb/10^3 cubic feet (Mcf) of natural gas[1] and 671.5 lb/MWhr[2] of electricity. EQUEST assumes that all heating fuel is natural gas; however, no natural gas pipeline is available in the Project region, and thus the Project will be using distillate oil for heating. The GHG analysis therefore converted the eQUEST natural gas usage to an equivalent amount of distillate oil (on a heating basis) to calculate CO_2 emissions.[3] CO_2 emissions produced by project motor vehicle trips were analyzed using the U.S. EPA MOBILE6.2 emissions factor of 550.4 grams/mile for the vehicle population.[4]

Energy use and CO_2 emissions are summarized in Tables 1A through 1F, and a detailed description of the mitigation measures is provided in the following chapters. Table 2 summarizes the Project's GHG emissions for the Base Case (a building that complies with the Code) and for the Preferred Alternative (which includes all energy saving measures). The Preferred Alternative would reduce

[1] U.S. Department of Energy, Energy Information Administration.
[2] New York State Department of Public Service, CO2 emissions for New York State Gas and Electric, 2006 data.
[3] Natural gas heating value is 1,050 Btu/cubic foot and #2 oil heating value is 140,000 Btu/gallon.
[4] MOBILE6.2 provides CO_2 emission factors ranging from 368.5 g/mile for light-duty gasoline vehicles up to 1,633.1

total CO_2 emissions by 22.9% as compared to the Base Case. Figure 1 illustrates the GHG emission components that comprise the total and the reductions achieved through mitigation measures in each component.

The eQUEST model output is provided in Appendices A-D with additional energy calculations for external electrical loads (refrigeration equipment[5] and outdoor lighting) summarized in Appendix F. Appendix E provides the transportation CO_2 calculations. Appendix G contains the solid waste CO_2 calculations.

g/mile for the heaviest diesel vehicles. A typical vehicle population has average emissions of 550.4 g/mile.

[5] eQUEST version 3.63 does not provide an option for external refrigeration equipment, and thus calculations for that equipment are made external to the model. .

TABLE 1A

ENERGY AND CO_2 MODELING FOR STOCKBRIDGE-MUNSEE CASINO

Main Facility

	GFA (sf)	Electrical Usage (MWh/yr)	Electrical Change (%)	#2 Oil Usage (10^3 gal/yr)	#2 Oil Change (%)	Heating CO_2 Emissions (tons/yr)	Electrical CO_2 Emissions (tons/yr)	Total CO_2 Emissions (tons/yr)	CO_2 Emissions Change (%)
Base Case	584,000	48,256.7		544.4		6,096.7	16,202.2	22,298.9	
Energy Management System		48,136.7	-0.2%	389.6	-28.4%	4,363.0	16,161.9	20,524.9	-8.0%
Added Roof Insulation		48,246.7	0.0%	540.8	-0.6%	6,057.2	16,198.8	22,256.1	-0.2%
Added Wall Insulation		48,246.7	0.0%	538.1	-1.2%	6,026.2	16,198.8	22,225.0	-0.3%
Windows Double Low-e Glass		48,216.7	-0.1%	539.9	-0.8%	6,046.3	16,188.8	22,235.1	-0.3%
Higher Efficiency Chiller		47,836.7	-0.9%	544.4	0.0%	6,096.7	16,061.2	22,157.9	-0.6%
Higher Boiler Efficiency		48,256.7	0.0%	532.1	-2.2%	5,959.8	16,202.2	22,162.0	-0.6%
Lower Light Power Density		47,656.7	-1.2%	556.9	2.3%	6,237.0	16,000.7	22,237.7	-0.3%
High-Efficiency Refrigeration System		48,194.0	-0.1%	544.4	0.0%	6,096.7	16,181.1	22,277.9	-0.1%
Cool Roof		48,196.7	-0.1%	547.1	0.5%	6,127.0	16,182.0	22,309.0	0.0%
DCV Ventilation Controls		48,006.7	-0.5%	123.4	-77.3%	1,381.8	16,118.2	17,500.0	-21.5%
Low-Energy EGMs		45,656.7	-5.4%	546.2	0.3%	6,116.9	15,329.2	21,446.1	-3.8%
All Mitigation Measures		44,374.0	-8.0%	74.5	-86.3%	834.1	14,898.6	15,732.7	-29.4%

TABLE 1B

ENERGY AND CO_2 MODELING FOR STOCKBRIDGE-MUNSEE CASINO

Warehouse

	GFA (sf)	Electrical Usage (MWh/yr)	Electrical Change (%)	#2 Oil Usage (10^3 gal/yr)	#2 Oil Change (%)	Heating CO_2 Emissions (tons/yr)	Electrical CO_2 Emissions (tons/yr)	Total CO_2 Emissions (tons/yr)	CO_2 Emissions Change (%)
Base Case	30,000	1,075.9		8.6		95.8	361.2	457.0	
Energy Management System		1,075.9	0.0%	6.8	-20.6%	76.1	361.2	437.3	-4.3%
Added Roof Insulation		1,075.1	-0.1%	8.1	-4.8%	91.2	361.0	452.2	-1.1%
Added Wall Insulation		1,075.3	-0.1%	8.4	-1.7%	94.2	361.0	455.2	-0.4%
Windows Double Low-e Glass		1,075.8	0.0%	8.5	-1.1%	94.7	361.2	455.9	-0.2%
Cool Roof		1,073.6	-0.2%	8.8	3.2%	98.8	360.5	459.3	0.5%
Higher Furnace Efficiency		1,075.9	0.0%	8.1	-5.1%	90.9	361.2	452.2	-1.1%
Lower Light Power Density		1,062.2	-1.3%	8.8	2.6%	98.3	356.6	455.0	-0.4%
High-Efficiency Refrigeration System		1,002.3	-6.8%	8.6	0.0%	95.8	336.5	432.3	-5.4%
All Mitigation Measures		985.7	-8.4%	6.3	-26.4%	70.5	330.9	401.4	-12.2%

TABLE 1C

ENERGY AND CO_2 MODELING FOR STOCKBRIDGE-MUNSEE CASINO

Convenience Store

	GFA (sf)	Electrical Usage (MWh/yr)	Electrical Change (%)	#2 Oil Usage (10^3 gal/yr)	#2 Oil Change (%)	Heating CO_2 Emissions (tons/yr)	Electrical CO_2 Emissions (tons/yr)	Total CO_2 Emissions (tons/yr)	CO_2 Emissions Change (%)
Base Case	1,500	73.3		0.96		10.8	24.6	35.4	
Energy Management System		72.0	-1.8%	0.79	-17.6%	8.9	24.2	33.1	-6.6%
Added Roof Insulation		73.3	0.0%	0.96	0.0%	10.8	24.6	35.4	0.0%
Added Wall Insulation		73.3	-0.1%	0.93	-3.4%	10.4	24.6	35.0	-1.1%
Windows Double Low-e Glass		73.3	0.0%	0.94	-2.4%	10.5	24.6	35.1	-0.7%
Higher Efficiency HVAC Units		72.7	-0.8%	0.96	0.0%	10.8	24.4	35.2	-0.6%
Higher Furnace Efficiency		73.3	0.0%	0.95	-1.2%	10.6	24.6	35.3	-0.4%
Lower Light Power Density		71.5	-2.5%	0.99	2.7%	11.1	24.0	35.1	-0.9%
High-Efficiency Refrigeration System		69.5	-5.2%	0.96	0.0%	10.8	23.3	34.1	-3.6%
All Mitigation Measures		65.9	-10.1%	0.76	-20.6%	8.6	22.1	30.7	-13.3%

TABLE 1D

ENERGY AND CO_2 MODELING FOR STOCKBRIDGE-MUNSEE CASINO

Hotel

	GFA (sf)	Electrical Usage (MWh/yr)	Electrical Change (%)	#2 Oil Usage (10^3 gal/yr)	#2 Oil Change (%)	Heating CO_2 Emissions (tons/yr)	Electrical CO_2 Emissions (tons/yr)	Total CO_2 Emissions (tons/yr)	CO_2 Emissions Change (%)
Base Case	500,000	7,330.6		97.7		1,093.7	2,461.2	3,554.9	
Energy Management System		7,183.8	-2.0%	76.5	-21.7%	856.8	2,412.0	3,268.8	-8.0%
Added Roof Insulation		7,330.2	0.0%	97.4	-0.2%	1,091.2	2,461.1	3,552.3	-0.1%
Added Wall Insulation		7,323.8	-0.1%	95.6	-2.1%	1,071.0	2,459.0	3,530.0	-0.7%
Windows Double Low-e Glass		6,880.6	-6.1%	94.5	-3.2%	1,058.4	2,310.2	3,368.6	-5.2%
Higher Efficiency Chiller		7,225.8	-1.4%	97.7	0.0%	1,093.7	2,426.1	3,519.7	-1.0%
Higher Furnace Efficiency		7,330.6	0.0%	96.3	-1.4%	1,078.6	2,461.2	3,539.8	-0.4%
Lower Light Power Density		7,001.6	-4.5%	101.1	3.5%	1,132.3	2,350.8	3,483.1	-2.0%
High-Efficiency Refrigeration System		7,321.2	-0.1%	97.7	0.0%	1,093.7	2,458.1	3,551.8	-0.1%
Cool Roof		7,327.1	0.0%	97.8	0.2%	1,095.4	2,460.1	3,555.4	0.0%
All Mitigation Measures		6,341.0	-13.5%	76.1	-22.1%	851.8	2,129.0	2,980.8	-16.2%

TABLE 1E

ENERGY AND CO_2 MODELING FOR STOCKBRIDGE-MUNSEE CASINO

Outdoor Lighting for Parking Structures, Lots, Roads and Signs

		Electrical Usage (MWh/yr)	Electrical Change (%)	#2 Oil Usage (10^3 gal/yr)	#2 Oil Change (%)	Heating CO_2 Emissions (tons/yr)	Electrical CO_2 Emissions (tons/yr)	Total CO_2 Emissions (tons/yr)	CO_2 Emissions Change (%)
Base Case		6,899.7		0.0		0.0	2,316.6	2,316.6	
Exterior Lights 80 lumens/W		5,279.9	-23.5%	0.0	0.0%	0.0	1,772.7	1,772.7	-23.5%

TABLE 1F

ENERGY AND CO_2 MODELING FOR STOCKBRIDGE-MUNSEE CASINO

All Buildings and Outdoor Lighting - Totals

	Electrical Usage (MWh/yr)	Electrical Change (%)	#2 Oil Usage (10^3 gal/yr)	#2 Oil Change (%)	Heating CO_2 Emissions (tons/yr)	Electrical CO_2 Emissions (tons/yr)	Total CO_2 Emissions (tons/yr)	CO_2 Emissions Change (%)
Base Case	63,636.2		651.5		7,297.0	21,365.9	28,662.8	
Preferred Alternative All Mitigation Measures	57,046.5	-10.4%	157.6	-75.8%	1,764.9	19,153.3	20,918.3	-27.0%

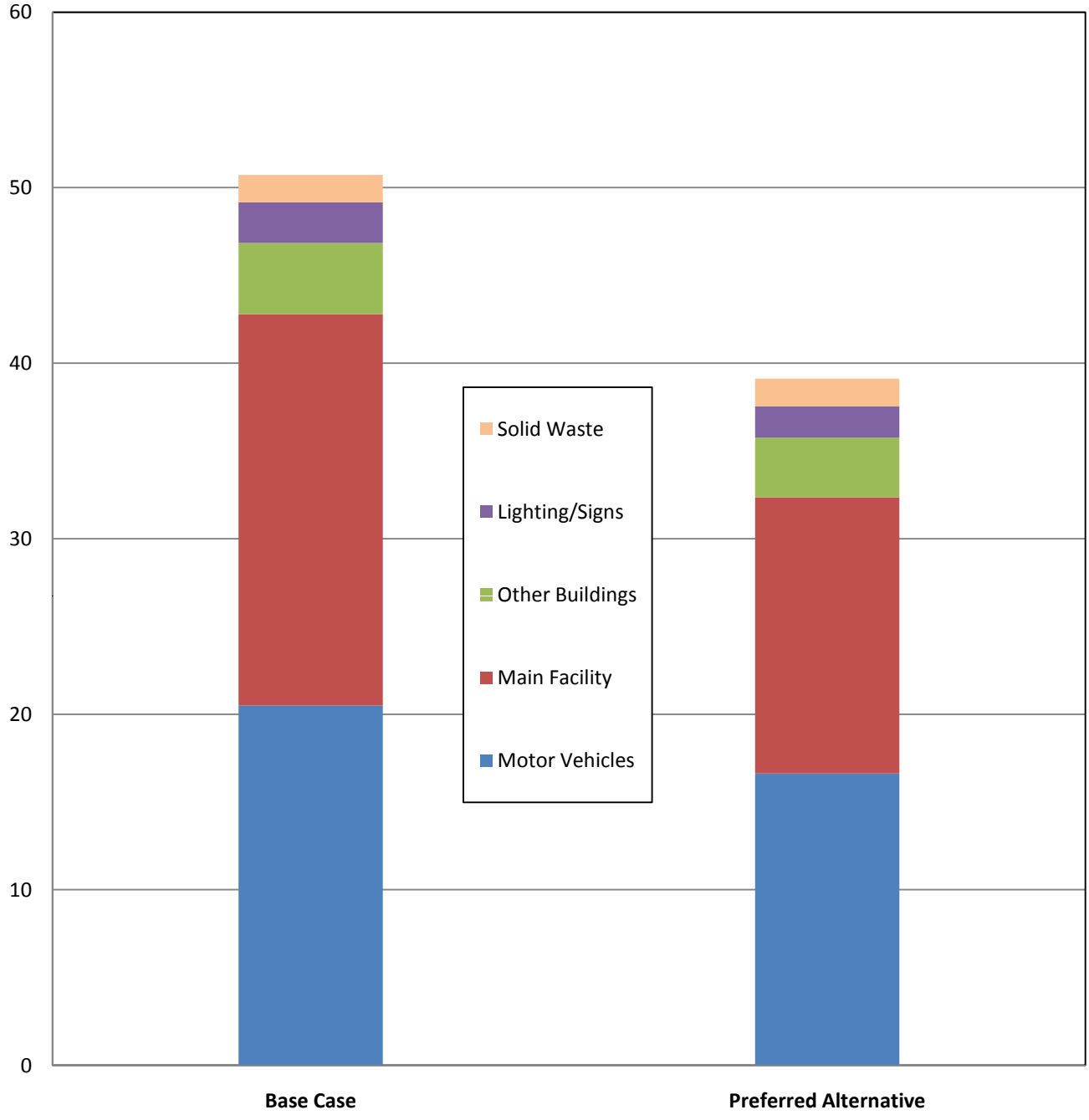
TABLE 2

GREENHOUSE GAS (CO_2) EMISSIONS SUMMARY
STOCKBRIDGE-MUNSEE CASINO
(TONS/YEAR)

Source	Base Case	Preferred Alternative	Percent Reduction in GHG Emissions
Direct Stationary Source Emissions	7,297.0	1,764.9	75.8%
Indirect Stationary Source Emissions	21,365.9	19,153.3	10.4%
Subtotal Stationary Source Emissions	28,662.8	20,918.3	27.0%
Transportation Emissions (Direct and Indirect)	20,496.0	16,624.0	18.9%
Solid Waste Management Emissions	1,569.0	1,569.0	0%*
Total CO_2 Emissions	50,727.8	39,111.3	22.9%

* Recycling is mandatory in Sullivan County and is thus included in both the Base Case and Preferred Alternative.

Figure 1.
Greenhouse Gas (CO_2) Emissions
for the Stockbridge-Munsee Casino (1,000 tons/year)



2.0 TRANSPORTATION GHG EMISSIONS

The transportation portion of the GHG analysis calculated emissions of CO_2 for the traffic study area from two sources (direct emissions of Project fleet vehicles and indirect emissions of trips generated by the Project) for three traffic analysis scenarios:

- 2018 No-Build
- 2018 Build
- 2018 Build with Mitigation.

The traffic study area encompasses Interchange 107 of State Route 17 and County Highway 161 (including ramps), portions of Old Route 17, a portion of County Highway 161 north to the Project site and the Project access road. Traffic volumes have been updated using recent 2010 traffic counts. The vehicle miles traveled (VMT) for each of the 13 roadway segments in the traffic study area was calculated by multiplying the length of a road segment by the average daily traffic (ADT) volume on that segment. The CO_2 emissions for each roadway segment were calculated by multiplying the daily VMT by the MOBILE6.2 predicted CO_2 emission factor of 550.4 grams per mile. ADT traffic volumes were calculated for each roadway segment from data provided by TetraTech and presented in the Traffic and Transportation section of the FEIS. The Project fleet vehicles include eight limousines and four shuttle buses; the shuttle buses will be used to transport people between the Main Facility to parking lots and parking structures along the access loop road. The VMT and emission calculations are presented in Appendix E, Table E-1.

Transportation CO_2 emissions are summarized in Table 3. The emissions listed for the 2018 No-Build and Build cases include both existing volumes on the roadway network and new Project-generated trips. The Project's transportation emissions are calculated by subtracting the 2018 No-Build values from those for the 2018 Build and 2018 Build-With-Mitigation cases.

Given the location of the Project, practical transportation mitigation measures are limited to two types: 1) roadway improvements at Interchange 107, intersection improvements and site access improvements to improve traffic flow and prevent congestion; and 2) and the use of buses to reduce passenger vehicle trips to the site. The Project will make arrangements with private bus companies

to provide direct service to the Project on a regular basis from urban areas, and the Project is expected to attract 100 buses per day (100 bus trips in and 100 bus trips out). A bus trip eliminates 34 passenger vehicle trips, on average.[6] Thus, 200 bus trips per day will eliminate approximately 6,800 passenger car trips per day. This trip reduction is accounted for in the Build-With-Mitigation case. Table 3 reveals the 2018 Build-With-Mitigation CO_2 emissions (16,624 tons/year) will be 18.9% less than those for the 2018 Build case (20,496 tons/year).

TABLE 3

MOTOR VEHICLE CO_2 EMISSIONS SUMMARY

Total Predicted CO_2 Emissions Burden		
2018 No-Build	2018 Build Without Mitigation	2018 Build With Mitigation
35,393 kg/day	86,381 kg/day Project: 50,988 kg/day	76,748 kg/day Project: 41,355 kg/day
14,228 tons/yr	34,724 tons/year Project: 20,496 tons/year	30,852 tons/year Project: 16,624 tons/year

[6] http://www.greyhound.com/home/en/about/factsandfigures.aspx.

3.0 SOLID WASTE GHG EMISSIONS

Solid waste management emissions for the Project were calculated using the U.S. EPA Waste Reduction Model (WARM), which calculates GHG emissions for waste management scenarios in metric tons of CO_2 equivalents. ($MTCO_2E$). These emissions were converted to short tons of CO_2 by multiplying by 1.102.

The Project will generate an average 78 tons/week of solid waste, or 4,056 tons/year. All solid waste generated by the Project will be taken to one of Sullivan County's transfer stations (the Highland Transfer Station in Monticello is closest to the project site) and from there it will be trucked out of the County to other landfills for disposal.[7] Recycling of the following materials, which will be generated by the project, is mandatory in Sullivan County: Paper (certain types), Cardboard, Glass (containers and bottles), Mixed Containers (steel, plastic, aluminum beverage), and Fluorescent Bulbs. The Preferred Alternative assumes these materials, constituting up to 20% of the waste stream, will be recycled, and since recycling is mandatory this waste reduction is also assumed for the Base Case. The components of the solid waste stream were estimated using data for Municipal Solid Waste published by the Center for Sustainable Systems.[8] The WARM modeling results in Appendix G reveal that CO_2 emissions with recycling (1,569 tons/year) are much less than CO_2 emissions without recycling (5,252 tons/year).

[7] Sullivan County Division of Solid Waste, "Solid Waste System Changes" in Recycling Newsletter for Winter 2009-2010.
[8] http://css.snre.umich.edu/css_doc/CSS04-15.pdf

4.0 BUILDING GHG ANALYSIS

The NYS DEC Policy recommends that the Proponent to identify measures to increase energy efficiency, reduce energy demand, and reduce GHG emissions from the proposed building program. Section 4.1 and 4.2 discuss the measures the Stockbridge-Munsee Community will implement for the Casino in Thompson, New York. Section 4.3 discusses alternative energy mitigation measures that have not been adopted due to either cost or technical infeasibility.

4.1 Site Design Mitigation Measures

The Project includes the following mitigation measures:

- ***Minimize Building Footprint and Conserve Natural Areas*** –The Project has been designed to minimize its footprint on the 333-acre site through the use of multi-story buildings and multi-level parking structures. The Project will preserve a natural buffer area along the Neversink River.

- ***Provide Access to Public Transportation*** – The Project will make arrangements with private bus companies to provide direct service to the Project on a regular basis from urban areas, and the Project is expected to attract approximately 100 buses per day.

- ***Design Water Efficient Landscaping*** –Water efficient landscaping will be installed to minimize water use. Drought-resistant and native plants will be used for landscaping.

- ***Minimize Energy Use Through Building Orientation*** –There will be glass windows and doors at the casino entrance, which will face south. The hotel will have its major sides facing south and west.

- ***Stormwater Design Best Management Practices*** – The stormwater management system will utilize NYS DEC Stormwater Management Practices, including groundwater infiltration basins (to reduce runoff and recharge groundwater) and stormwater treatment to prevent water quality impacts.

4.2 Building Design and Operation Mitigation Measures

The Project includes the following building design and operational mitigation measures. These measures are listed below and the CO_2 reductions are documented in Tables 1A through 1F. Mitigation measures to reduce direct and indirect CO_2 emissions are presented together because measures to reduce electrical use for cooling in a building, such as a cool roof, inadvertently require more fuel to be burned for space heating because heat from solar gain is reduced. Percentage reductions for individual energy efficiency measures listed in the tables do not simply sum to the net reduction because when several measures are combined, the reduction of the second measure is applied to a lower base level that includes the reducing effects of the first measure, and so forth.

- ***Energy Management Systems*** – All buildings will utilize a highly efficient energy management system (EMS) to track and control energy use. Energy needs will be closely monitored 24 hours per day, 7 days per week, and the use of heat, cooling, and lighting will be is minimized.

- ***Install High-Efficiency Chillers and HVAC Units*** – All buildings but the Warehouse will have rooftop chillers or HVAC units to provide air-conditioning. (The Warehouse's small office will be equipped with an in-wall air conditioner). The Base Case assumes the required Energy Efficiency Ratio (EER) and Coefficient of Performance (COP) values for these units under the NYS Energy Code. The Preferred Alternative assumes all HVAC units and chillers will achieve energy efficiency approximately 10% better than Code. All units will be Energy-STAR rated.

- ***Demand Control Ventilation (DCV) –*** DCV controls will be used in the Main Facility building to match outside air flow into the system to the occupancy of the facility. This strategy saves energy by controlling the quantity of outside air being conditioned as a function of measured indoor air quality (which effectively tracks occupancy). Since the Base Case assumes fixed ventilation rates that are keyed to maximum occupancy of the space, DCV provides significant savings on fuel for space heating in a large building such as the Main Facility.

- ***Energy Efficient Windows and Building Envelope*** -- Buildings will increase roof insulation to R-20 (better than Code), will increase wall insulation to R-20 (better than Code), and will reduce the window heat-transfer U-value to U=0.33 (better than Code) using double-pane low-e glass.

- ***Install Energy Efficient Interior Lighting*** – With the exception of the casino floor, which has specialty lighting, building lighting plans will be designed with a Light Power Density (LPD) 10% below Code. LED lights will be used for exit signs.

- ***High-Efficiency Refrigeration System*** – The Project's walk-in freezers, refrigerators and other food-refrigeration equipment will achieve an approximate 10% energy reduction through the use of equipment with high-efficiency fan motors, high-efficiency compressors and anti-sweat heater controls.

- ***Maximize Interior Day-Lighting*** – The Main Facility building will have approximately 50' x 20' glass area (1,000 sf) at each of the three entrances on the south, west and east sides. The back-of-house office area will have approximately 2,500 sf of windows. The Main Facility building will also have a skylight area of roughly 1,000 sf. The hotel will have a major wall facing south to harvest daylight and solar gain during the winter months, and the hotel building will have approximately 40% of its wall area as windows.

- ***Use Highly-Reflective, Cool Roofing Materials*** –A reflective cool roof will be installed on the flat roof surfaces of the three larger buildings.

- ***Use Energy Efficient Exterior Lighting*** – The Project design includes energy efficient and directed exterior lighting in the parking lots and parking structures and along the access roadway. Pulse-start metal halide or sodium vapor lamps and ballasts will be used. The lighting design will achieve an overall efficiency of approximately 80 lumens/W, better than the Code efficiency of 60 lumens/W.

- ***High-Efficiency Boilers –*** The Project will have several commercial-size boilers fired with distillate oil to provide heat for building spaces and domestic hot water. The annual fuel utilization efficiency (AFUE) of these boilers will be 85%, which is higher than Code.

- ***Low-Energy Electronic Gaming Machines (EGMs) –*** Approximately half of the 3,000 EGMs on the casino floor will be a low-energy design with LED displays and lights and high-efficiency processor chips. These EGMs will have a typical electrical load of 250 W, compared with standard machines at 400 W.

- ***Incorporate Motion Sensors in Lighting*** – Back-of-house areas such as administrative offices, utility rooms and restrooms will use motion sensor activated lighting to reduce energy use.

- ***Use Water Conserving Fixtures*** – The buildings will use water conserving fixtures in bathrooms that use less water than permitted by Code. The design will be for toilets with 1.3 gallons per flush and urinals with 1.0 pint per flush.

- ***Provide for Storage and Collection of Recyclables in Building Design*** – The buildings will provide areas for storage, sorting and processing of the materials that must be recycled in Sullivan County: Mixed Paper, Newspaper, Cardboard, Glass (containers), Mixed Containers (steel, plastic and aluminum beverage), and Fluorescent Bulbs.

4.3 Alternative Mitigation Measures Not Adopted

Other building design and operation mitigation measures were considered for the Project, but were rejected because they are either technically/financially infeasible or inappropriate for the Project:

- ***Reduce Peak Hour Energy Demand by Using Peak Shaving or Load Shifting Strategies*** – Peak shaving means limiting the amount of electricity use during peak periods and/or shifting it to other time periods when the cost of electricity is less. These energy measures are not feasible for a casino and its associated retail and food service uses, which must use power during peak periods in order to serve customers.

- ***Construct Green Roof*** -- Green roofs, which consist of layers of gravel, soil and vegetation atop a rubberized water-proof membrane, are designed to provide a cooler roof surface for a building, reducing summer heat gain and electrical use for air conditioning, and they reduce roof water runoff. Because, as explained below, it is economically infeasible to construct and maintain a green roof for the Project buildings, the Proponent will construct cool membrane roofs. Green roofs are very expensive to install and maintain. They typically require a steel-reinforced concrete roof that can support a dead weight of 35 lb/sf and the installation cost exclusive of roof redesign is $30/sf.[9] While green roof technology has the potential to improve stormwater management on the Project and reduce overall energy costs, the significant additional cost for engineering, construction and installation of the green roof is not economically feasible. For Phase I, green roofs would add $11.8 million of cost to a construction budget of $410 million. By contrast, a cool membrane roof that provides similar energy saving benefits can be included in the project at no additional cost over the standard dark membrane roof used on new buildings.

- ***Incorporate Combined Heat and Power (CHP) Technologies into the Project*** – CHP (cogeneration) requires a host for the constant and substantial steam load (waste heat) generated as part of the process. For this reason, CHP is typically found in manufacturing plants that require process heat; in larger hotels where there is a demand for heat in laundry, domestic hot water for guest rooms and kitchens, and space heating; and in colleges and universities. For most real estate projects, the thermal load is insufficient to make CHP economically feasible.

  On-site cogeneration is an option being considered for the hotel in Phase II of the Project, either with diesel reciprocating engines or combustion turbines, if pipeline natural gas becomes available at the site by that phase's 2018 build year. The present conceptual design of mechanical systems, because there is no pipeline natural gas, relies on purchase of all electricity from New York State Electric & Gas (NYSEG) and distillate oil-fired boilers to provide space heating and domestic hot water for the buildings. On-site storage of 100,000 gallons of distillate oil will be required along with on-site storage of 30,000 gallons of propane for cooking needs. In the event that NYSEG secures a franchise from Columbia Gas and installs a distribution system serving portions of Sullivan County that include the Project site, the availability of pipeline gas would increase the possibility for some type of cogeneration system by eliminating additional fuel-oil trucking and storage to serve the electric generating equipment. Although

[9] Oberndorfer, Erica, et al., "Green Roofs as Urban Ecosystems: Ecological Structures, Functions and Services," BioScience, Vol. 57, No. 10, November 2007.

such availability of pipeline anural gas is not now foreseeable, the feasibility of CHP (cogeneration) for Phase II of the Project will nonetheless be assessed in the Project's detailed mechanical design.

- ***On-Site Renewable Energy*** – Photo-voltaic (PV) systems reduce the use of electricity from the utility grid and therefore reduce CO_2 emissions. The feasibility of a 500-kW PV system for the Project was assessed using the NYSERDA Clean Power Estimator and solar energy and weather data for Sullivan County.

  A PV system, and the building roof to which it is attached, must be designed to safely support any combination of loads, including the dead weight of the PV array and aerodynamic wind loading. Due to the fact that the upward tilt of PV arrays creates an airfoil on a roof, wind loading is often the strongest force acting on a building roof with a PV system.[10] For a roof-mounted PV system with an ideal 30° tilt, the wind load would be 35-40 psf. Since the roof structure for the Project buildings are not adequate to support that wind load, it is assumed a PV system would be flat-mounted on the roof, with 5 lb/sf of roof ballast to hold it down.

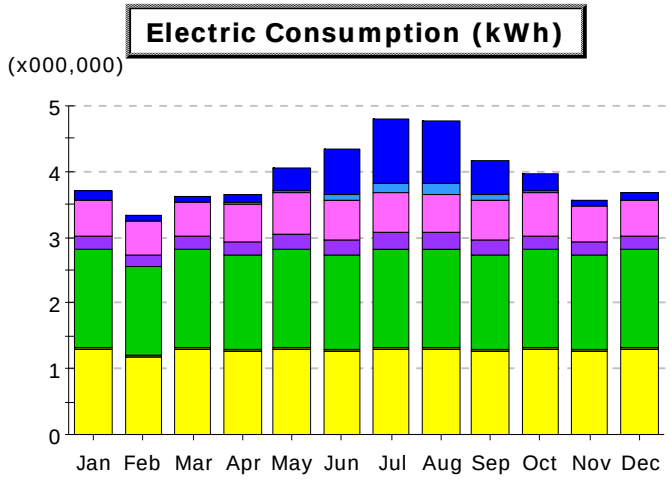
  For the PV analysis, a 500 kW system was assumed and at the Project site it would generate 580,466 kWh/year, reducing GHG emission by 263 tons/year. The estimated installed cost of the system is $8 per rated Watt, which gives a capital cost of $4,000,000 for the 500-kW system. The economics of a PV installation were calculated using the NYSERDA Clean Power Estimator. The calculated Net Present Value of the PV system is -$519,035 with a payback period of 59 years, which far exceeds the useful life of the PV equipment. The Simple Payback also has serious limitations as a measure of cost feasibility and is not used in making business decisions because it ignores inflation, the time value of money and investment risk.

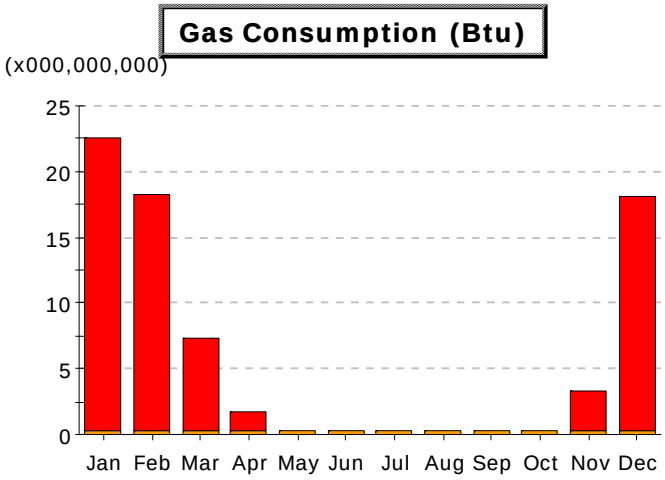
  Net Present Value (NPV) is the standard financial method for using the time value of money to appraise long-term Projects. Used for capital budgeting, and widely throughout economics, NPV measures the excess or shortfall of cash flows, in present value terms, once financing charges are met. If the NPV is positive, an investment may be accepted since it would add value to a Project over the long-term. If the NPV is negative, as is the case here (-$519,035), the investment should be rejected. From the results of the NYSERDA Clean Power Estimator, it is concluded that a PV system is economically infeasible for the Project.

[10] Messenger, R. and Ventre, J, Photovoltaic Systems Engineering, CRC Press, 2004.

APPENDIX A

EQUEST MODEL OUTPUT
FOR MAIN FACILITY BUILDING





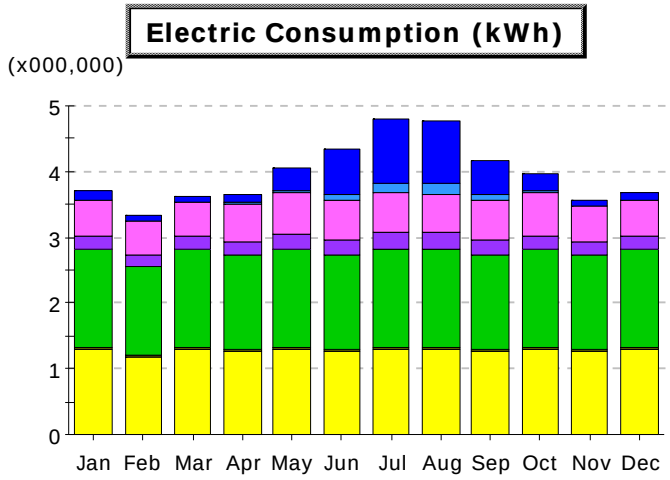
Area Lighting
Task Lighting
Misc. Equipment
Exterior Usage
Pumps & Aux.
Ventilation Fans
Water Heating
Ht Pump Supp.
Space Heating
Refrigeration

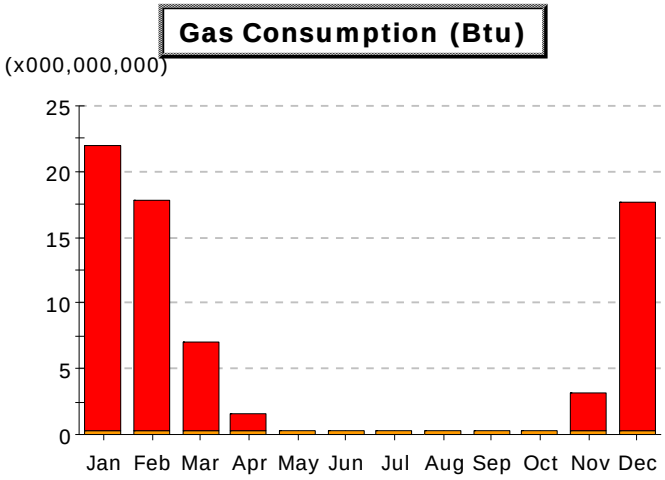
Electric Consumption (kWh x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.12	0.11	0.09	0.12	0.34	0.67	0.97	0.96	0.53	0.25	0.08	0.11	4.36
Heat Reject.	-	-	0.00	0.01	0.04	0.10	0.15	0.15	0.08	0.03	0.00	0.00	0.56
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.55	0.51	0.51	0.60	0.64	0.60	0.61	0.59	0.61	0.64	0.56	0.53	6.95
Pumps & Aux.	0.20	0.18	0.19	0.19	0.21	0.22	0.24	0.24	0.21	0.20	0.18	0.20	2.47
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.51	1.36	1.51	1.46	1.51	1.46	1.51	1.51	1.46	1.51	1.46	1.51	17.72
Task Lights	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.19
Area Lights	1.31	1.18	1.31	1.26	1.31	1.26	1.31	1.31	1.26	1.31	1.26	1.31	15.37
Total	3.70	3.35	3.62	3.65	4.06	4.34	4.80	4.77	4.17	3.95	3.56	3.67	47.63

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	22.27	17.89	6.95	1.38	-	-	-	-	-	-	3.01	17.84	69.33
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.30	0.29	0.32	0.30	0.29	0.26	0.25	0.24	0.23	0.24	0.25	0.28	3.25
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	22.57	18.18	7.26	1.68	0.29	0.26	0.25	0.24	0.23	0.24	3.27	18.12	72.58





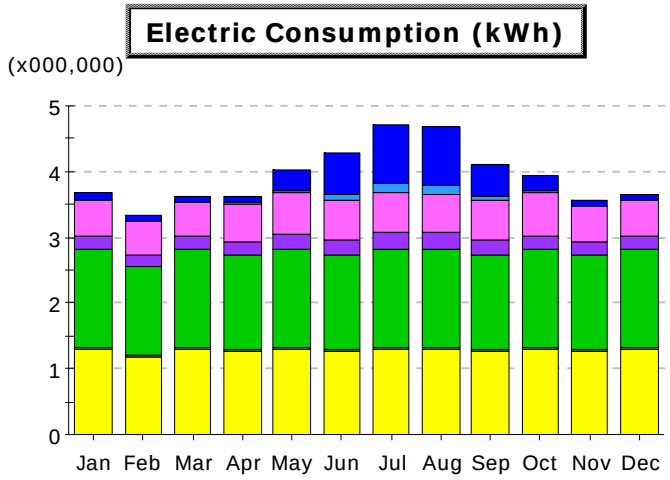
Area Lighting
Task Lighting
Misc. Equipment
Exterior Usage
Pumps & Aux.
Ventilation Fans
Water Heating
Ht Pump Supp.
Space Heating
Refrigeration

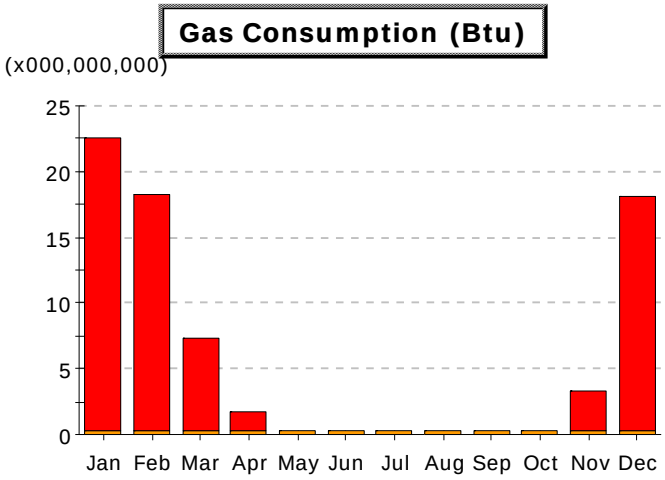
Electric Consumption (kWh x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.12	0.11	0.09	0.12	0.34	0.67	0.97	0.96	0.53	0.25	0.08	0.11	4.36
Heat Reject.	-	-	0.00	0.01	0.04	0.10	0.15	0.15	0.08	0.03	0.00	0.00	0.56
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.55	0.51	0.51	0.60	0.64	0.60	0.61	0.59	0.61	0.64	0.56	0.53	6.95
Pumps & Aux.	0.20	0.18	0.19	0.19	0.21	0.22	0.24	0.24	0.21	0.20	0.18	0.20	2.47
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.51	1.36	1.51	1.46	1.51	1.46	1.51	1.51	1.46	1.51	1.46	1.51	17.72
Task Lights	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.19
Area Lights	1.31	1.18	1.31	1.26	1.31	1.26	1.31	1.31	1.26	1.31	1.26	1.31	15.37
Total	3.70	3.35	3.62	3.65	4.06	4.34	4.80	4.77	4.17	3.95	3.56	3.67	47.63

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	21.74	17.47	6.78	1.35	-	-	-	-	-	-	2.94	17.42	67.70
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.30	0.29	0.32	0.30	0.29	0.26	0.25	0.24	0.23	0.24	0.25	0.28	3.25
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	22.05	17.76	7.10	1.65	0.29	0.26	0.25	0.24	0.23	0.24	3.20	17.70	70.95





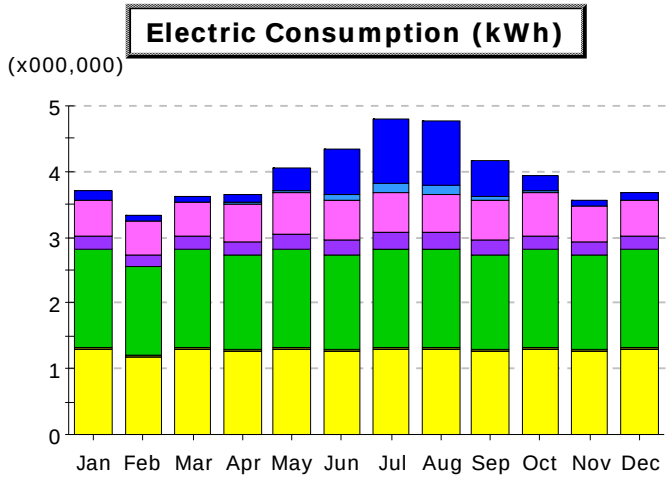
Area Lighting
Task Lighting
Misc. Equipment
Exterior Usage
Pumps & Aux.
Ventilation Fans
Water Heating
Ht Pump Supp.
Space Heating
Refrigeration

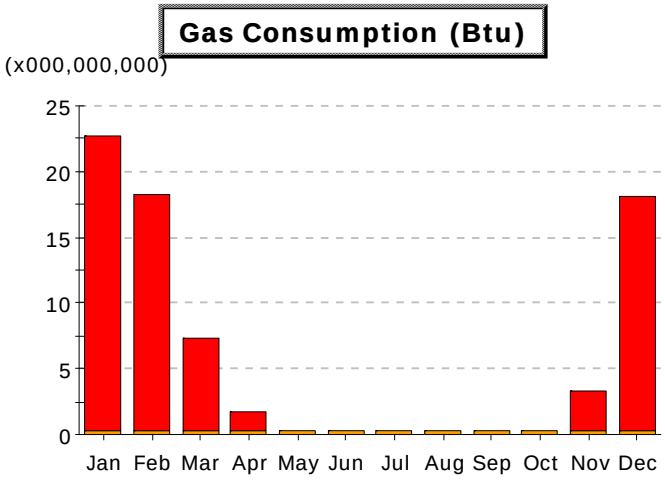
Electric Consumption (kWh x000,000)

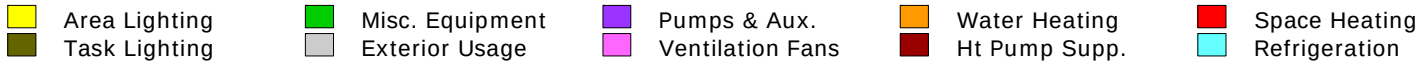
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.11	0.10	0.08	0.11	0.31	0.61	0.89	0.88	0.48	0.23	0.07	0.10	3.96
Heat Reject.	-	-	0.00	0.01	0.04	0.10	0.15	0.15	0.08	0.03	0.00	0.00	0.55
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.55	0.51	0.51	0.60	0.64	0.60	0.61	0.59	0.61	0.64	0.56	0.53	6.95
Pumps & Aux.	0.20	0.18	0.19	0.19	0.21	0.22	0.24	0.24	0.21	0.20	0.18	0.20	2.45
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.51	1.36	1.51	1.46	1.51	1.46	1.51	1.51	1.46	1.51	1.46	1.51	17.72
Task Lights	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.19
Area Lights	1.31	1.18	1.31	1.26	1.31	1.26	1.31	1.31	1.26	1.31	1.26	1.31	15.37
Total	3.68	3.34	3.61	3.63	4.03	4.27	4.71	4.68	4.11	3.93	3.55	3.66	47.21

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	22.27	17.89	6.95	1.38	-	-	-	-	-	-	3.01	17.84	69.33
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.30	0.29	0.32	0.30	0.29	0.26	0.25	0.24	0.23	0.24	0.25	0.28	3.25
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	22.57	18.18	7.26	1.68	0.29	0.26	0.25	0.24	0.23	0.24	3.27	18.12	72.58





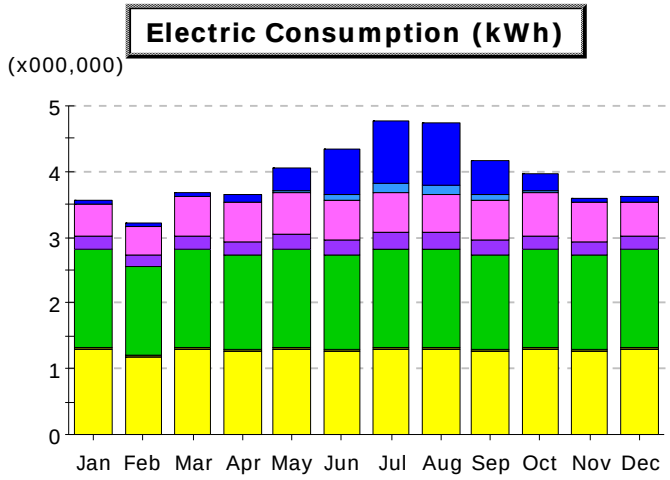


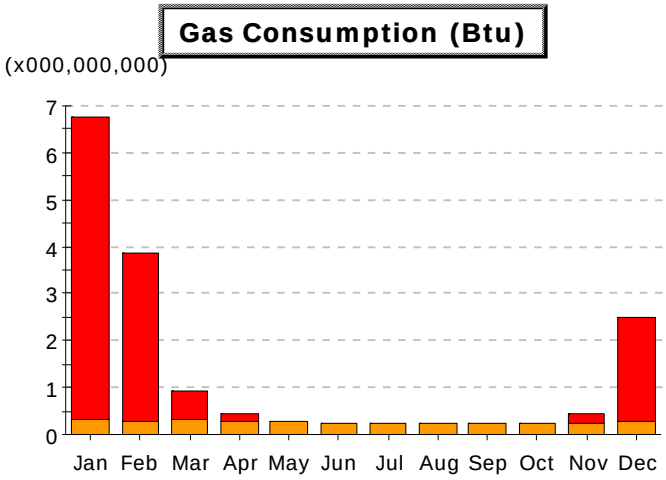
Electric Consumption (kWh x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.12	0.11	0.09	0.12	0.34	0.67	0.97	0.96	0.53	0.25	0.08	0.11	4.34
Heat Reject.	-	-	0.00	0.01	0.04	0.10	0.15	0.15	0.08	0.03	0.00	0.00	0.56
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.55	0.51	0.51	0.59	0.64	0.60	0.60	0.58	0.60	0.64	0.56	0.53	6.91
Pumps & Aux.	0.20	0.18	0.19	0.19	0.21	0.22	0.24	0.24	0.21	0.20	0.18	0.20	2.47
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.51	1.36	1.51	1.46	1.51	1.46	1.51	1.51	1.46	1.51	1.46	1.51	17.72
Task Lights	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.19
Area Lights	1.31	1.18	1.31	1.26	1.31	1.26	1.31	1.31	1.26	1.31	1.26	1.31	15.37
Total	3.70	3.35	3.62	3.64	4.06	4.33	4.79	4.76	4.16	3.95	3.56	3.67	47.57

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	22.33	18.00	7.03	1.40	-	-	-	-	-	-	3.07	17.87	69.69
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.30	0.29	0.32	0.30	0.29	0.26	0.25	0.24	0.23	0.24	0.25	0.28	3.25
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	22.63	18.28	7.35	1.70	0.29	0.26	0.25	0.24	0.23	0.24	3.32	18.15	72.94





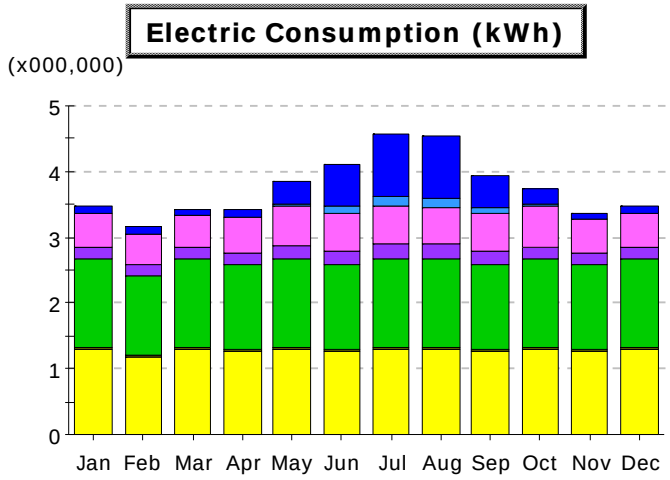
Area Lighting
Task Lighting
Misc. Equipment
Exterior Usage
Pumps & Aux.
Ventilation Fans
Water Heating
Ht Pump Supp.
Space Heating
Refrigeration

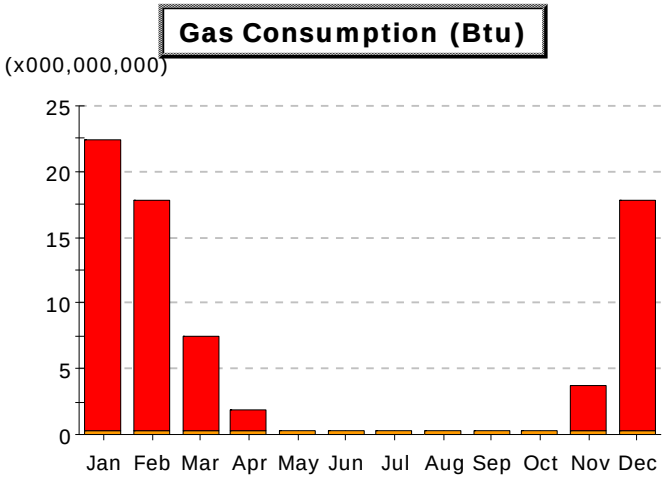
Electric Consumption (kWh x000,000)

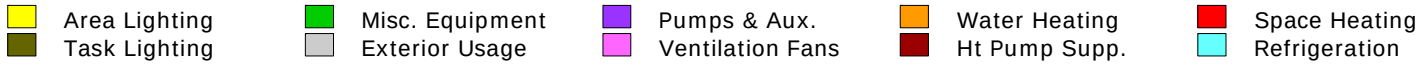
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.07	0.06	0.08	0.12	0.34	0.67	0.95	0.94	0.53	0.25	0.07	0.07	4.15
Heat Reject.	-	-	0.00	0.01	0.04	0.10	0.15	0.15	0.08	0.03	0.00	0.00	0.56
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.48	0.44	0.60	0.61	0.64	0.60	0.60	0.59	0.61	0.64	0.61	0.53	6.95
Pumps & Aux.	0.19	0.17	0.19	0.19	0.21	0.22	0.24	0.24	0.21	0.20	0.18	0.19	2.44
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.51	1.36	1.51	1.46	1.51	1.46	1.51	1.51	1.46	1.51	1.46	1.51	17.72
Task Lights	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.19
Area Lights	1.31	1.18	1.31	1.26	1.31	1.26	1.31	1.31	1.26	1.31	1.26	1.31	15.37
Total	3.57	3.23	3.69	3.65	4.06	4.33	4.77	4.75	4.17	3.95	3.60	3.61	47.38

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	6.46	3.58	0.63	0.12	-	-	-	-	-	-	0.19	2.23	13.20
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.30	0.29	0.32	0.30	0.29	0.26	0.25	0.24	0.23	0.24	0.25	0.28	3.25
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	6.76	3.87	0.94	0.42	0.29	0.26	0.25	0.24	0.23	0.24	0.44	2.51	16.45





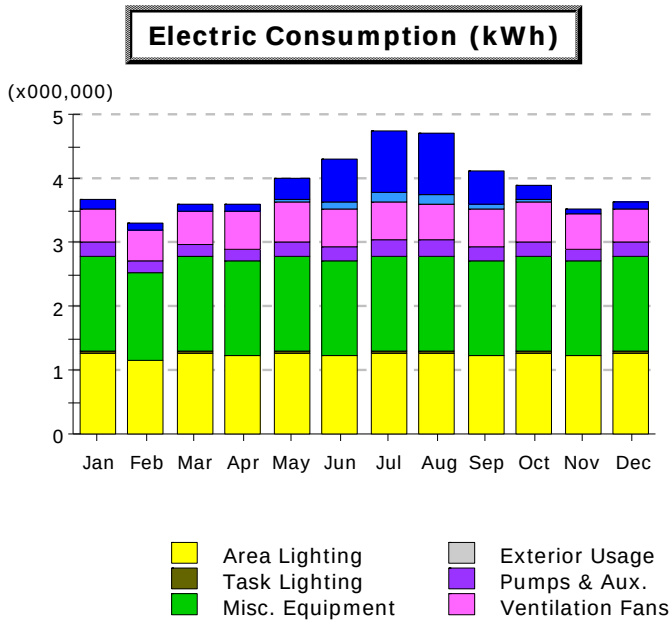


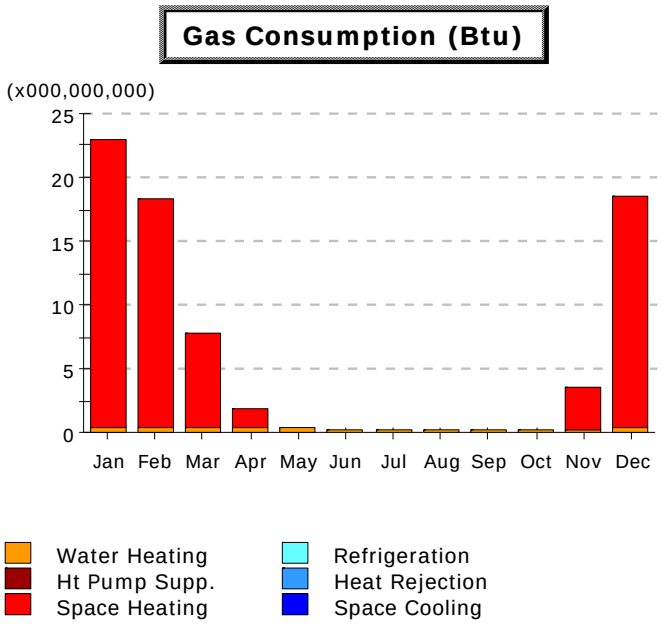
Electric Consumption (kWh x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.12	0.10	0.09	0.11	0.33	0.65	0.94	0.93	0.51	0.24	0.08	0.11	4.21
Heat Reject.	-	-	0.00	0.01	0.04	0.10	0.15	0.14	0.07	0.03	0.00	0.00	0.54
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.50	0.48	0.48	0.56	0.61	0.58	0.58	0.56	0.58	0.62	0.52	0.51	6.59
Pumps & Aux.	0.19	0.17	0.18	0.18	0.20	0.21	0.23	0.23	0.21	0.19	0.18	0.19	2.38
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.34	1.21	1.34	1.29	1.34	1.29	1.34	1.34	1.29	1.34	1.29	1.34	15.75
Task Lights	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.19
Area Lights	1.31	1.18	1.31	1.26	1.31	1.26	1.31	1.31	1.26	1.31	1.26	1.31	15.37
Total	3.48	3.16	3.42	3.43	3.84	4.11	4.56	4.53	3.95	3.74	3.35	3.47	45.03

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	22.10	17.56	7.19	1.61	-	-	-	-	-	-	3.52	17.59	69.58
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.30	0.29	0.32	0.30	0.29	0.26	0.25	0.24	0.23	0.24	0.25	0.28	3.25
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	22.40	17.85	7.51	1.92	0.29	0.26	0.25	0.24	0.23	0.24	3.77	17.87	72.82



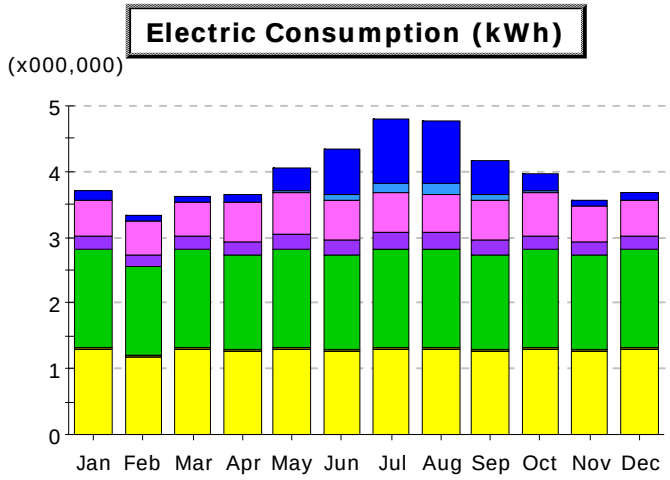


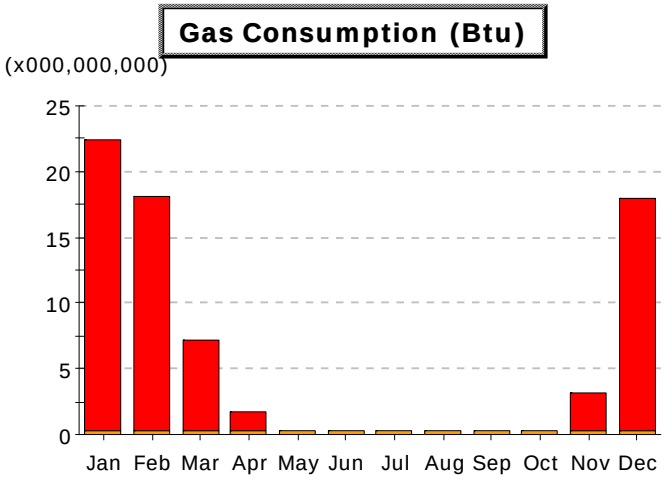
Electric Consumption (kWh x000,000)

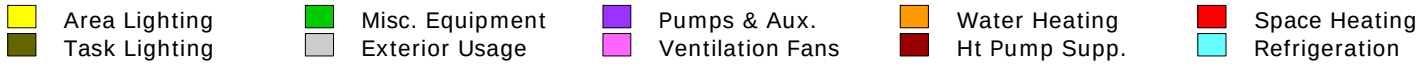
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.13	0.11	0.09	0.12	0.34	0.67	0.97	0.96	0.52	0.25	0.08	0.12	4.34
Heat Reject.	-	-	0.00	0.01	0.04	0.10	0.15	0.15	0.08	0.03	0.00	0.00	0.56
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.55	0.50	0.51	0.59	0.63	0.60	0.60	0.58	0.60	0.63	0.55	0.53	6.88
Pumps & Aux.	0.20	0.18	0.19	0.18	0.21	0.22	0.24	0.24	0.21	0.20	0.18	0.20	2.45
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.51	1.36	1.51	1.46	1.51	1.46	1.51	1.51	1.46	1.51	1.46	1.51	17.72
Task Lights	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.19
Area Lights	1.26	1.14	1.26	1.22	1.26	1.22	1.26	1.26	1.22	1.26	1.22	1.26	14.88
Total	3.66	3.31	3.58	3.59	4.01	4.28	4.74	4.71	4.11	3.90	3.51	3.64	47.03

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	22.57	18.10	7.39	1.47	-	-	-	-	-	-	3.30	18.17	71.00
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.31	0.29	0.32	0.30	0.29	0.26	0.25	0.24	0.23	0.24	0.25	0.28	3.25
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	22.88	18.38	7.71	1.77	0.29	0.26	0.25	0.24	0.23	0.24	3.55	18.45	74.25





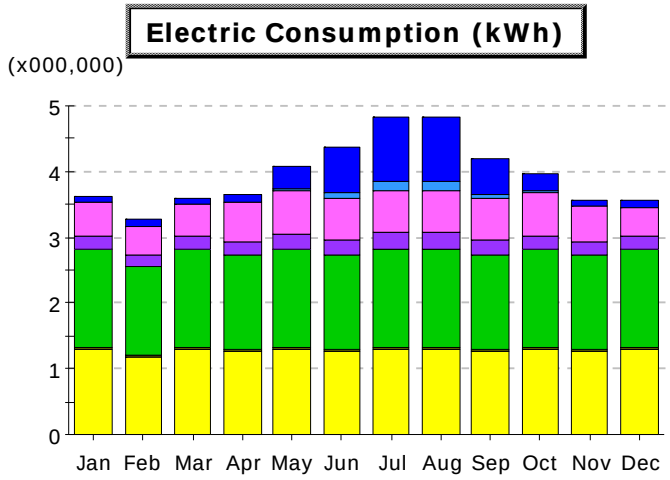


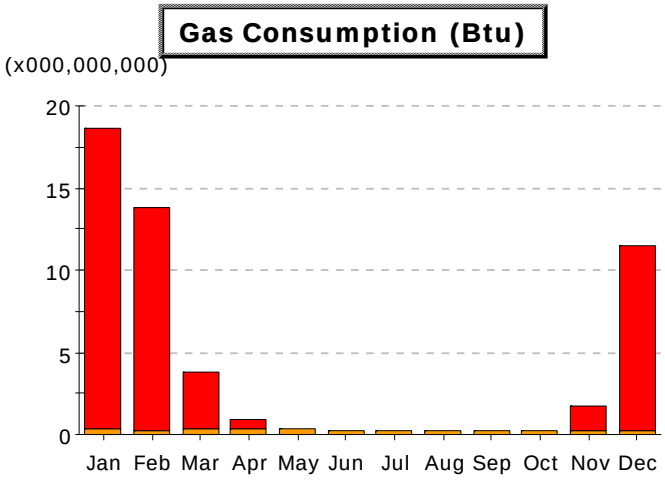
Electric Consumption (kWh x000,000)

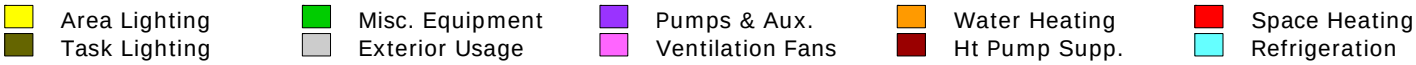
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.12	0.11	0.09	0.12	0.34	0.67	0.97	0.96	0.53	0.25	0.08	0.11	4.36
Heat Reject.	-	-	0.00	0.01	0.04	0.10	0.15	0.15	0.08	0.03	0.00	0.00	0.56
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.55	0.51	0.51	0.60	0.64	0.60	0.60	0.59	0.61	0.64	0.56	0.53	6.95
Pumps & Aux.	0.20	0.18	0.19	0.19	0.21	0.22	0.24	0.24	0.21	0.20	0.18	0.20	2.47
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.51	1.36	1.51	1.46	1.51	1.46	1.51	1.51	1.46	1.51	1.46	1.51	17.72
Task Lights	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.19
Area Lights	1.31	1.18	1.31	1.26	1.31	1.26	1.31	1.31	1.26	1.31	1.26	1.31	15.37
Total	3.69	3.35	3.62	3.65	4.06	4.33	4.80	4.77	4.17	3.95	3.56	3.67	47.62

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	22.16	17.84	6.85	1.36	-	-	-	-	-	-	2.91	17.74	68.86
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.30	0.29	0.32	0.30	0.29	0.26	0.25	0.24	0.23	0.24	0.25	0.28	3.25
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	22.46	18.12	7.16	1.66	0.29	0.26	0.25	0.24	0.23	0.24	3.17	18.03	72.11





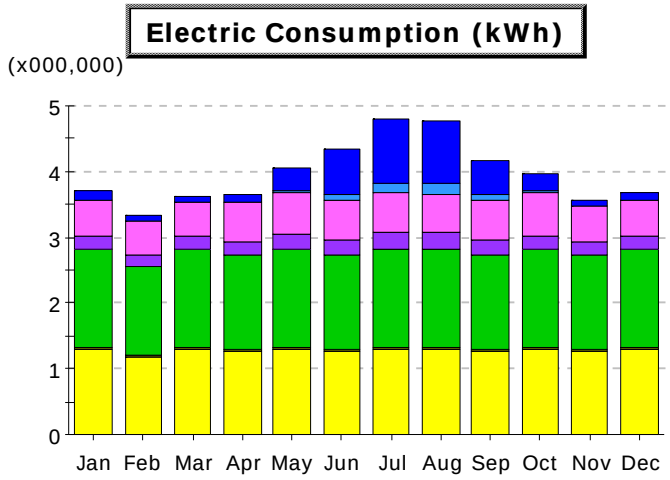


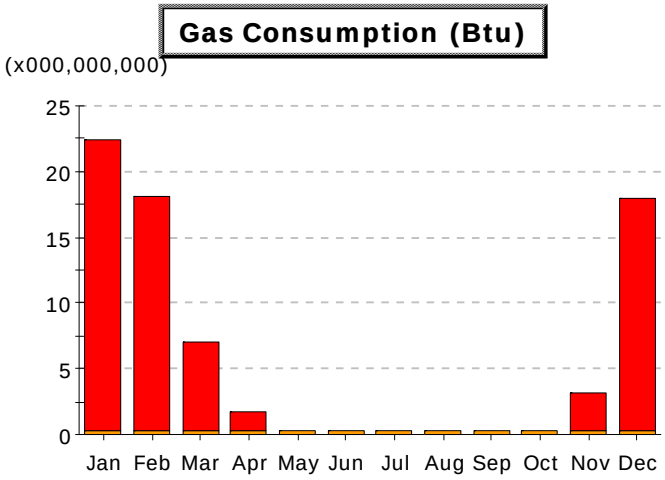
Electric Consumption (kWh x000,000)

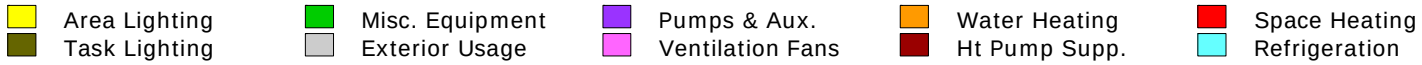
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.11	0.09	0.08	0.12	0.34	0.68	0.98	0.97	0.53	0.25	0.07	0.09	4.32
Heat Reject.	-	-	0.00	0.01	0.04	0.10	0.15	0.15	0.08	0.03	0.00	0.00	0.56
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.50	0.44	0.49	0.60	0.66	0.63	0.64	0.63	0.63	0.66	0.57	0.44	6.89
Pumps & Aux.	0.20	0.18	0.19	0.19	0.21	0.22	0.24	0.24	0.21	0.20	0.18	0.19	2.45
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.51	1.36	1.51	1.46	1.51	1.46	1.51	1.51	1.46	1.51	1.46	1.51	17.72
Task Lights	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.19
Area Lights	1.31	1.18	1.31	1.26	1.31	1.26	1.31	1.31	1.26	1.31	1.26	1.31	15.37
Total	3.63	3.26	3.59	3.65	4.08	4.37	4.84	4.82	4.19	3.97	3.56	3.55	47.51

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	18.29	13.54	3.53	0.60	-	-	-	-	-	-	1.50	11.23	48.69
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.31	0.29	0.32	0.30	0.29	0.26	0.25	0.24	0.23	0.24	0.25	0.29	3.25
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	18.60	13.83	3.85	0.90	0.29	0.26	0.25	0.24	0.23	0.24	1.75	11.52	51.94





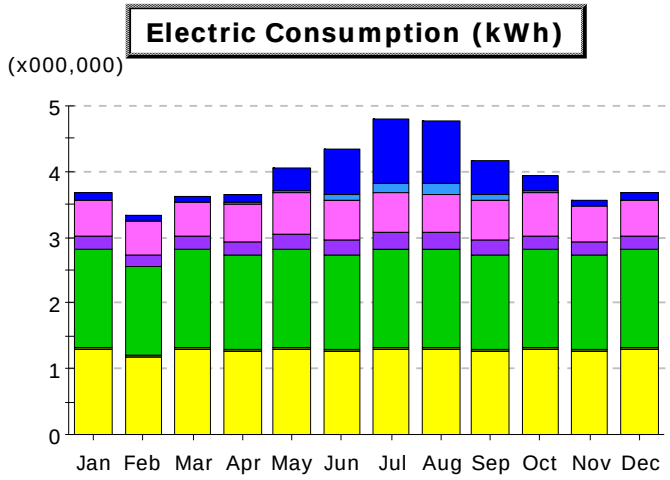


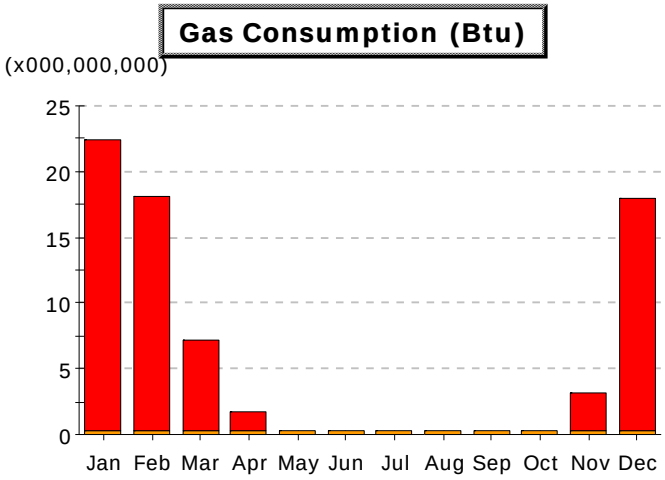
Electric Consumption (kWh x000,000)

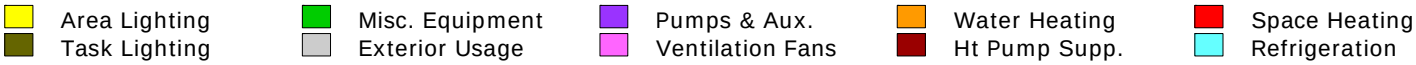
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.12	0.11	0.09	0.12	0.34	0.67	0.97	0.96	0.53	0.25	0.08	0.11	4.35
Heat Reject.	-	-	0.00	0.01	0.04	0.10	0.15	0.15	0.08	0.03	0.00	0.00	0.56
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.55	0.51	0.51	0.60	0.64	0.60	0.61	0.59	0.61	0.64	0.56	0.53	6.95
Pumps & Aux.	0.20	0.18	0.19	0.19	0.21	0.22	0.24	0.24	0.21	0.20	0.18	0.20	2.46
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.51	1.36	1.51	1.46	1.51	1.46	1.51	1.51	1.46	1.51	1.46	1.51	17.72
Task Lights	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.19
Area Lights	1.31	1.18	1.31	1.26	1.31	1.26	1.31	1.31	1.26	1.31	1.26	1.31	15.37
Total	3.69	3.34	3.62	3.65	4.06	4.34	4.80	4.77	4.16	3.95	3.56	3.67	47.62

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	22.04	17.76	6.77	1.35	-	-	-	-	-	-	2.93	17.64	68.49
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.30	0.29	0.32	0.30	0.29	0.26	0.25	0.24	0.23	0.24	0.25	0.28	3.25
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	22.35	18.05	7.09	1.65	0.29	0.26	0.25	0.24	0.23	0.24	3.18	17.92	71.74





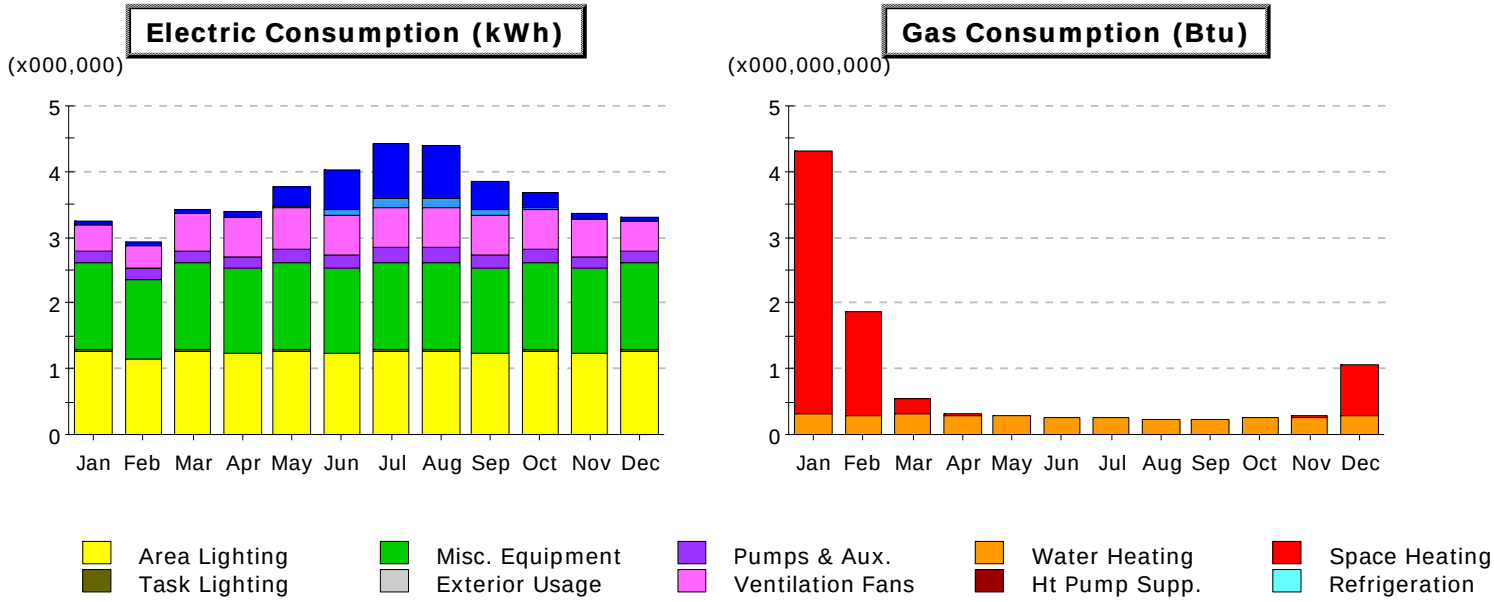


Electric Consumption (kWh x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.12	0.11	0.09	0.12	0.34	0.67	0.97	0.96	0.53	0.25	0.08	0.11	4.35
Heat Reject.	-	-	0.00	0.01	0.04	0.10	0.15	0.15	0.08	0.03	0.00	0.00	0.56
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.54	0.51	0.51	0.60	0.64	0.60	0.61	0.59	0.61	0.64	0.56	0.53	6.94
Pumps & Aux.	0.20	0.18	0.19	0.19	0.21	0.22	0.24	0.24	0.21	0.20	0.18	0.20	2.46
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.51	1.36	1.51	1.46	1.51	1.46	1.51	1.51	1.46	1.51	1.46	1.51	17.72
Task Lights	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.19
Area Lights	1.31	1.18	1.31	1.26	1.31	1.26	1.31	1.31	1.26	1.31	1.26	1.31	15.37
Total	3.69	3.34	3.62	3.64	4.06	4.33	4.80	4.77	4.16	3.95	3.55	3.67	47.59

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	22.12	17.79	6.86	1.36	-	-	-	-	-	-	2.96	17.64	68.73
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.30	0.29	0.32	0.30	0.29	0.26	0.25	0.24	0.23	0.24	0.25	0.28	3.25
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	22.43	18.08	7.17	1.66	0.29	0.26	0.25	0.24	0.23	0.24	3.21	17.93	71.98



Electric Consumption (kWh x000,000)

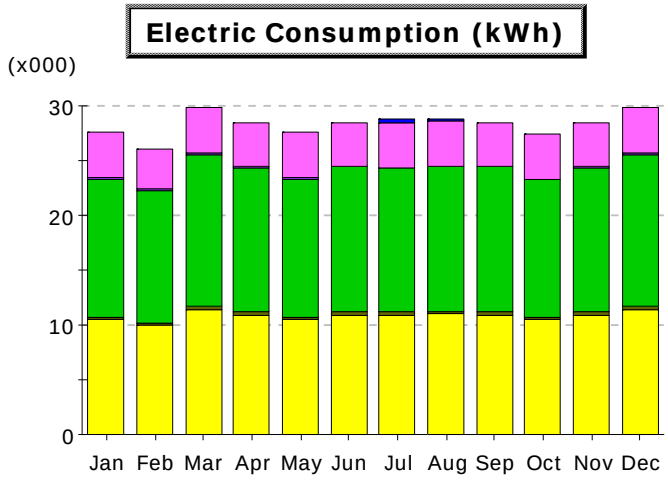
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.06	0.05	0.06	0.10	0.30	0.58	0.83	0.82	0.46	0.22	0.06	0.06	3.59
Heat Reject.	-	-	0.00	0.01	0.04	0.10	0.14	0.14	0.07	0.03	0.00	0.00	0.53
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	0.40	0.36	0.56	0.59	0.62	0.59	0.60	0.59	0.60	0.62	0.58	0.44	6.56
Pumps & Aux.	0.18	0.16	0.18	0.18	0.20	0.21	0.23	0.23	0.20	0.19	0.17	0.18	2.30
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.34	1.21	1.34	1.29	1.34	1.29	1.34	1.34	1.29	1.34	1.29	1.34	15.75
Task Lights	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.19
Area Lights	1.26	1.14	1.26	1.22	1.26	1.22	1.26	1.26	1.22	1.26	1.22	1.26	14.88
Total	3.25	2.94	3.43	3.40	3.77	4.01	4.42	4.40	3.86	3.68	3.35	3.30	43.81

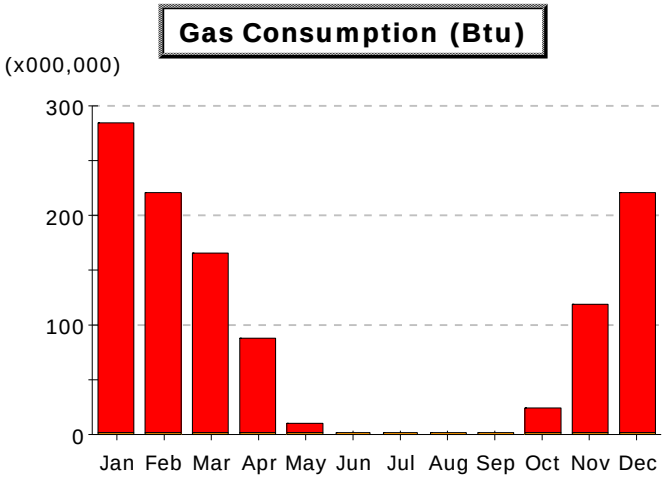
Gas Consumption (Btu x000,000,000)

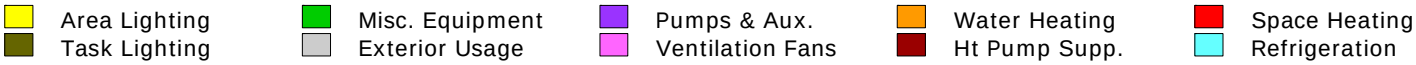
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	4.01	1.59	0.24	0.01	-	-	-	-	-	-	0.05	0.79	6.68
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.30	0.29	0.32	0.30	0.29	0.26	0.25	0.24	0.23	0.24	0.25	0.28	3.25
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	4.31	1.87	0.56	0.31	0.29	0.26	0.25	0.24	0.23	0.24	0.30	1.07	9.93

APPENDIX B

EQUEST MODEL OUTPUT
FOR WAREHOUSE BUILDING





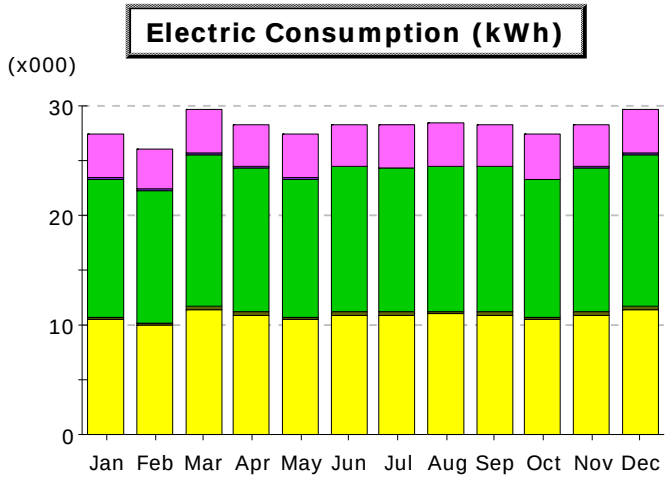


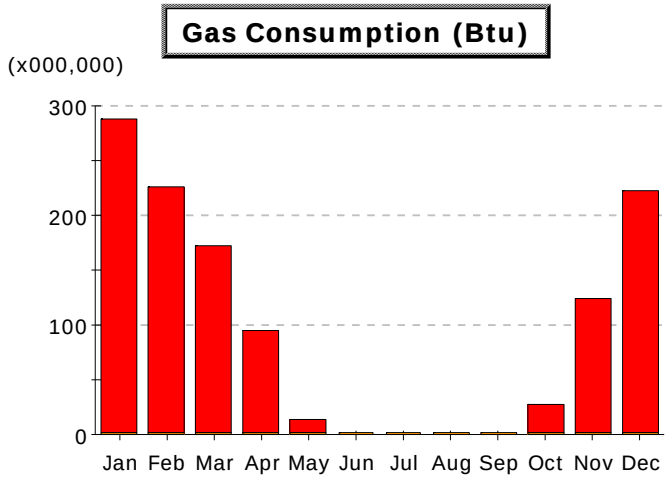
Electric Consumption (kWh x000)

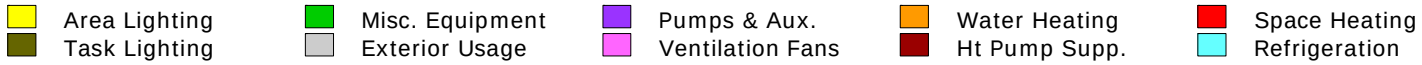
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	0.22	0.17	-	-	-	-	0.38
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	4.14	3.74	4.14	4.00	4.14	4.00	4.14	4.14	4.00	4.14	4.00	4.14	48.72
Pumps & Aux.	0.19	0.16	0.16	0.10	0.01	-	-	-	0.00	0.04	0.12	0.17	0.96
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	12.63	12.03	13.86	13.20	12.66	13.23	13.20	13.26	13.23	12.63	13.20	13.83	156.96
Task Lights	0.25	0.24	0.27	0.26	0.25	0.26	0.26	0.26	0.26	0.25	0.26	0.27	3.10
Area Lights	10.43	9.94	11.45	10.91	10.45	10.93	10.91	10.95	10.93	10.43	10.91	11.43	129.67
Total	27.64	26.10	29.88	28.48	27.51	28.43	28.73	28.77	28.43	27.49	28.50	29.84	339.79

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	282.8	219.5	164.0	85.0	9.2	-	-	-	-	22.1	117.8	218.0	1,118.2
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	2.0	1.9	2.2	2.1	1.9	1.8	1.6	1.6	1.6	1.6	1.8	2.0	22.1
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	284.7	221.4	166.2	87.1	11.1	1.8	1.6	1.6	1.6	23.7	119.5	220.0	1,140.3





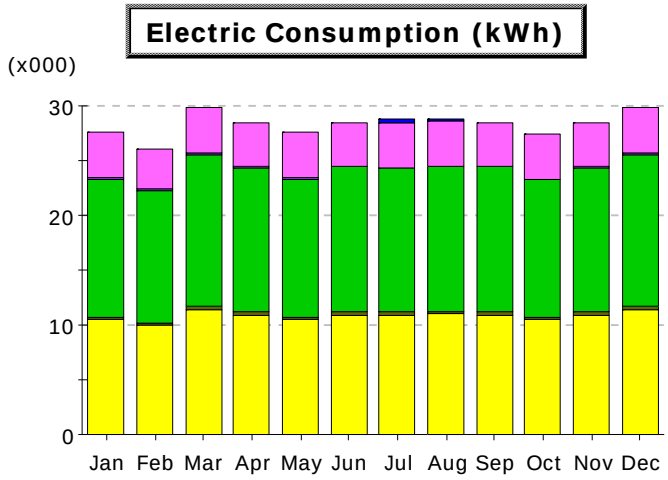


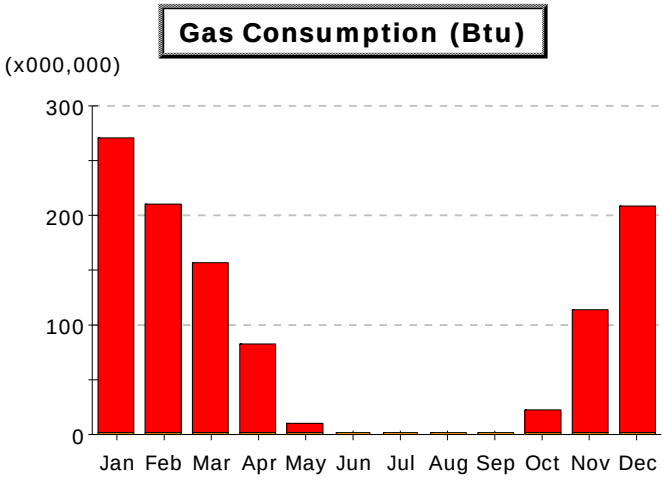
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	0.00	0.01	-	-	-	-	0.01
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	3.98	3.59	3.98	3.85	3.98	3.85	3.98	3.98	3.85	3.98	3.85	3.98	46.83
Pumps & Aux.	0.19	0.16	0.16	0.10	0.01	-	-	-	0.00	0.04	0.12	0.17	0.96
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	12.63	12.03	13.86	13.20	12.66	13.23	13.20	13.26	13.23	12.63	13.20	13.83	156.96
Task Lights	0.25	0.24	0.27	0.26	0.25	0.26	0.26	0.26	0.26	0.25	0.26	0.27	3.10
Area Lights	10.43	9.94	11.45	10.91	10.45	10.93	10.91	10.95	10.93	10.43	10.91	11.43	129.67
Total	27.47	25.96	29.72	28.32	27.35	28.27	28.35	28.46	28.27	27.33	28.34	29.68	337.53

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	286.4	224.3	170.0	91.9	12.6	-	-	-	-	26.6	121.8	220.8	1,154.4
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	2.0	1.9	2.2	2.1	1.9	1.8	1.6	1.6	1.6	1.6	1.8	2.0	22.1
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	288.4	226.2	172.2	94.0	14.5	1.8	1.6	1.6	1.6	28.2	123.6	222.8	1,176.5





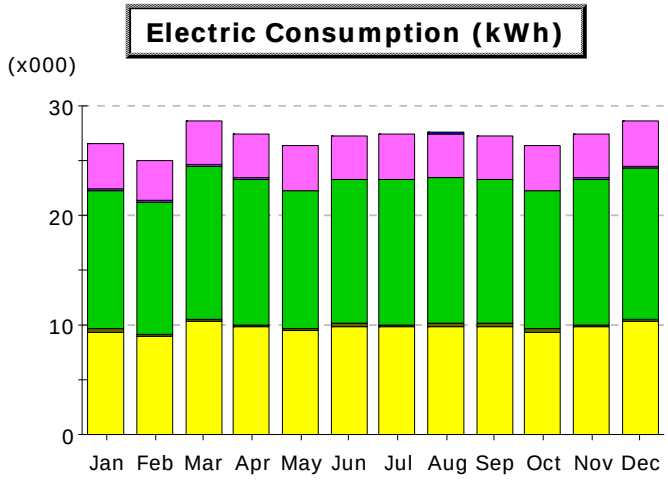
Area Lighting
Task Lighting
Misc. Equipment
Exterior Usage
Pumps & Aux.
Ventilation Fans
Water Heating
Ht Pump Supp.
Space Heating
Refrigeration

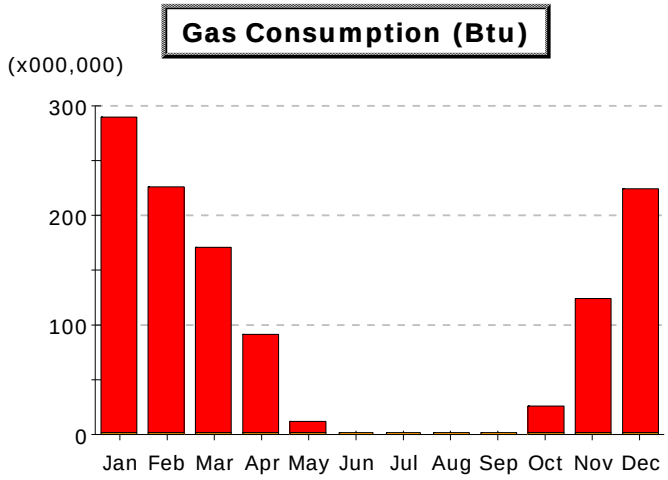
Electric Consumption (kWh x000)

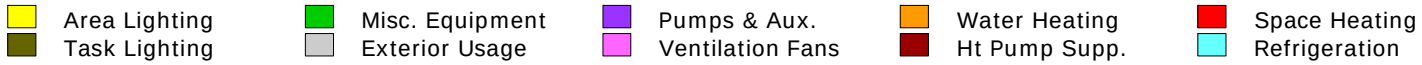
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	0.22	0.17	-	-	-	-	0.38
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	4.14	3.74	4.14	4.00	4.14	4.00	4.14	4.14	4.00	4.14	4.00	4.14	48.72
Pumps & Aux.	0.19	0.16	0.16	0.10	0.01	-	-	-	0.00	0.04	0.12	0.17	0.96
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	12.63	12.03	13.86	13.20	12.66	13.23	13.20	13.26	13.23	12.63	13.20	13.83	156.96
Task Lights	0.25	0.24	0.27	0.26	0.25	0.26	0.26	0.26	0.26	0.25	0.26	0.27	3.10
Area Lights	10.43	9.94	11.45	10.91	10.45	10.93	10.91	10.95	10.93	10.43	10.91	11.43	129.67
Total	27.64	26.10	29.88	28.48	27.51	28.43	28.73	28.77	28.43	27.49	28.50	29.84	339.79

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	268.1	208.1	155.5	80.6	8.7	-	-	-	-	21.0	111.7	206.7	1,060.4
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	2.0	1.9	2.2	2.1	1.9	1.8	1.6	1.6	1.6	1.6	1.8	2.0	22.1
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	270.1	210.1	157.7	82.7	10.6	1.8	1.6	1.6	1.6	22.6	113.4	208.7	1,082.4





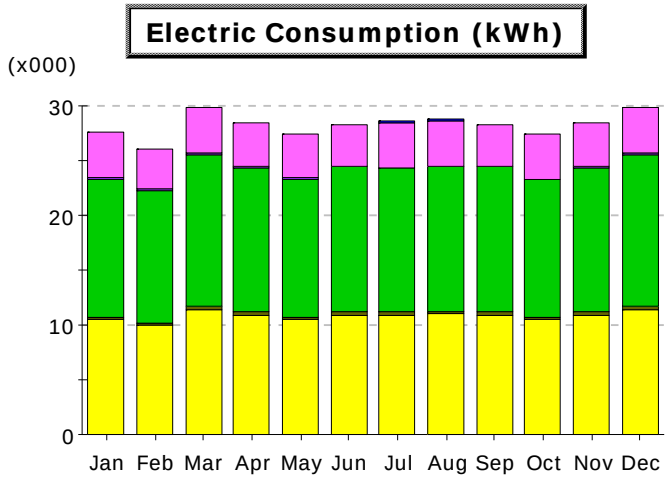


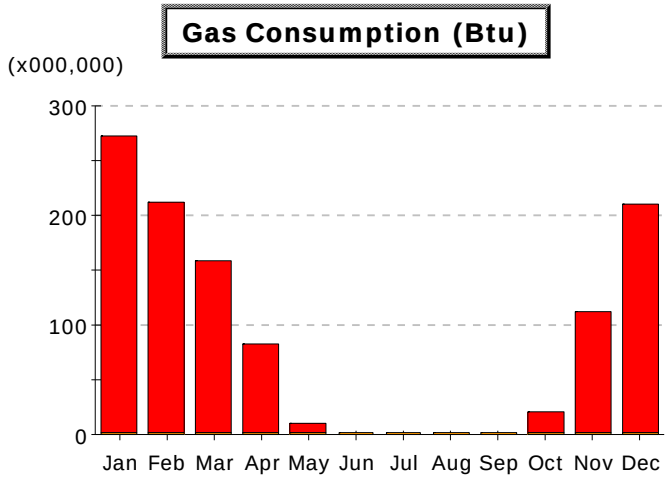
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	0.09	0.08	-	-	-	-	0.16
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	4.10	3.70	4.10	3.97	4.10	3.97	4.10	4.10	3.97	4.10	3.97	4.10	48.25
Pumps & Aux.	0.19	0.16	0.16	0.10	0.01	-	-	-	0.00	0.04	0.12	0.17	0.96
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	12.63	12.03	13.86	13.20	12.66	13.23	13.20	13.26	13.23	12.63	13.20	13.83	156.96
Task Lights	0.25	0.24	0.27	0.26	0.25	0.26	0.26	0.26	0.26	0.25	0.26	0.27	3.10
Area Lights	9.39	8.94	10.30	9.82	9.41	9.84	9.82	9.86	9.84	9.39	9.82	10.28	116.70
Total	26.55	25.07	28.69	27.35	26.42	27.29	27.47	27.55	27.30	26.41	27.37	28.66	326.14

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	287.1	223.7	168.8	88.8	10.5	-	-	-	-	24.7	122.1	222.8	1,148.4
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	2.0	1.9	2.2	2.1	1.9	1.8	1.6	1.6	1.6	1.6	1.8	2.0	22.1
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	289.1	225.6	171.0	90.9	12.4	1.8	1.6	1.6	1.6	26.3	123.9	224.8	1,170.5





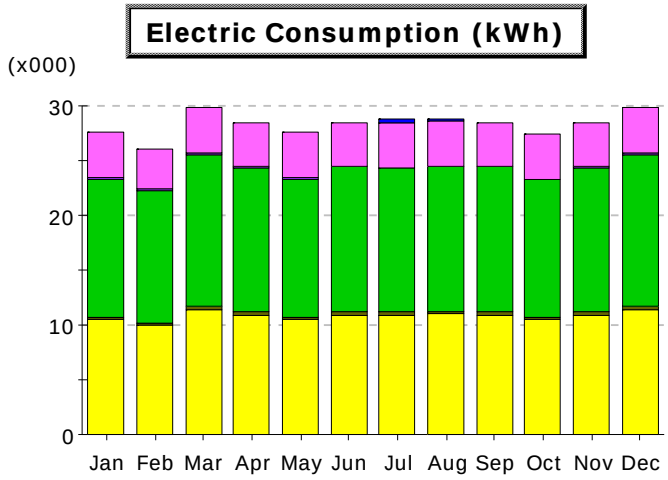
Area Lighting | Task Lighting | Misc. Equipment | Exterior Usage | Pumps & Aux. | Ventilation Fans | Water Heating | Ht Pump Supp. | Space Heating | Refrigeration

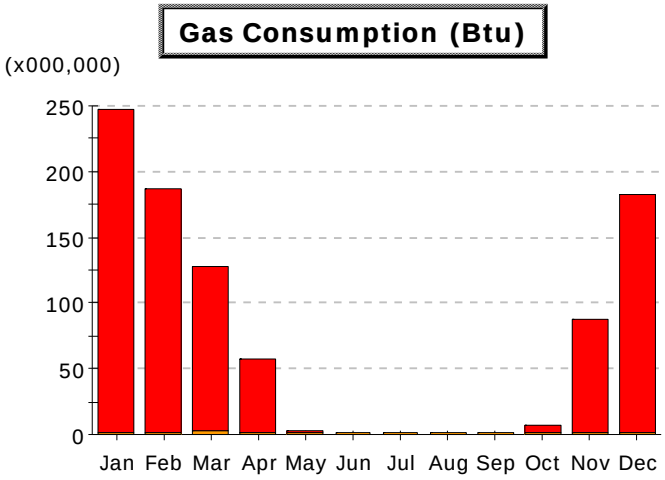
Electric Consumption (kWh x000)

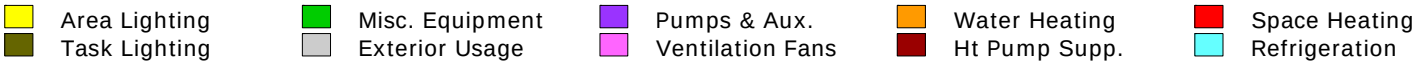
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	0.23	0.18	-	-	-	-	0.41
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	4.07	3.68	4.07	3.94	4.07	3.94	4.07	4.07	3.94	4.07	3.94	4.07	47.92
Pumps & Aux.	0.19	0.16	0.16	0.10	0.01	-	-	-	0.00	0.04	0.12	0.17	0.96
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	12.63	12.03	13.86	13.20	12.66	13.23	13.20	13.26	13.23	12.63	13.20	13.83	156.96
Task Lights	0.25	0.24	0.27	0.26	0.25	0.26	0.26	0.26	0.26	0.25	0.26	0.27	3.10
Area Lights	10.43	9.94	11.45	10.91	10.45	10.93	10.91	10.95	10.93	10.43	10.91	11.43	129.67
Total	27.57	26.04	29.81	28.41	27.44	28.36	28.67	28.72	28.36	27.42	28.43	29.78	339.02

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	271.0	210.2	156.0	80.4	8.4	-	-	-	-	19.6	110.7	207.5	1,063.8
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	2.0	1.9	2.2	2.1	1.9	1.8	1.6	1.6	1.6	1.6	1.8	2.0	22.0
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	272.9	212.2	158.2	82.5	10.3	1.8	1.6	1.6	1.6	21.2	112.5	209.5	1,085.8





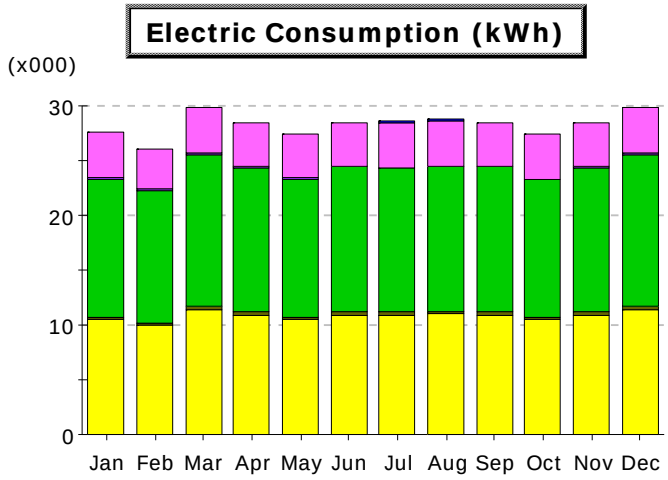


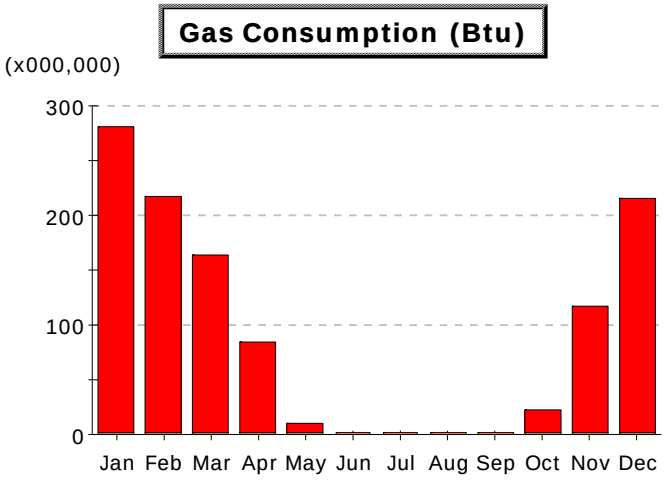
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	0.22	0.17	-	-	-	-	0.38
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	4.14	3.74	4.14	4.00	4.14	4.00	4.14	4.14	4.00	4.14	4.00	4.14	48.72
Pumps & Aux.	0.19	0.16	0.16	0.10	0.01	-	-	-	0.00	0.04	0.12	0.17	0.96
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	12.63	12.03	13.86	13.20	12.66	13.23	13.20	13.26	13.23	12.63	13.20	13.83	156.96
Task Lights	0.25	0.24	0.27	0.26	0.25	0.26	0.26	0.26	0.26	0.25	0.26	0.27	3.10
Area Lights	10.43	9.94	11.45	10.91	10.45	10.93	10.91	10.95	10.93	10.43	10.91	11.43	129.67
Total	27.64	26.10	29.88	28.48	27.51	28.43	28.73	28.77	28.43	27.49	28.50	29.84	339.79

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	245.34	185.41	125.63	54.78	1.38	-	-	-	-	5.40	85.39	180.09	883.41
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	1.98	1.95	2.24	2.10	1.87	1.78	1.64	1.57	1.57	1.59	1.79	2.02	22.10
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	247.31	187.35	127.88	56.88	3.24	1.78	1.64	1.57	1.57	6.99	87.18	182.11	905.51





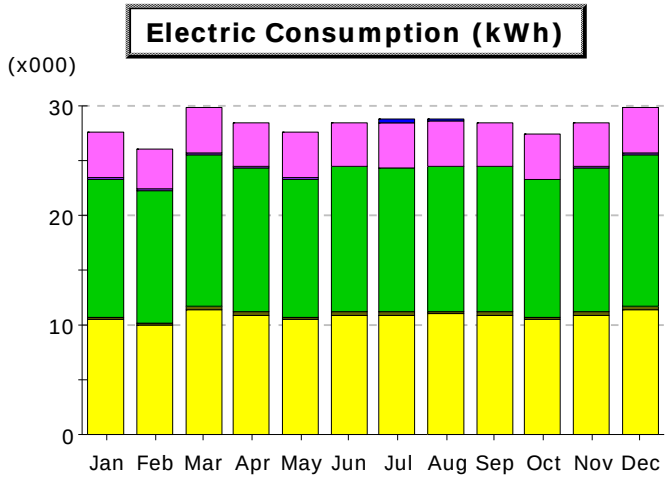
Area Lighting | Task Lighting | Misc. Equipment | Exterior Usage | Pumps & Aux. | Ventilation Fans | Water Heating | Ht Pump Supp. | Space Heating | Refrigeration

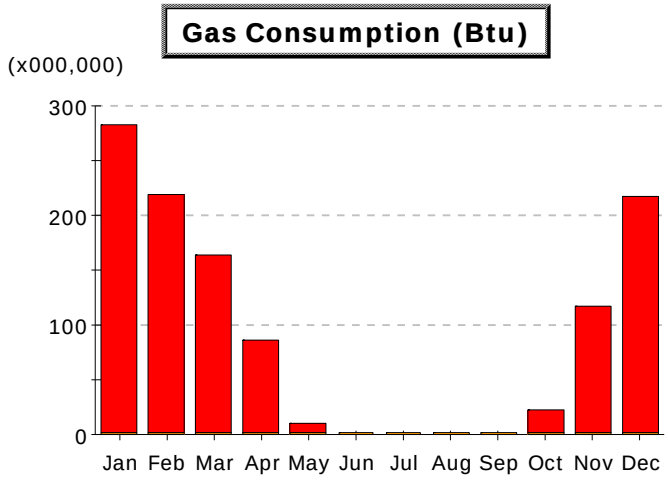
Electric Consumption (kWh x000)

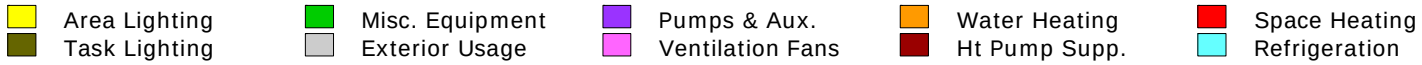
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	0.23	0.18	-	-	-	-	0.41
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	4.09	3.69	4.09	3.95	4.09	3.95	4.09	4.09	3.95	4.09	3.95	4.09	48.11
Pumps & Aux.	0.19	0.16	0.16	0.10	0.01	-	-	-	0.00	0.04	0.12	0.17	0.96
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	12.63	12.03	13.86	13.20	12.66	13.23	13.20	13.26	13.23	12.63	13.20	13.83	156.96
Task Lights	0.25	0.24	0.27	0.26	0.25	0.26	0.26	0.26	0.26	0.25	0.26	0.27	3.10
Area Lights	10.43	9.94	11.45	10.91	10.45	10.93	10.91	10.95	10.93	10.43	10.91	11.43	129.67
Total	27.58	26.06	29.83	28.43	27.46	28.38	28.69	28.73	28.38	27.44	28.45	29.79	339.21

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	278.6	216.1	161.2	83.2	8.8	-	-	-	-	21.3	115.3	214.2	1,098.8
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	2.0	1.9	2.2	2.1	1.9	1.8	1.6	1.6	1.6	1.6	1.8	2.0	22.0
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	280.6	218.1	163.4	85.3	10.7	1.8	1.6	1.6	1.6	22.9	117.1	216.2	1,120.9





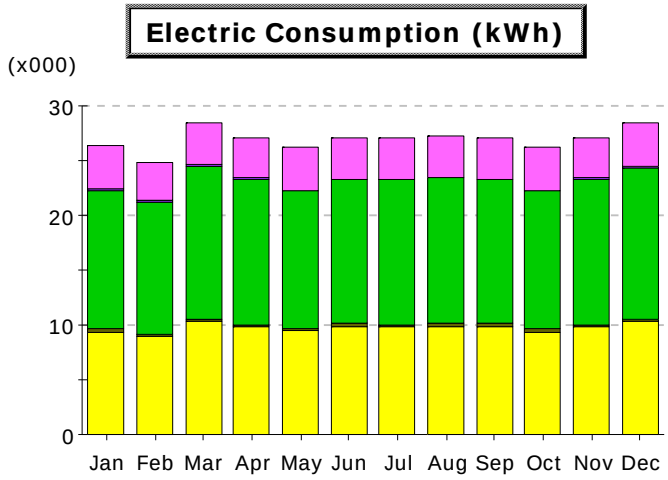


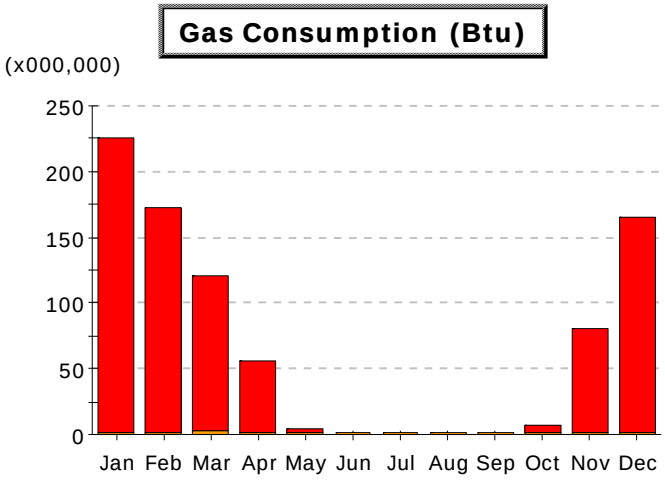
Electric Consumption (kWh x000)

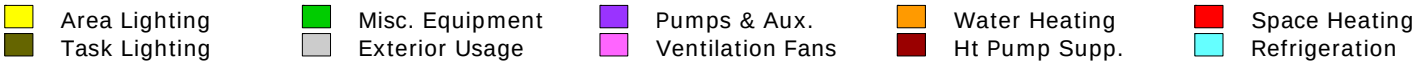
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	0.24	0.18	-	-	-	-	0.42
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	4.13	3.73	4.13	4.00	4.13	4.00	4.13	4.13	4.00	4.13	4.00	4.13	48.62
Pumps & Aux.	0.19	0.16	0.16	0.10	0.01	-	-	-	0.00	0.04	0.12	0.17	0.96
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	12.63	12.03	13.86	13.20	12.66	13.23	13.20	13.26	13.23	12.63	13.20	13.83	156.96
Task Lights	0.25	0.24	0.27	0.26	0.25	0.26	0.26	0.26	0.26	0.25	0.26	0.27	3.10
Area Lights	10.43	9.94	11.45	10.91	10.45	10.93	10.91	10.95	10.93	10.43	10.91	11.43	129.67
Total	27.63	26.09	29.87	28.47	27.50	28.42	28.74	28.78	28.42	27.48	28.49	29.84	339.72

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	280.2	217.3	162.0	83.7	8.9	-	-	-	-	21.4	116.2	215.7	1,105.5
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	2.0	1.9	2.2	2.1	1.9	1.8	1.6	1.6	1.6	1.6	1.8	2.0	22.0
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	282.2	219.3	164.3	85.8	10.7	1.8	1.6	1.6	1.6	23.0	118.0	217.7	1,127.6







Electric Consumption (kWh x000)

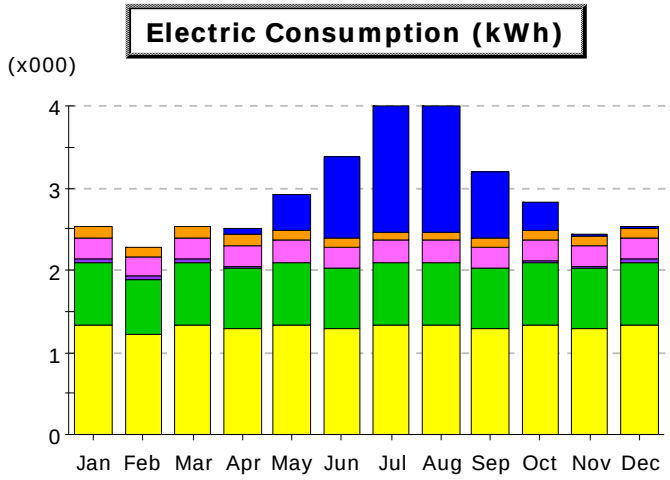
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	0.00	0.01	-	-	-	-	0.01
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	3.86	3.49	3.86	3.73	3.86	3.73	3.86	3.86	3.73	3.86	3.73	3.86	45.44
Pumps & Aux.	0.19	0.16	0.16	0.10	0.01	-	-	-	0.00	0.04	0.12	0.17	0.96
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	12.63	12.03	13.86	13.20	12.66	13.23	13.20	13.26	13.23	12.63	13.20	13.83	156.96
Task Lights	0.25	0.24	0.27	0.26	0.25	0.26	0.26	0.26	0.26	0.25	0.26	0.27	3.10
Area Lights	9.39	8.94	10.30	9.82	9.41	9.84	9.82	9.86	9.84	9.39	9.82	10.28	116.70
Total	26.31	24.86	28.45	27.12	26.19	27.06	27.14	27.24	27.06	26.17	27.14	28.42	323.16

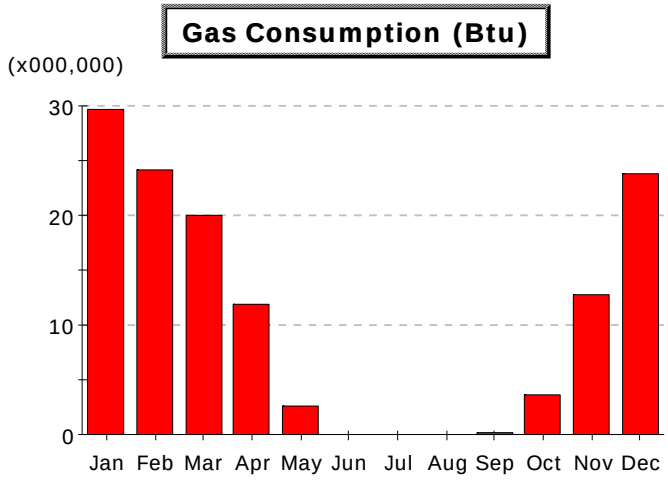
Gas Consumption (Btu x000,000)

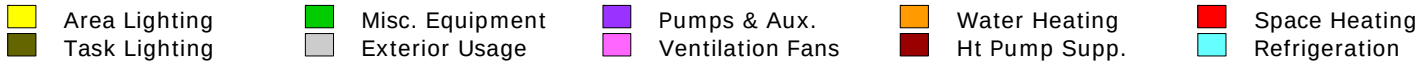
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	223.87	170.96	117.85	53.78	2.33	-	-	-	-	5.88	78.81	163.66	817.14
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	1.98	1.95	2.24	2.10	1.87	1.78	1.65	1.57	1.57	1.59	1.79	2.02	22.11
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	225.85	172.91	120.09	55.88	4.20	1.78	1.65	1.57	1.57	7.47	80.60	165.68	839.25

APPENDIX C

EQUEST MODEL OUTPUT
FOR CONVENIENCE STORE





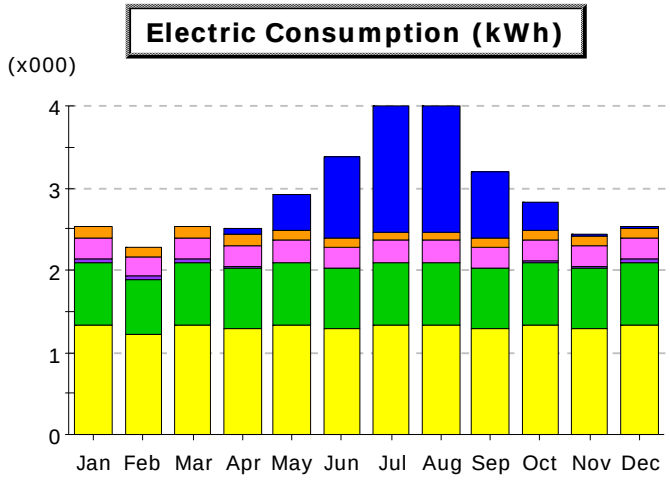


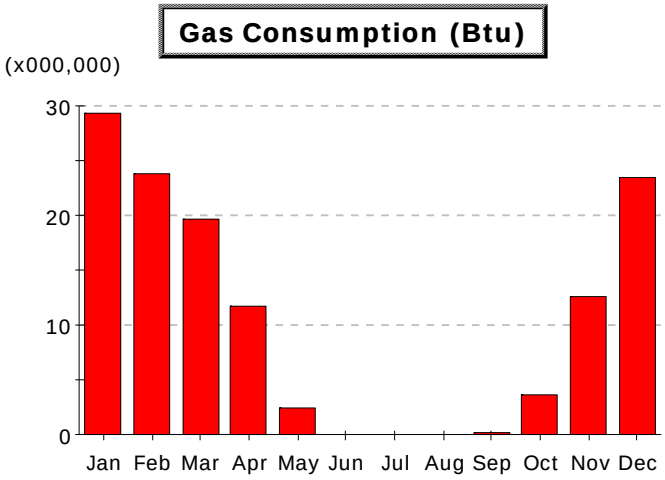
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.01	0.07	0.44	0.98	1.53	1.54	0.82	0.35	0.02	0.01	5.77
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.13	0.13	0.14	0.13	0.13	0.11	0.11	0.10	0.10	0.11	0.11	0.13	1.42
Vent. Fans	0.26	0.23	0.26	0.25	0.26	0.25	0.26	0.26	0.25	0.26	0.25	0.26	3.06
Pumps & Aux.	0.04	0.03	0.03	0.02	0.00	-	-	-	0.00	0.01	0.02	0.03	0.19
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	0.76	0.68	0.76	0.73	0.76	0.73	0.76	0.76	0.73	0.76	0.73	0.76	8.92
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.34	1.21	1.34	1.30	1.34	1.30	1.34	1.34	1.30	1.34	1.30	1.34	15.77
Total	2.53	2.29	2.54	2.50	2.92	3.38	3.99	4.00	3.20	2.82	2.43	2.52	35.12

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	29.59	24.18	19.94	11.82	2.51	0.02	-	-	0.15	3.60	12.78	23.71	128.31
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	29.59	24.18	19.94	11.82	2.51	0.02	-	-	0.15	3.60	12.78	23.71	128.31





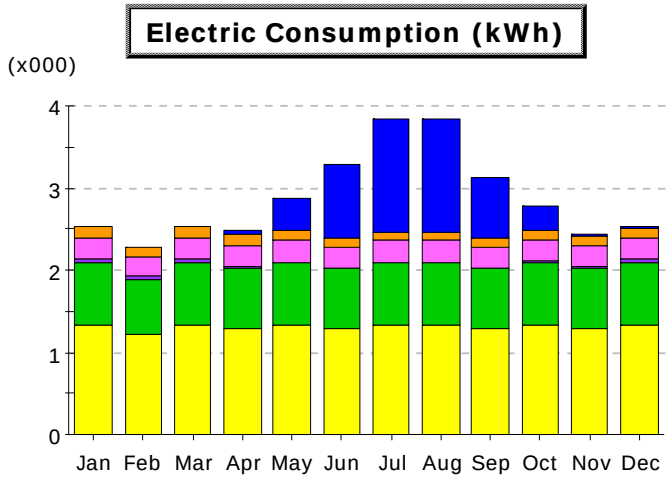
Area Lighting | Task Lighting | Misc. Equipment | Exterior Usage | Pumps & Aux. | Ventilation Fans | Water Heating | Ht Pump Supp. | Space Heating | Refrigeration

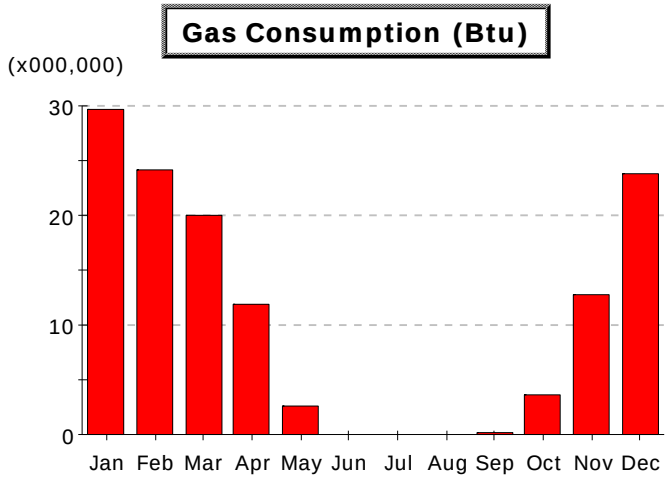
Electric Consumption (kWh x000)

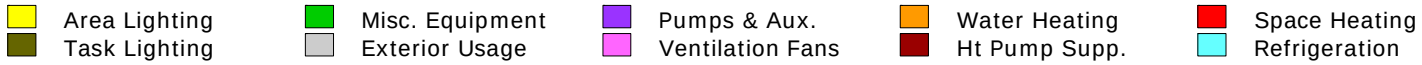
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.01	0.07	0.44	0.98	1.53	1.54	0.82	0.35	0.02	0.01	5.77
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.13	0.13	0.14	0.13	0.13	0.11	0.11	0.10	0.10	0.11	0.11	0.13	1.42
Vent. Fans	0.26	0.23	0.26	0.25	0.26	0.25	0.26	0.26	0.25	0.26	0.25	0.26	3.06
Pumps & Aux.	0.04	0.03	0.03	0.02	0.00	-	-	-	0.00	0.01	0.02	0.03	0.19
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	0.76	0.68	0.76	0.73	0.76	0.73	0.76	0.76	0.73	0.76	0.73	0.76	8.92
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.34	1.21	1.34	1.30	1.34	1.30	1.34	1.34	1.30	1.34	1.30	1.34	15.77
Total	2.53	2.29	2.54	2.50	2.92	3.38	3.99	4.00	3.20	2.82	2.43	2.52	35.12

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	29.23	23.88	19.70	11.68	2.48	0.02	-	-	0.15	3.56	12.62	23.42	126.73
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	29.23	23.88	19.70	11.68	2.48	0.02	-	-	0.15	3.56	12.62	23.42	126.73





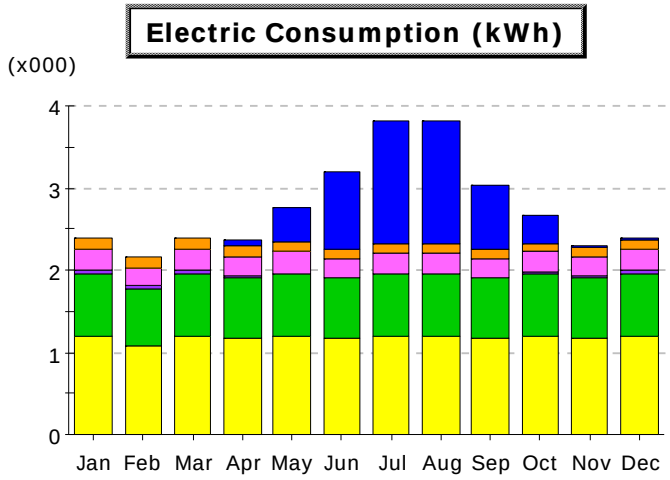


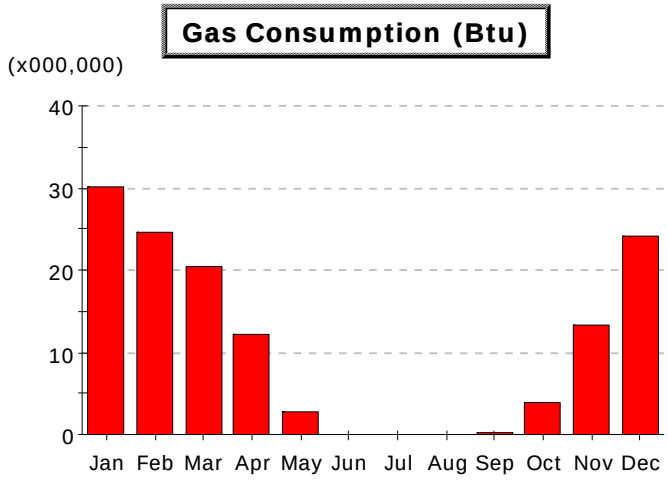
Electric Consumption (kWh x000)

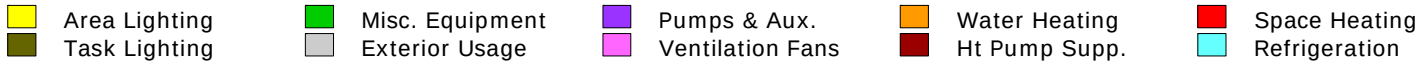
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.01	0.06	0.39	0.88	1.37	1.38	0.74	0.31	0.02	0.01	5.18
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.13	0.13	0.14	0.13	0.13	0.11	0.11	0.10	0.10	0.11	0.11	0.13	1.42
Vent. Fans	0.26	0.23	0.26	0.25	0.26	0.25	0.26	0.26	0.25	0.26	0.25	0.26	3.06
Pumps & Aux.	0.04	0.03	0.03	0.02	0.00	-	-	-	0.00	0.01	0.02	0.03	0.19
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	0.76	0.68	0.76	0.73	0.76	0.73	0.76	0.76	0.73	0.76	0.73	0.76	8.92
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.34	1.21	1.34	1.30	1.34	1.30	1.34	1.34	1.30	1.34	1.30	1.34	15.77
Total	2.53	2.29	2.54	2.49	2.88	3.28	3.84	3.84	3.12	2.79	2.43	2.52	34.54

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	29.59	24.18	19.94	11.82	2.51	0.02	-	-	0.15	3.60	12.78	23.71	128.31
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	29.59	24.18	19.94	11.82	2.51	0.02	-	-	0.15	3.60	12.78	23.71	128.31





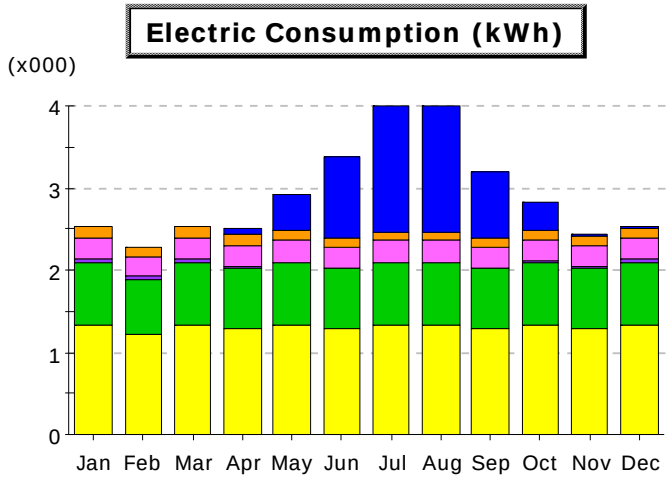


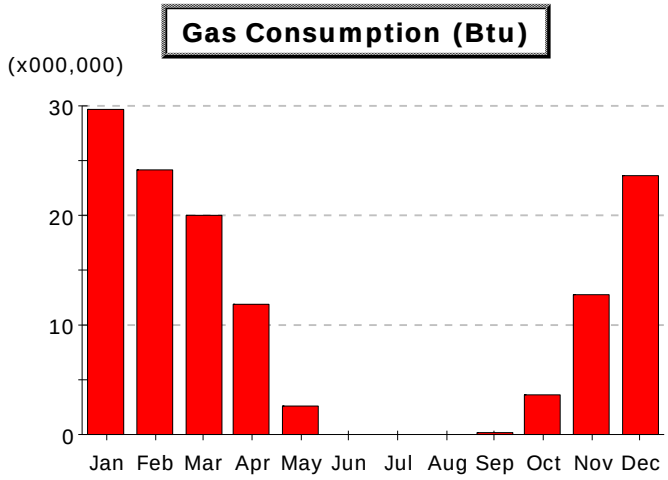
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.01	0.06	0.41	0.95	1.49	1.50	0.79	0.33	0.01	0.01	5.56
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.13	0.13	0.14	0.13	0.13	0.11	0.11	0.10	0.10	0.11	0.11	0.13	1.42
Vent. Fans	0.25	0.23	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	2.98
Pumps & Aux.	0.04	0.03	0.03	0.02	0.00	-	-	-	0.00	0.01	0.02	0.03	0.19
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	0.76	0.68	0.76	0.73	0.76	0.73	0.76	0.76	0.73	0.76	0.73	0.76	8.92
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.21	1.09	1.21	1.17	1.21	1.17	1.21	1.21	1.17	1.21	1.17	1.21	14.19
Total	2.39	2.16	2.40	2.36	2.76	3.20	3.81	3.82	3.03	2.66	2.30	2.38	33.27

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	30.09	24.63	20.45	12.28	2.75	0.05	-	-	0.18	3.88	13.29	24.21	131.82
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	30.09	24.63	20.45	12.28	2.75	0.05	-	-	0.18	3.88	13.29	24.21	131.82





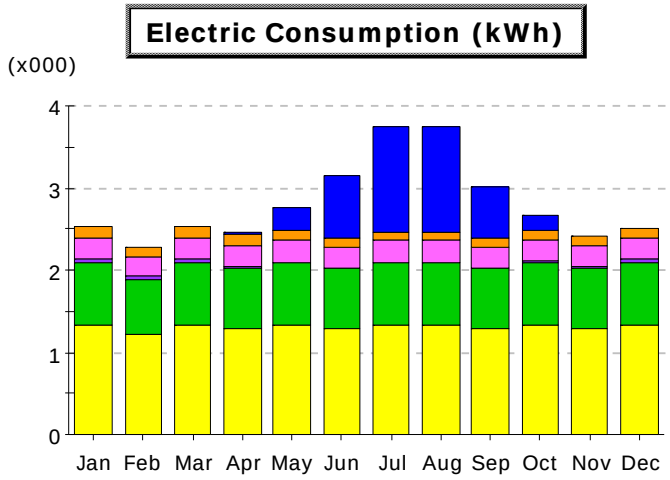
Area Lighting | Task Lighting | Misc. Equipment | Exterior Usage | Pumps & Aux. | Ventilation Fans | Water Heating | Ht Pump Supp. | Space Heating | Refrigeration

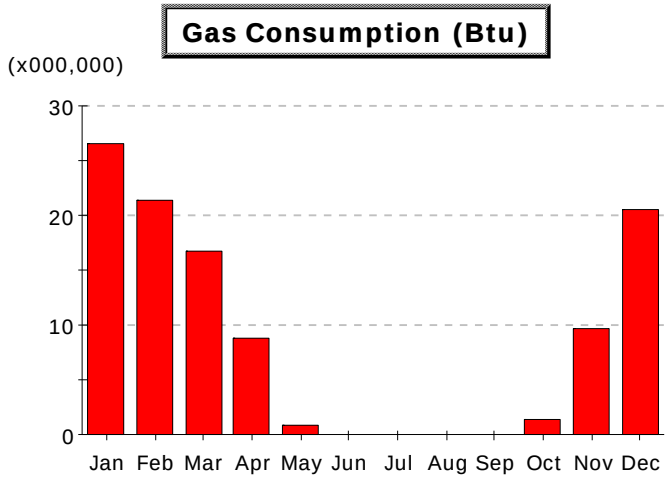
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.01	0.07	0.44	0.98	1.53	1.54	0.82	0.35	0.02	0.01	5.76
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.13	0.13	0.14	0.13	0.13	0.11	0.11	0.10	0.10	0.11	0.11	0.13	1.42
Vent. Fans	0.26	0.23	0.26	0.25	0.26	0.25	0.26	0.26	0.25	0.26	0.25	0.26	3.06
Pumps & Aux.	0.04	0.03	0.03	0.02	0.00	-	-	-	0.00	0.01	0.02	0.03	0.19
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	0.76	0.68	0.76	0.73	0.76	0.73	0.76	0.76	0.73	0.76	0.73	0.76	8.92
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.34	1.21	1.34	1.30	1.34	1.30	1.34	1.34	1.30	1.34	1.30	1.34	15.77
Total	2.53	2.29	2.54	2.50	2.92	3.38	3.99	4.00	3.20	2.82	2.43	2.52	35.12

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	29.58	24.17	19.94	11.82	2.51	0.02	-	-	0.15	3.59	12.77	23.70	128.27
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	29.58	24.17	19.94	11.82	2.51	0.02	-	-	0.15	3.59	12.77	23.70	128.27





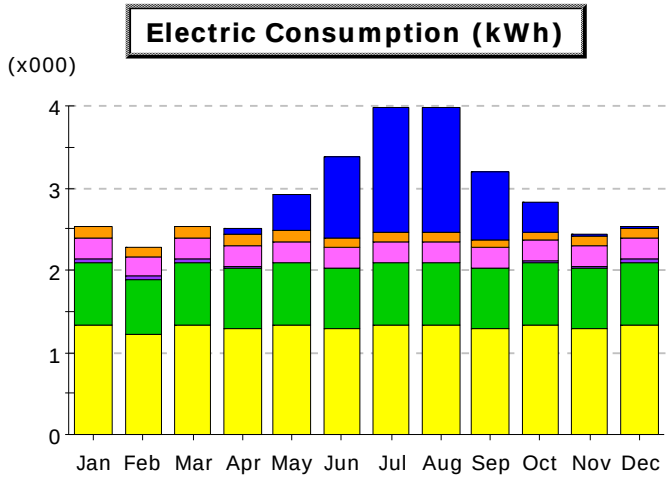
Area Lighting | Task Lighting | Misc. Equipment | Exterior Usage | Pumps & Aux. | Ventilation Fans | Water Heating | Ht Pump Supp. | Space Heating | Refrigeration

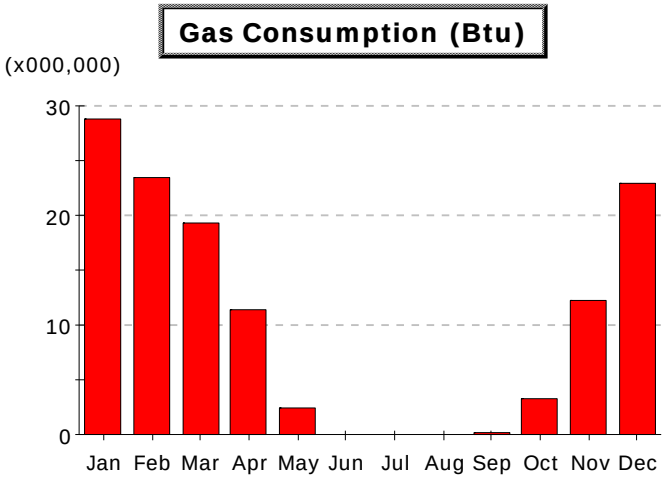
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.00	0.03	0.28	0.76	1.27	1.29	0.63	0.20	0.00	-	4.46
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.13	0.13	0.14	0.13	0.13	0.11	0.11	0.10	0.10	0.11	0.11	0.13	1.42
Vent. Fans	0.26	0.23	0.26	0.25	0.26	0.25	0.26	0.26	0.25	0.26	0.25	0.26	3.06
Pumps & Aux.	0.04	0.03	0.03	0.02	0.00	-	-	-	0.00	0.01	0.02	0.03	0.19
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	0.76	0.68	0.76	0.73	0.76	0.73	0.76	0.76	0.73	0.76	0.73	0.76	8.92
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.34	1.21	1.34	1.30	1.34	1.30	1.34	1.34	1.30	1.34	1.30	1.34	15.77
Total	2.53	2.29	2.53	2.46	2.76	3.15	3.74	3.75	3.01	2.68	2.42	2.52	33.82

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	26.47	21.32	16.71	8.83	0.84	-	-	-	-	1.32	9.71	20.52	105.72
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	26.47	21.32	16.71	8.83	0.84	-	-	-	-	1.32	9.71	20.52	105.72





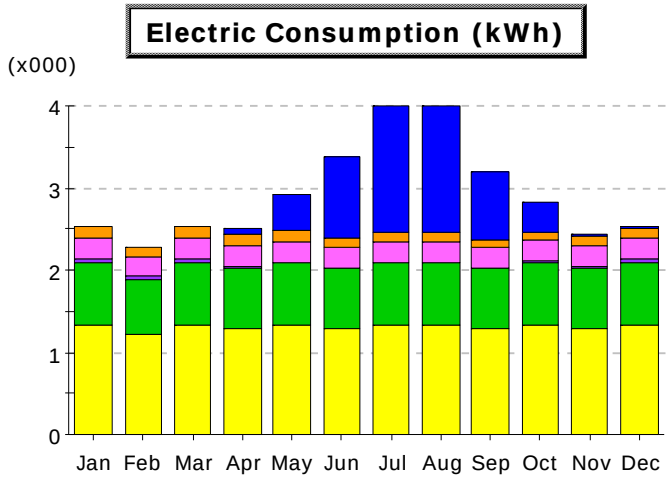
Area Lighting | Task Lighting | Misc. Equipment | Exterior Usage | Pumps & Aux. | Ventilation Fans | Water Heating | Ht Pump Supp. | Space Heating | Refrigeration

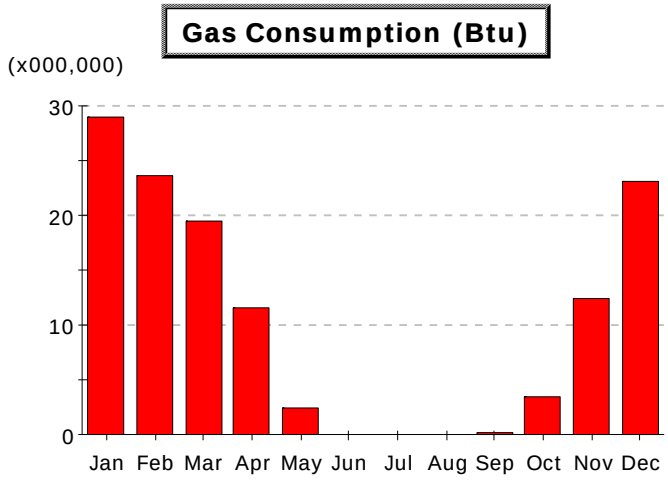
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.01	0.07	0.44	0.98	1.52	1.53	0.83	0.35	0.02	0.01	5.75
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.13	0.13	0.14	0.13	0.13	0.11	0.11	0.10	0.10	0.11	0.11	0.13	1.42
Vent. Fans	0.26	0.23	0.26	0.25	0.26	0.25	0.26	0.26	0.25	0.26	0.25	0.26	3.02
Pumps & Aux.	0.04	0.03	0.03	0.02	0.00	-	-	-	0.00	0.01	0.02	0.03	0.19
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	0.76	0.68	0.76	0.73	0.76	0.73	0.76	0.76	0.73	0.76	0.73	0.76	8.92
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.34	1.21	1.34	1.30	1.34	1.30	1.34	1.34	1.30	1.34	1.30	1.34	15.77
Total	2.52	2.28	2.54	2.50	2.92	3.37	3.98	3.99	3.20	2.82	2.43	2.52	35.07

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	28.71	23.47	19.33	11.40	2.37	0.02	-	-	0.12	3.35	12.23	22.94	123.94
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	28.71	23.47	19.33	11.40	2.37	0.02	-	-	0.12	3.35	12.23	22.94	123.94





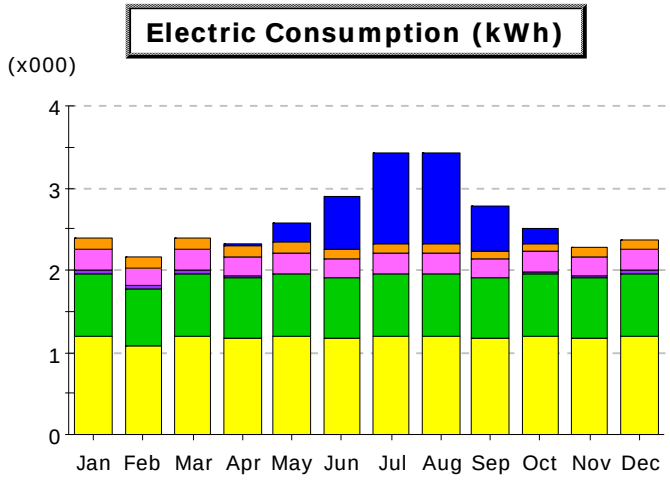
Area Lighting | Task Lighting | Misc. Equipment | Exterior Usage | Pumps & Aux. | Ventilation Fans | Water Heating | Ht Pump Supp. | Space Heating | Refrigeration

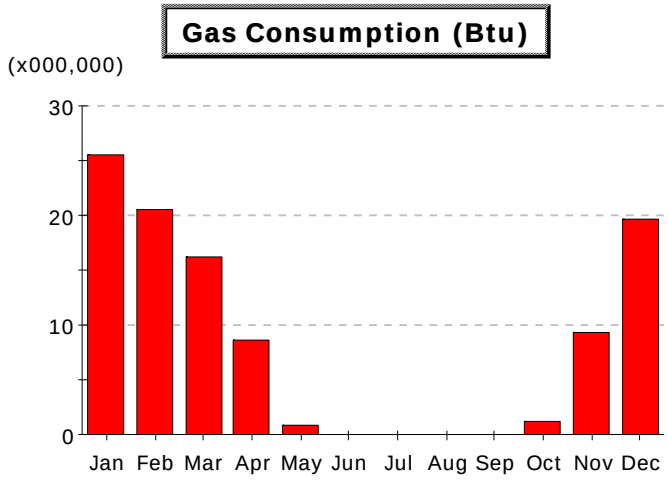
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.01	0.07	0.44	0.99	1.53	1.54	0.83	0.35	0.02	0.01	5.78
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.13	0.13	0.14	0.13	0.13	0.11	0.11	0.10	0.10	0.11	0.11	0.13	1.42
Vent. Fans	0.26	0.23	0.26	0.25	0.26	0.25	0.26	0.26	0.25	0.26	0.25	0.26	3.03
Pumps & Aux.	0.04	0.03	0.03	0.02	0.00	-	-	-	0.00	0.01	0.02	0.03	0.19
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	0.76	0.68	0.76	0.73	0.76	0.73	0.76	0.76	0.73	0.76	0.73	0.76	8.92
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.34	1.21	1.34	1.30	1.34	1.30	1.34	1.34	1.30	1.34	1.30	1.34	15.77
Total	2.53	2.28	2.54	2.50	2.92	3.38	3.99	4.00	3.20	2.82	2.43	2.52	35.11

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	28.99	23.67	19.48	11.50	2.40	0.02	-	-	0.13	3.44	12.39	23.17	125.21
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	28.99	23.67	19.48	11.50	2.40	0.02	-	-	0.13	3.44	12.39	23.17	125.21





Area Lighting | Task Lighting | Misc. Equipment | Exterior Usage | Pumps & Aux. | Ventilation Fans | Water Heating | Ht Pump Supp. | Space Heating | Refrigeration

Electric Consumption (kWh x000)

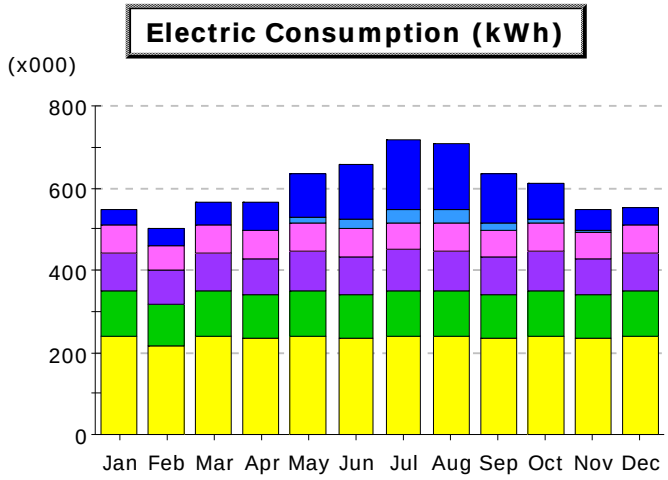
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.00	0.02	0.23	0.65	1.10	1.12	0.54	0.17	0.00	-	3.85
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.13	0.13	0.14	0.13	0.13	0.11	0.11	0.10	0.10	0.11	0.11	0.13	1.42
Vent. Fans	0.25	0.22	0.25	0.24	0.25	0.24	0.25	0.25	0.24	0.25	0.24	0.25	2.92
Pumps & Aux.	0.04	0.03	0.03	0.02	0.00	-	-	-	0.00	0.01	0.02	0.03	0.19
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	0.76	0.68	0.76	0.73	0.76	0.73	0.76	0.76	0.73	0.76	0.73	0.76	8.92
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	1.21	1.09	1.21	1.17	1.21	1.17	1.21	1.21	1.17	1.21	1.17	1.21	14.19
Total	2.38	2.16	2.38	2.32	2.57	2.90	3.42	3.43	2.78	2.50	2.28	2.37	31.50

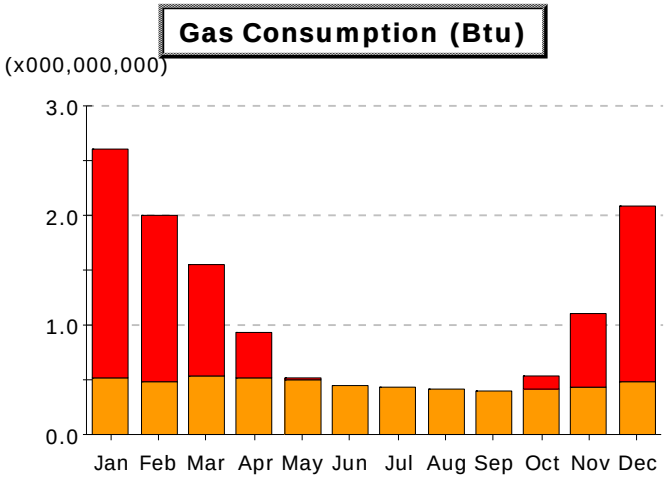
Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	25.44	20.54	16.16	8.61	0.85	-	-	-	-	1.25	9.34	19.72	101.91
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	25.44	20.54	16.16	8.61	0.85	-	-	-	-	1.25	9.34	19.72	101.91

APPENDIX D

EQUEST MODEL OUTPUT FOR HOTEL





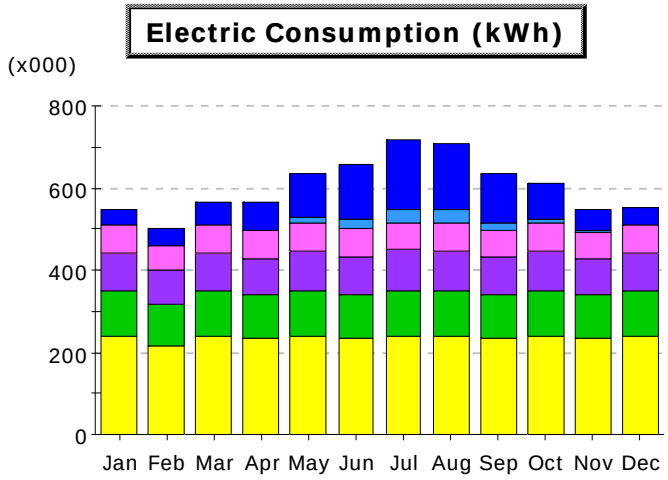
Area Lighting | Task Lighting | Misc. Equipment | Exterior Usage | Pumps & Aux. | Ventilation Fans | Water Heating | Ht Pump Supp. | Space Heating | Refrigeration

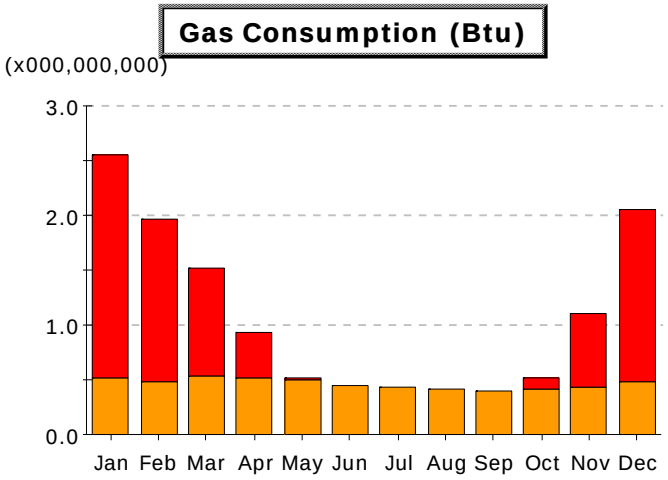
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	40.6	39.9	53.1	66.3	106.0	133.0	168.4	160.3	118.2	89.3	53.0	42.9	1,071.1
Heat Reject.	0.0	0.1	1.1	3.3	12.3	23.5	32.3	30.3	17.7	9.0	1.0	0.3	131.0
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	67.8	61.2	67.8	65.6	67.8	65.6	67.8	67.8	65.6	67.8	65.6	67.8	798.0
Pumps & Aux.	90.2	82.0	91.8	90.5	96.6	94.2	98.6	97.7	94.0	95.4	89.6	90.5	1,111.1
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	110.0	99.4	110.0	106.5	110.0	106.5	110.0	110.0	106.5	110.0	106.5	110.0	1,295.4
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	240.4	217.1	240.4	232.6	240.4	232.6	240.4	240.4	232.6	240.4	232.6	240.4	2,830.1
Total	548.9	499.7	564.2	564.7	633.1	655.4	717.5	706.5	634.6	611.9	548.3	551.8	7,236.6

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	2.09	1.52	1.00	0.42	0.02	-	-	-	-	0.11	0.67	1.60	7.44
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.52	0.49	0.54	0.52	0.50	0.44	0.43	0.41	0.39	0.42	0.44	0.49	5.58
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.61	2.01	1.54	0.94	0.52	0.44	0.43	0.41	0.39	0.53	1.11	2.09	13.02





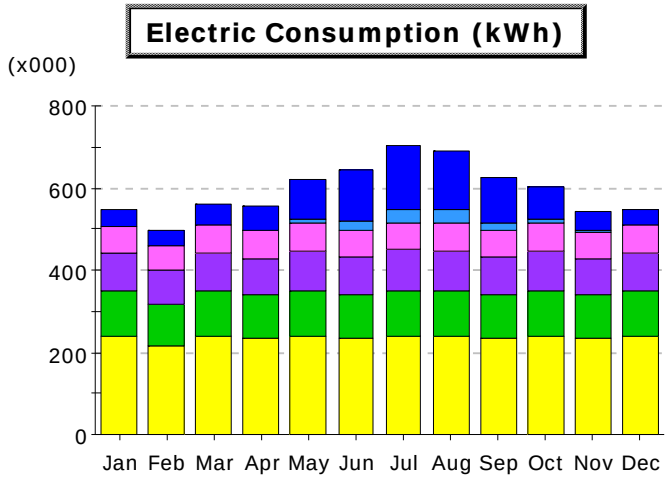
Area Lighting
Task Lighting
Misc. Equipment
Exterior Usage
Pumps & Aux.
Ventilation Fans
Water Heating
Ht Pump Supp.
Space Heating
Refrigeration

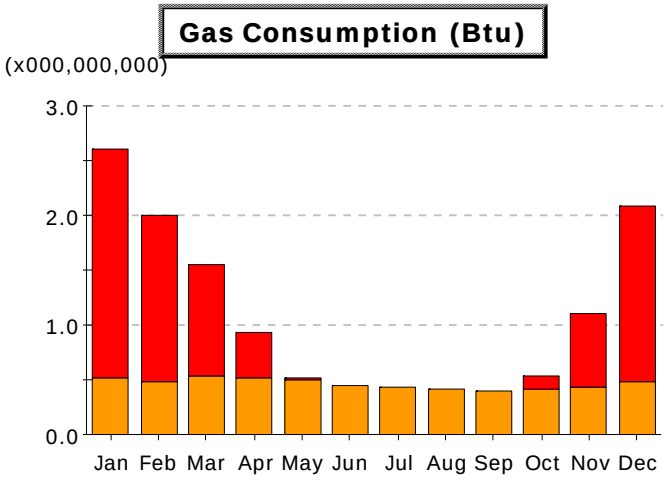
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	40.6	39.9	53.1	66.3	106.0	133.0	168.4	160.3	118.2	89.3	53.0	42.9	1,071.1
Heat Reject.	0.0	0.1	1.1	3.3	12.3	23.5	32.3	30.3	17.7	9.0	1.0	0.3	131.0
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	67.8	61.2	67.8	65.6	67.8	65.6	67.8	67.8	65.6	67.8	65.6	67.8	798.0
Pumps & Aux.	90.2	82.0	91.8	90.5	96.6	94.2	98.6	97.7	94.0	95.4	89.6	90.5	1,111.1
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	110.0	99.4	110.0	106.5	110.0	106.5	110.0	110.0	106.5	110.0	106.5	110.0	1,295.4
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	240.4	217.1	240.4	232.6	240.4	232.6	240.4	240.4	232.6	240.4	232.6	240.4	2,830.1
Total	548.9	499.7	564.2	564.7	633.1	655.4	717.5	706.5	634.6	611.9	548.3	551.8	7,236.6

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	2.04	1.48	0.98	0.41	0.02	-	-	-	-	0.10	0.66	1.56	7.26
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.52	0.49	0.54	0.52	0.50	0.44	0.43	0.41	0.39	0.42	0.44	0.49	5.58
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.56	1.97	1.52	0.93	0.52	0.44	0.43	0.41	0.39	0.52	1.10	2.05	12.84





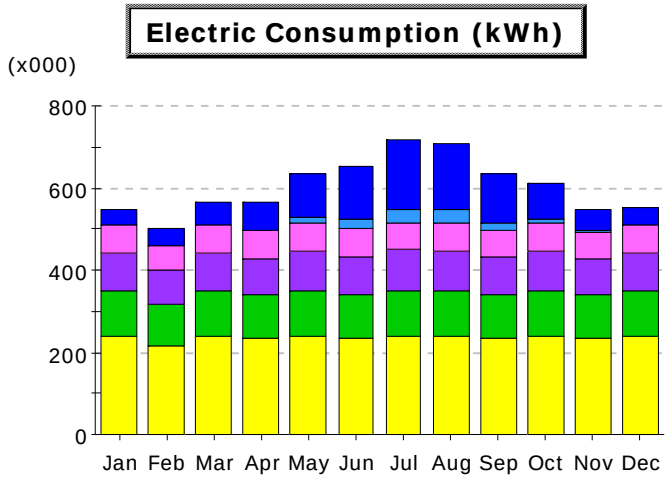
Area Lighting
Task Lighting
Misc. Equipment
Exterior Usage
Pumps & Aux.
Ventilation Fans
Water Heating
Ht Pump Supp.
Space Heating
Refrigeration

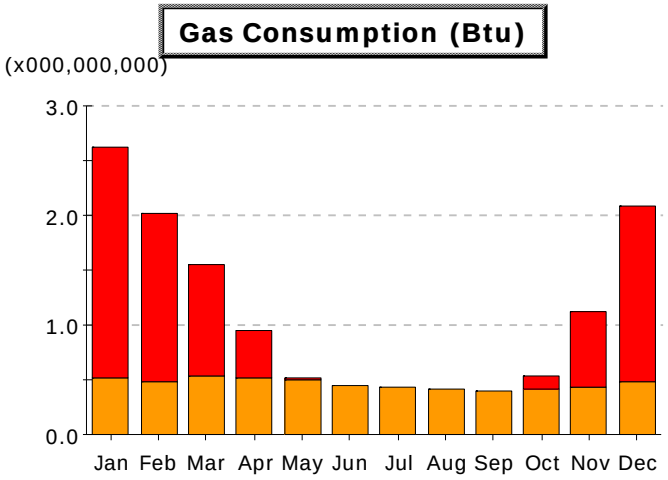
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	36.9	36.3	48.3	60.2	96.4	120.9	153.1	145.7	107.5	81.2	48.2	39.0	973.8
Heat Reject.	0.0	0.1	1.0	3.2	12.1	23.2	31.9	29.9	17.4	8.9	1.0	0.3	129.2
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	67.8	61.2	67.8	65.6	67.8	65.6	67.8	67.8	65.6	67.8	65.6	67.8	798.0
Pumps & Aux.	89.7	81.6	91.4	90.0	96.1	93.7	98.1	97.2	93.5	94.9	89.1	90.0	1,105.3
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	110.0	99.4	110.0	106.5	110.0	106.5	110.0	110.0	106.5	110.0	106.5	110.0	1,295.4
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	240.4	217.1	240.4	232.6	240.4	232.6	240.4	240.4	232.6	240.4	232.6	240.4	2,830.1
Total	544.8	495.7	558.9	558.2	622.8	642.5	701.3	691.0	623.1	603.1	543.0	547.5	7,131.8

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	2.09	1.52	1.00	0.42	0.02	-	-	-	-	0.11	0.67	1.60	7.44
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.52	0.49	0.54	0.52	0.50	0.44	0.43	0.41	0.39	0.42	0.44	0.49	5.58
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.61	2.01	1.54	0.94	0.52	0.44	0.43	0.41	0.39	0.53	1.11	2.09	13.02





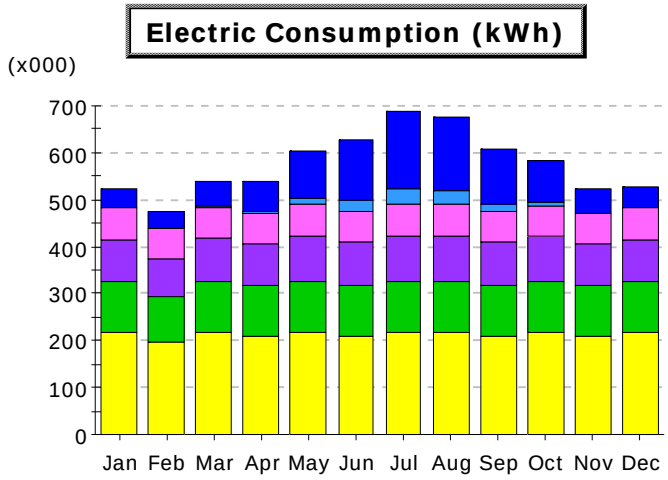
Area Lighting | Task Lighting | Misc. Equipment | Exterior Usage | Pumps & Aux. | Ventilation Fans | Water Heating | Ht Pump Supp. | Space Heating | Refrigeration

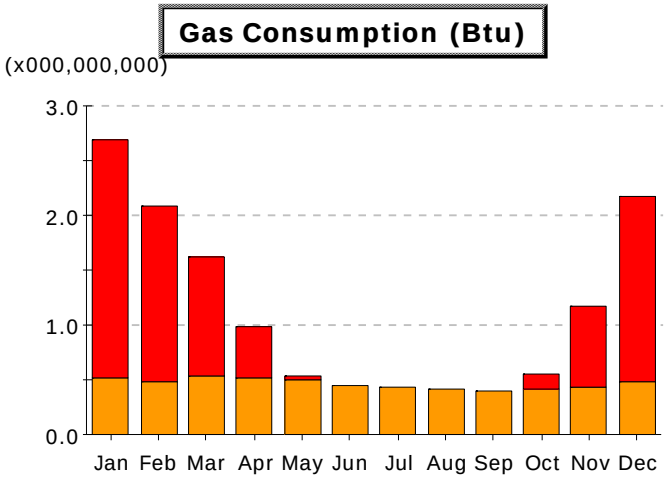
Electric Consumption (kWh x000)

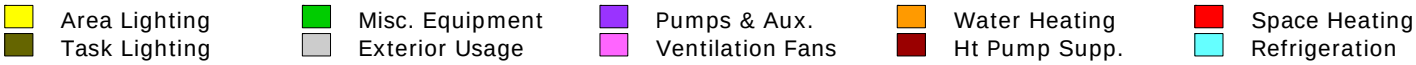
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	40.6	39.9	53.0	66.0	105.7	132.5	167.9	159.8	117.9	89.1	53.0	42.9	1,068.2
Heat Reject.	0.0	0.1	1.1	3.3	12.3	23.4	32.3	30.3	17.6	9.0	1.0	0.3	130.5
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	67.8	61.2	67.8	65.6	67.8	65.6	67.8	67.8	65.6	67.8	65.6	67.8	798.0
Pumps & Aux.	90.2	82.0	91.8	90.5	96.6	94.2	98.5	97.7	94.0	95.4	89.6	90.5	1,111.0
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	110.0	99.4	110.0	106.5	110.0	106.5	110.0	110.0	106.5	110.0	106.5	110.0	1,295.4
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	240.4	217.1	240.4	232.6	240.4	232.6	240.4	240.4	232.6	240.4	232.6	240.4	2,830.1
Total	548.9	499.6	564.1	564.4	632.7	654.8	716.8	705.9	634.2	611.6	548.2	551.8	7,233.1

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	2.09	1.52	1.01	0.43	0.03	-	-	-	-	0.11	0.68	1.61	7.46
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.52	0.49	0.54	0.52	0.50	0.44	0.43	0.41	0.39	0.42	0.44	0.49	5.58
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.61	2.01	1.55	0.94	0.52	0.44	0.43	0.41	0.39	0.53	1.12	2.09	13.04





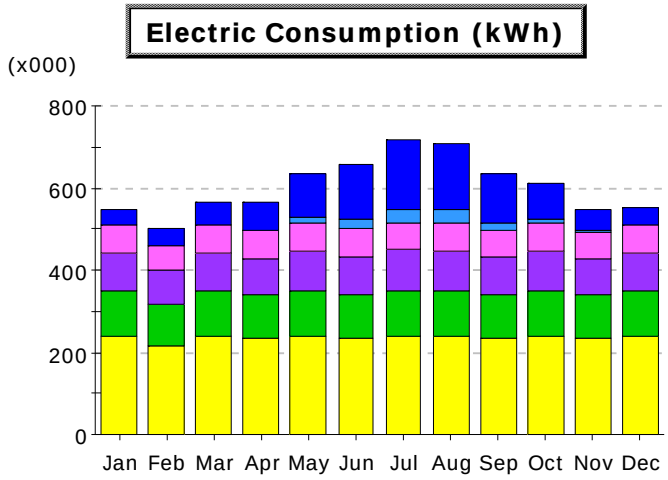


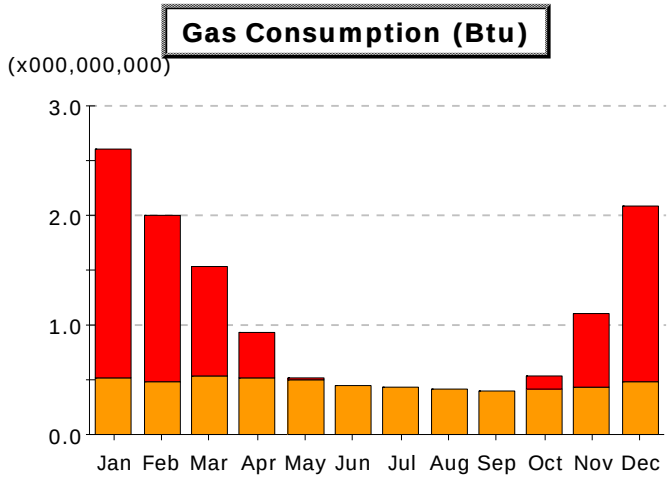
Electric Consumption (kWh x000)

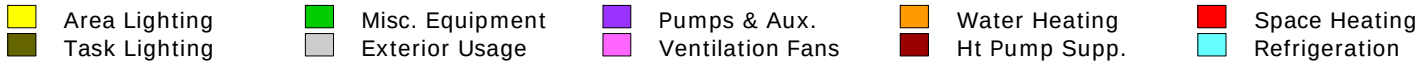
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	39.9	39.1	51.8	64.2	102.8	129.9	164.7	156.7	115.3	86.2	51.1	42.0	1,043.5
Heat Reject.	0.0	0.1	1.0	3.1	11.8	22.9	31.9	29.8	17.3	8.6	0.9	0.3	127.7
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	67.3	60.8	67.3	65.1	67.3	65.1	67.3	67.3	65.1	67.3	65.1	67.3	792.0
Pumps & Aux.	89.5	81.3	91.1	89.7	95.8	93.5	97.8	97.0	93.3	94.5	88.7	89.8	1,101.9
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	110.0	99.4	110.0	106.5	110.0	106.5	110.0	110.0	106.5	110.0	106.5	110.0	1,295.4
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	216.3	195.4	216.3	209.4	216.3	209.4	216.3	216.3	209.4	216.3	209.4	216.3	2,547.1
Total	523.0	476.0	537.5	537.9	604.1	627.2	688.0	677.1	606.8	582.9	521.5	525.6	6,907.6

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	2.18	1.59	1.08	0.47	0.03	-	-	-	0.00	0.13	0.74	1.69	7.90
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.52	0.49	0.54	0.52	0.50	0.44	0.43	0.41	0.39	0.42	0.44	0.49	5.58
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.70	2.08	1.62	0.98	0.53	0.44	0.43	0.41	0.39	0.55	1.17	2.18	13.48





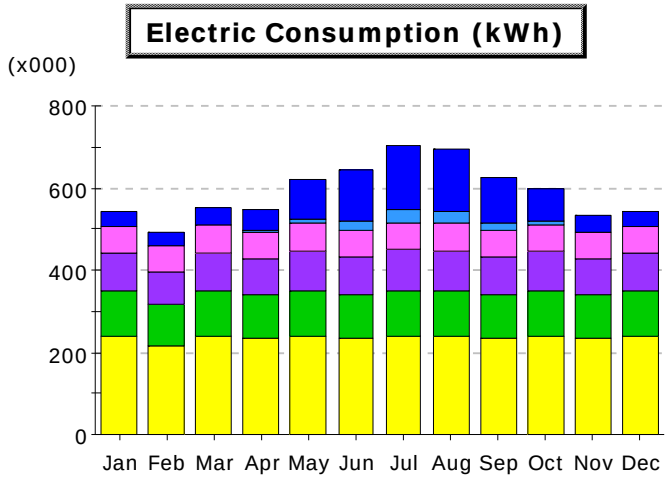


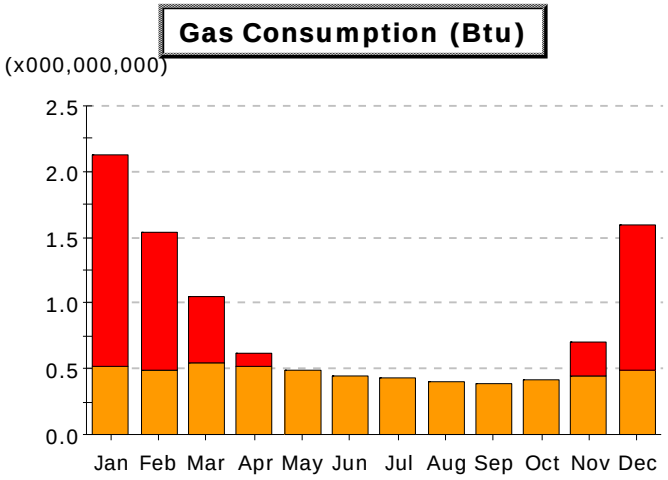
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	40.6	39.9	53.2	66.3	106.0	132.9	168.2	160.2	118.2	89.3	53.1	42.9	1,070.8
Heat Reject.	0.0	0.1	1.1	3.3	12.3	23.5	32.3	30.3	17.7	9.0	1.0	0.3	130.9
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	67.8	61.2	67.8	65.6	67.8	65.6	67.8	67.8	65.6	67.8	65.6	67.8	798.0
Pumps & Aux.	90.2	82.0	91.9	90.5	96.6	94.2	98.5	97.7	94.0	95.4	89.6	90.5	1,111.1
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	110.0	99.4	110.0	106.5	110.0	106.5	110.0	110.0	106.5	110.0	106.5	110.0	1,295.4
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	240.4	217.1	240.4	232.6	240.4	232.6	240.4	240.4	232.6	240.4	232.6	240.4	2,830.1
Total	548.9	499.7	564.2	564.7	633.1	655.3	717.2	706.4	634.5	611.9	548.3	551.9	7,236.2

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	2.08	1.51	1.00	0.42	0.02	-	-	-	-	0.10	0.67	1.60	7.41
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.52	0.49	0.54	0.52	0.50	0.44	0.43	0.41	0.39	0.42	0.44	0.49	5.58
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.60	2.00	1.54	0.94	0.52	0.44	0.43	0.41	0.39	0.53	1.11	2.09	12.99





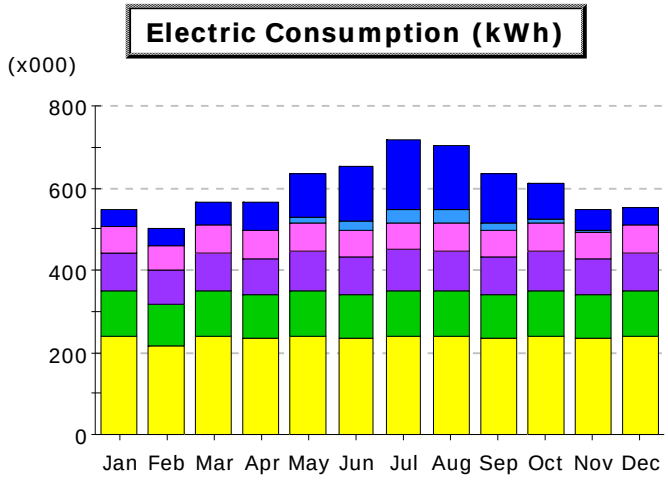
Area Lighting
Task Lighting
Misc. Equipment
Exterior Usage
Pumps & Aux.
Ventilation Fans
Water Heating
Ht Pump Supp.
Space Heating
Refrigeration

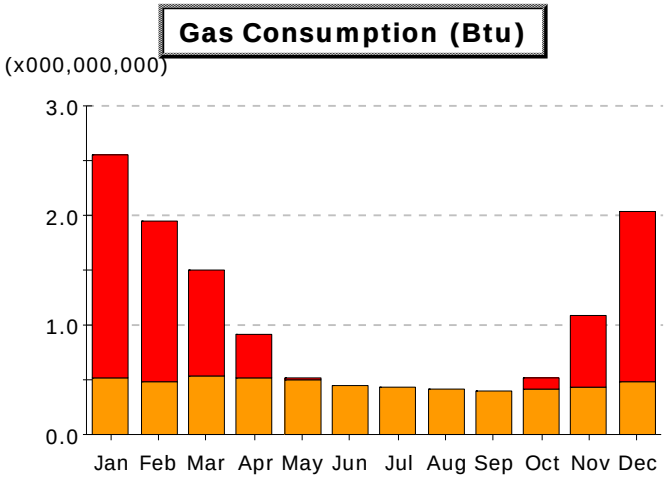
Electric Consumption (kWh x000)

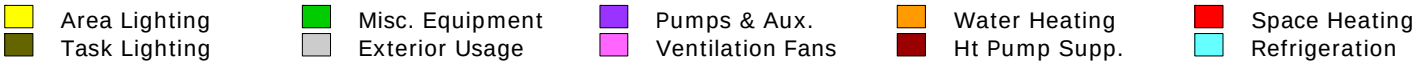
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	33.8	31.7	41.1	52.9	96.1	124.1	157.0	149.5	110.0	77.8	40.3	35.0	949.4
Heat Reject.	-	0.0	0.4	2.0	10.8	21.5	30.8	28.7	16.2	7.7	0.3	0.1	118.6
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	67.8	61.2	67.8	65.6	67.8	65.6	67.8	67.8	65.6	67.8	65.6	67.8	798.0
Pumps & Aux.	88.8	80.5	90.1	88.9	95.9	94.1	98.1	97.4	93.8	94.2	87.4	89.0	1,098.3
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	110.0	99.4	110.0	106.5	110.0	106.5	110.0	110.0	106.5	110.0	106.5	110.0	1,295.4
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	240.4	217.1	240.4	232.6	240.4	232.6	240.4	240.4	232.6	240.4	232.6	240.4	2,830.1
Total	540.8	489.9	549.7	548.4	621.0	644.4	704.1	693.8	624.7	597.8	532.8	542.3	7,089.8

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.61	1.05	0.50	0.10	-	-	-	-	-	-	0.26	1.11	4.63
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.52	0.49	0.54	0.51	0.49	0.44	0.43	0.41	0.39	0.42	0.44	0.49	5.57
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.13	1.54	1.04	0.62	0.49	0.44	0.43	0.41	0.39	0.42	0.70	1.60	10.20





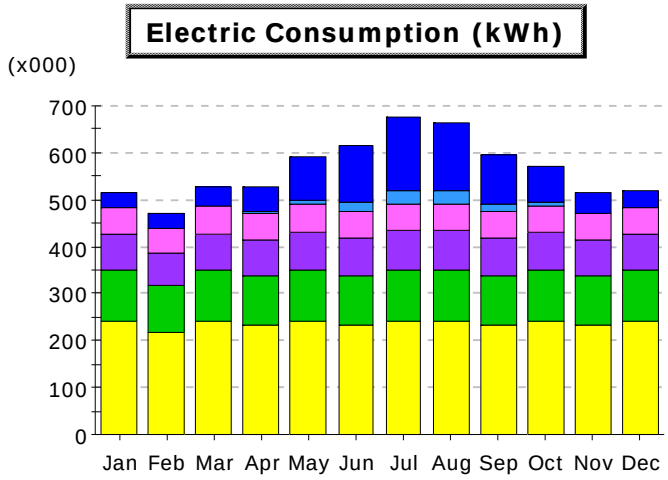


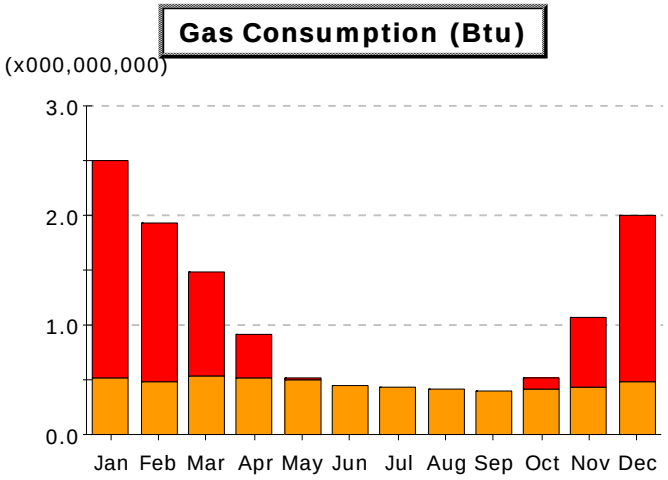
Electric Consumption (kWh x000)

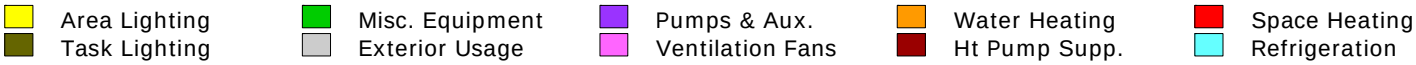
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	40.6	40.0	53.3	66.5	106.1	132.6	167.7	159.6	118.0	89.6	53.4	43.0	1,070.5
Heat Reject.	0.0	0.1	1.1	3.3	12.3	23.4	32.2	30.2	17.6	9.0	1.0	0.3	130.7
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	67.5	61.0	67.5	65.4	67.5	65.4	67.5	67.5	65.4	67.5	65.4	67.5	795.2
Pumps & Aux.	89.9	81.8	91.6	90.3	96.4	93.9	98.2	97.4	93.7	95.1	89.4	90.2	1,108.0
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	110.0	99.4	110.0	106.5	110.0	106.5	110.0	110.0	106.5	110.0	106.5	110.0	1,295.4
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	240.4	217.1	240.4	232.6	240.4	232.6	240.4	240.4	232.6	240.4	232.6	240.4	2,830.1
Total	548.5	499.4	563.9	564.5	632.7	654.4	716.1	705.1	633.8	611.7	548.2	551.5	7,229.8

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	2.03	1.47	0.97	0.40	0.02	-	-	-	-	0.10	0.64	1.55	7.17
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.52	0.49	0.54	0.52	0.50	0.44	0.43	0.41	0.39	0.42	0.44	0.49	5.58
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.55	1.96	1.51	0.92	0.52	0.44	0.43	0.41	0.39	0.52	1.08	2.04	12.75





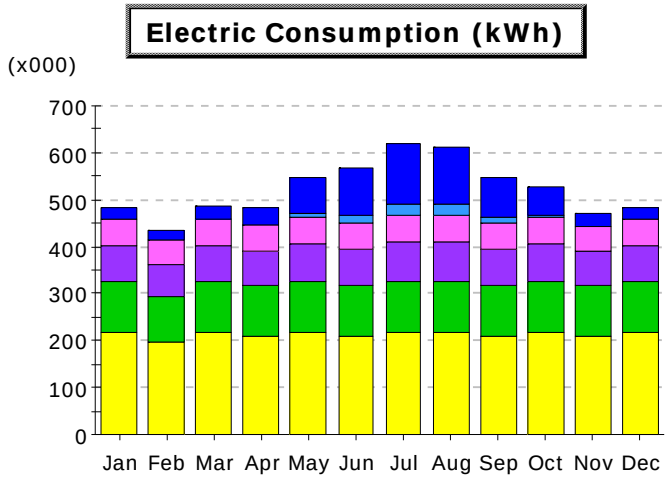


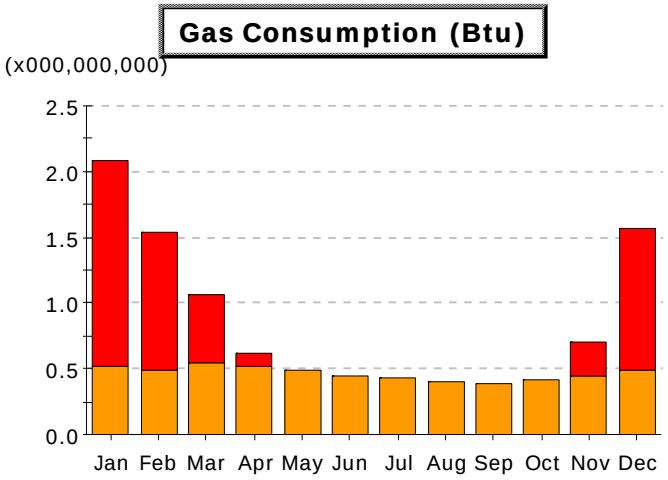
Electric Consumption (kWh x000)

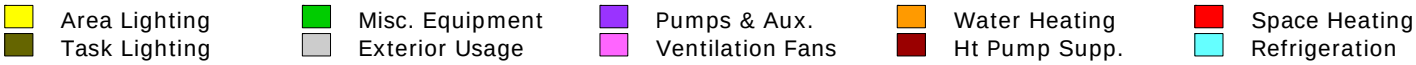
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	32.3	31.6	42.9	55.3	92.1	118.8	153.9	146.3	104.1	76.7	43.9	34.7	932.5
Heat Reject.	0.0	0.0	0.8	2.7	11.0	20.8	29.6	27.3	15.7	7.7	0.8	0.2	116.7
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	57.5	51.9	57.5	55.6	57.5	55.6	57.5	57.5	55.6	57.5	55.6	57.5	676.6
Pumps & Aux.	75.6	68.7	77.1	76.1	81.4	79.5	83.5	82.7	79.1	80.3	75.3	76.0	935.2
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	110.0	99.4	110.0	106.5	110.0	106.5	110.0	110.0	106.5	110.0	106.5	110.0	1,295.4
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	240.4	217.1	240.4	232.6	240.4	232.6	240.4	240.4	232.6	240.4	232.6	240.4	2,830.1
Total	515.7	468.7	528.6	528.8	592.3	613.8	674.8	664.2	593.6	572.5	514.7	518.8	6,786.6

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.99	1.45	0.95	0.39	0.02	-	-	-	-	0.09	0.62	1.51	7.02
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.52	0.49	0.54	0.52	0.50	0.44	0.43	0.41	0.39	0.42	0.44	0.49	5.58
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.51	1.93	1.49	0.91	0.52	0.44	0.43	0.41	0.39	0.51	1.06	2.00	12.60







Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	24.1	22.3	28.0	37.1	72.7	97.4	126.1	119.8	85.0	57.8	28.4	25.0	723.4
Heat Reject.	-	-	0.2	1.4	8.9	18.5	26.5	24.7	13.6	6.0	0.2	0.0	100.1
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	56.7	51.2	56.7	54.9	56.7	54.9	56.7	56.7	54.9	56.7	54.9	56.7	667.9
Pumps & Aux.	74.4	67.4	75.2	74.4	80.7	79.3	82.9	82.3	79.0	79.2	73.2	74.7	922.5
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	110.0	99.4	110.0	106.5	110.0	106.5	110.0	110.0	106.5	110.0	106.5	110.0	1,295.4
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	216.3	195.4	216.3	209.4	216.3	209.4	216.3	216.3	209.4	216.3	209.4	216.3	2,547.1
Total	481.6	435.7	486.5	483.5	545.3	565.9	618.6	609.8	548.2	526.1	472.5	482.8	6,256.4

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.56	1.04	0.52	0.11	-	-	-	-	-	-	0.26	1.07	4.57
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.52	0.49	0.54	0.51	0.49	0.44	0.43	0.41	0.39	0.42	0.44	0.49	5.57
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.08	1.53	1.06	0.62	0.49	0.44	0.43	0.41	0.39	0.42	0.70	1.56	10.14

APPENDIX E

TRANSPORTATION WORKSHEET FOR VMT AND CO_2 EMISSIONS

Table E-1

Vehicle Miles Traveled (VMT) and CO_2 Emissions in the Traffic Study Area
Stockbridge-Munsee Casino - Thompson, New York

		Average Daily Traffic (ADT) (vehicles/day)			Vehicle Miles Traveled (VMT) (miles/day)		
Link I.D.*	Link Length (miles)	2018 No-Build	2018 Build	2018 Build w/Mitigation	2018 No-Build	2018 Build	2018 Build w/Mitigation
1	0.64	6,881	11,088	10,296	4,404	7,096	6,589
2	0.59	6,899	30,647	24,839	4,070	18,082	14,655
3	0.14	3,734	15,975	13,038	523	2,237	1,825
4	0.23	1,213	1,421	1,421	279	327	327
5	0.18	2,056	13,147	13,114	370	2,366	2,361
6	0.41	988	1,246	1,213	405	511	497
7	0.09	1,421	4,071	3,675	128	366	331
8	0.20	2,201	11,246	8,771	440	2,249	1,754
9	0.18	2,860	11,627	9,152	515	2,093	1,647
10	0.14	1,335	4,088	3,692	187	572	517
11	0.41	56,957	61,753	60,961	23,352	25,319	24,994
12	0.50	59,263	75,739	70,789	29,632	37,870	35,395
13	1.41	0	41,032	34,432	0	57,855	48,549
		VMT (miles/day):			64,305	156,943	139,441
		Total Daily CO_2 Emissions (kg/day)			35,393	86,381	76,748
		Total Daily CO_2 Emissions (tons/year)			14,228	34,724	30,852

*** Link descriptions by I.D. number are as foillows:**

1 - County Highway 161 North of the Project Access Road
2 - County Highway 161 South of the Project Access Road
3 - County Highway 161 South of the Overpass
4 - Old Route 17 West of the Offramp
5 - Old Route 17 West of County Highway 161
6 - Old Route 17 East of County highway 161
7 - Interchange 107 Eastbound Offramp
8 - Interchange 107 Eastbound Onramp
9 - Interchange 101 Westbound Offramp
10 - Interchange 107 Westbound Onramp
11 - State Route 17 West of Interchange 107
12 - State Route 17 East of interchange 107
13 - Project Access Road

APPENDIX F

ELECTRICAL USE CALCULATIONS FOR EXTERNAL LOADS

TABLE F-1
ELECTRICAL USE CALCULATIONS FOR EXTERNAL LOADS (MWhr/year)
Refrigeration Equipment and Outdoor Lighting for Parking, Roads and Signs

	Refrigeration Equipment (MWhr/yr)	Outdoor Lighting (MWhr/yr)	Total External Load (MWhr/yr)
Base Case	1,495.0	6,899.7	8,394.7
Refrigeration Systems Energy Efficient Design	1,345.5	6,899.7	8,245.2
Metal Halide Parking Lot Lighting	1,495.0	5,279.9	6,774.9
Both Mitigation Measures	1,345.5	5,279.9	6,625.4

Refrigeration equipment electrical use is 49% Warehouse, 42% Main Facility, 1% Convenience Store, and 6% Hotel

APPENDIX G

SOLID WASTE WORKSHEET FOR CO_2 EMISSIONS

GHG Emissions Analysis — Summary Report

(Version 10, 11/09)

Analysis of GHG Emissions from Waste Management for Stockbridge-Munsee Casino

Prepared by Tech Environmental, Inc.

Reporting Period for this Analysis is from 1/1/18 to 12/31/18

GHG Emissions from Baseline Waste Management Scenario (MTCO2E):	4,766
GHG Emissions from Alternative Waste Management Scenario (MTCO2E):	1,424
Total Change in GHG Emissions: (MTCO2E):	**-3,342**

	Baseline Scenario					Alternative Scenario						
Material	**Tons Recycled**	**Tons Landfilled**	**Tons Combusted**	**Tons Composted**	**Total MTCO2E**	**Tons Source Reduced**	**Tons Recycled**	**Tons Landfilled**	**Tons Combusted**	**Tons Composted**	**Total MTCO2E**	**Change (Alt - Base) MTCO2E**
Mixed Paper (general)	0	718	0	N/A	970	N/A	203	515	0	N/A	-16	**-986**
Mixed Metals	0	251	0	N/A	10	N/A	0	251	0	N/A	10	**0**
Mixed Plastics	0	572	0	N/A	22	N/A	0	572	0	N/A	22	**0**
Mixed Recyclables	0	608	0	N/A	609	N/A	608	0	0	N/A	-1,747	**-2,356**
Mixed Organics	N/A	1,148	0	0	806	N/A	N/A	1,148	0	0	806	**0**
Mixed MSW	N/A	759	0	N/A	2,349	N/A	N/A	759	0	N/A	2,349	**0**

Note: A negative value indicates an emission reduction; a positive value indicates an emission increase.
a) For an explanation of the methodology used to develop emission factors, see EPA report: Greenhouse Gas Emissions from Management of Selected Materials in Municipal Solid Waste (EPA530-R-98-013) — available on the Internet at http://www.epa.gov/climatechange/wycd/waste/reports.html Please note that some of the emission factors used to generate these results do not match those presented in the report due to recent additions and/or revisions.
b) Emissions estimates provided by this model are intended to support voluntary GHG measurement and reporting initiatives.
c) Total emissions estimates provided by this model may not sum due to independent rounding.

Appendix U

Growth Management

TETRA TECH

GROWTH MANAGEMENT

INTRODUCTION

As discussed in Section 5.10.2 of the FEIS, the proposed Stockbridge-Munsee casino is expected to be a significant employment generator, with approximately 4,907 new jobs being created at the facility. Approximately 70 percent of the new jobs are expected to be filled by people already living within 100-miles of the casino, including people now living in the nearby municipalities and commuters from surrounding areas. The remaining 30 percent of the staff would be filled by individuals recruited from beyond the 100-mile radius and would relocate and commute to their casino jobs.

In addition those directly employed by the casino, an indirect effect of the casino would be to create non-casino jobs in the local economy as a consequence of increased economic activity. As with casino jobs, most of these indirectly created jobs would be filled by people already living in the region, but others will be filled by people migrating to the area to pursue new job opportunities. In total, it is expected that approximately 1,381 of these new workers would chose to locate within Sullivan County in order to minimize their commuting distance. It is reasonable to expect that many of these individuals would wish to relocate to the Towns of Thompson and Fallsburg, and the Village of Monticello due to their proximity to the facility.

The individuals moving into the area are expected to include both renters and home-buyers, and it is expected that the housing demand generated by the project would be met by a combination of the existing housing stock and new housing development in the study area. It is expected, however, that a significant percentage of this new housing demand would be absorbed by existing housing stock. In addition, there are approximately 5,971 housing units proposed (e.g., plans and permit applications filed with local boards) for development in Sullivan County at the present time, more than enough to accommodate all direct and indirect workers expected to move into Sullivan County. Further, it is not expected that the housing demands generated by the casino project would induce new housing development beyond that which is already proposed. It may, in fact, accelerate the construction of approved but not yet constructed units due to creating the market demand needed to stimulate otherwise stalled construction activities.

The housing units that are already proposed would be governed by the existing land use codes, such as local zoning laws. These new developments would, therefore, reflect the growth policies and principles embodied in the existing comprehensive plans and zoning ordinances, and would, presumably be consistent with community goals.

In regard to potential additional development beyond that which is already proposed to occur, most study area communities have land use policies in place to guide this future growth. A review of the land use plans and policies in the towns most likely to sustain casino-related growth pressures – Thompson and Fallsburg, and the Village of Monticello – indicates that these municipalities are equipped to manage growth in a sound, and a generally environmentally-conscious manner, and to discourage growth patterns and suburban sprawl-type development. These municipalities have adopted zoning ordinances and comprehensive plans that provide tools to preserve their rural character. The Town of Thompson and the Village of Monticello prepared a joint comprehensive plan in 1999, and the Town of Fallsburg adopted a comprehensive plan in 2006. As expressed in these plans, paramount to these communities is preserving natural resources, the rural character, and the scenic quality that defines this region.

A review of the local land use policies and zoning regulations in Thompson and Fallsburg, and the Village of Monticello – the communities nearest to the casino project – is provided below. These communities have clearly thought through their goals, and have pursued a deliberate and

considered path toward establishing policies and land use regulations aimed at reflecting community values. As discussed, the Town of Thompson and the Village of Monticello have recognized their interdependence, and have jointly prepared a comprehensive plan. While this plan was prepared in 1999, it reflects current planning practices and principles. The Town of Fallsburgh comprehensive plan was completed in 2006, and similarly reflects current planning practices and principles. These policies and growth management tools are expected to guide growth, as it may occur, and to uphold those community values embodied in these plans.

A. TOWN OF THOMPSON / VILLAGE OF MONTICELLO

JOINT COMPREHENSIVE PLAN, 1999

The Town of Thompson encompasses the Village of Monticello, making these two communities inherently interconnected. As such, the Town of Thompson and the Village of Monticello prepared a joint comprehensive plan in 1999 to coordinate planning efforts and to establish consistent visions and goals for the area. The Joint Comprehensive Plan recognizes the significance of the tourism industry on the local economy and the importance of encouraging economic growth while preserving sensitive environmental resources. Much of the area's tourism appeal relies on the preservation of the scenic and bucolic nature of Sullivan County.

The Town of Thompson/Village of Monticello Joint Comprehensive Plan notes the decline of the tourism industry in Sullivan County over recent decades. Rejuvenation of this industry is seen as an important means to revitalize the Village of Monticello and the Town of Thompson. As stated in the Plan:

> "Providing for land uses such as the Concord Resort Hotel is necessary to preserve major employment centers and preserve a source of attraction to the Town and region. The number of major resorts has dwindled and those which remain should be protected from incompatible adjacent land uses and permitted to expand and develop, provided those development plans maximize the protection and enjoyment of the Town's natural resources on which the bulk of the tourism industry depends."

Even though these communities seek to foster economic development and increase tourism, they stress the importance of controlled growth and carefully planned development. Without guiding development, economic growth could result in undesirable development patterns and diminish the scenic and rural value of the area on which the tourism industry depends.

The Joint Comprehensive Plan encourages concentrating future growth in existing hamlet centers (e.g., Rock Hill, Emerald Green, etc.) and other areas where existing retail, office, or industrial development are currently concentrated (e.g., Kiamesha/NYS Route 42 shopping area, the Raceway, and Apollo Plaza). The Plan emphasizes that outlying areas and areas between hamlet centers should remain minimally developed, maintaining their agricultural, recreational, and rural character. A primary objective of these policies is to prevent sprawl and to concentrate development in areas equipped with municipal water and sewer services, to lessen the burden on the environment.

The Joint Comprehensive Plan outlines a clear vision for future growth in Thompson and Monticello and recommended a number of modifications to local zoning codes that would help realize these goals. One of the recommendations of the Plan was to implement provisions for conservation or cluster developments. These types of developments minimize land disturbance by clustering homes on smaller lots, thereby preserving open space. In addition, the extent of infrastructure is reduced, including roadways, water and sewer distribution systems, etc.

ZONING

The primary tool for enforcing the visions and goals outlined in the comprehensive plan is the local zoning ordinance. The Joint Comprehensive Plan recognized that existing zoning at the time the Plan was adopted was not favorable for guiding future growth in line with these objectives and cited weak zoning regulations and poor zoning enforcement as contributors to unorganized and disjointed previous development. Zoning standards in the Town of Thompson favored low- and medium-density single-family residential development in most areas, which promotes sprawling suburban-type development. Zoning regulations in the Village of Monticello did not support mixed-use or higher-density multi-family development in downtown areas, which is needed to enhance the vibrancy of the downtown. Commercial zoning districts within each municipality encouraged strip development. As a result, commercial facilities became highway-oriented and were established along major highways outside of the downtown area such as along Route 17 (now Interstate 86, or I-86), Old Route 17, Route 42, and Route 17B.

The Joint Comprehensive Plan and local zoning ordinances are structured to prevent disorganized and incompatible land uses. These documents are adopted land use policies that direct development in an orderly, environmentally-sound manner. They are intended to preserve the rural character of Thompson and Monticello, while promoting economic development.

TOWN OF THOMPSON ZONING

The Town of Thompson zoning code employs a number of tools that enforce orderly and environmentally-conscious development. In line with recommendations of the Joint Comprehensive Plan, the zoning ode includes provisions for cluster subdivisions and planned unit developments (PUD), which promote open space conservation.

Much of the Town of Thompson is zoned for low-density residential uses. In order to prevent sprawl, the zoning code allows cluster subdivisions and PUDs. Cluster subdivisions involve reducing residential lot sizes and grouping homes together to maximize preservation of open space and minimize disturbance required for infrastructure. As stated in the Code:

> "The purpose of this provision is to provide flexibility in the design and development of land in such a way as to promote the most appropriate use of land, to facilitate the adequate and economical provision of streets and utilities, and to preserve the natural and scenic qualities of open space."

Cluster subdivisions are permitted within the Suburban Residential (SR) district and the Rural Residential (RR-2) district.

A PUD is similar to cluster zoning in that it promotes development that preserves open space. However, commercial uses are also permitted in PUDs that primarily serve residents of the PUD. Minimum site area for a PUD is 30 acres of which at least 35 percent of the land area must be preserved as open space. PUDs are permitted in the SR district and Rural Residential (RR-1) district.

To regulate nonresidential uses, the zoning code establishes a number of commercial and business districts. These districts are intended to restrict nonresidential development to appropriate areas, such as in hamlet centers or in close proximity to major highways. Nonresidential districts in the Town include the Highway Commercial (HC-1 and HC-2) districts, the Commercial Industrial (CI) district, the Extractive Industry (E) district, the Planned Resort Development (PRD) district, and the Planned Business Park (PBP) district.

The HC-1 and HC-2 districts are primarily designated in or near hamlet centers. Permitted nonresidential uses are subject to site plan review and special permits, but include lodging establishments, business offices, retail uses, eateries, theaters, and government offices. CI

districts are primarily designated along or in proximity to principal highways such as NYS Route 17 and NYS Route 17B. The CI district permits similar commercial uses as the HC-1 and HC-2 districts, but also permits larger-scale uses such as manufacturing and warehouse activities. The E district is also restricted to areas along major highways and permits quarrying and stockpiling activities, with a special permit and site plan review.

The PBP district is allowed within other business districts and is intended to permit commercial, administrative, and research facilities. The PRD district has been established to foster development of the resort and tourism industry, which is a significant contributor of the region's economy. This district allows the Town to support the tourism industry by limiting resorts and entertainment centers to appropriate areas where they can realize their greatest economic potential without adversely affecting residential areas. PRD districts are permitted within an RR-1 district, SR district, HC-1 district, and HC-2 district. The PRD district allows large-scale recreational venues and compatible land uses provided that they do not have significant adverse effects on the environment and the quality of life for Town residents.

VILLAGE OF MONTICELLO ZONING

The Village of Monticello is more densely developed than the Town of Thompson and is the focus of neighborhood commercial activity and higher-density residential development. The Village zoning code is structured to limit commercial, retail, and business activity to principal highways in the Village with residential uses along local streets. Mixed residential and commercial uses are permitted in business districts, where appropriate, to promote vitality in the downtown area.

A significant portion of the Village of Monticello is zoned as RM (Multiple Dwelling Residence). The RM district allows multiple-family dwelling units by special permit. As such, higher-density residential uses are concentrated in the Village center, rather than in more sparse, rural areas of the community such as the Town of Thompson. This development pattern is consistent with the vision expressed in the Town of Thompson/Village of Monticello Joint Comprehensive Plan.

The Village has retained a professional planning firm for the purpose of updating its zoning ordinance in the near future. Under New York State law, local land use regulations, such as zoning codes, must be consistent with local comprehensive plans. It is possible, therefore, that the Village may elect to update its 1999 joint comprehensive plan as a prerequisite to revising its zoning and other land use regulations. Nonetheless, revisions to the existing zoning code are expected to provide the Village with more refined tools to manage its growth and direct new development in a manner consistent with its comprehensive plan policies.

B. TOWN OF FALLSBURG

COMPREHENSIVE PLAN, 2006

Similar to the Town of Thompson and the Village of Monticello, the Town of Fallsburg has implemented land use policies that work to enhance its economic base while preserving its rural and small-town character. The Town of Fallsburg adopted an updated comprehensive plan in 2006 to strengthen its land use policies in response to increasing development pressure. Much of the Town consists of undeveloped woodland and agricultural land with distinct hamlet centers. While the Town encourages increased development to expand its tax base and employment opportunities, it seeks to ensure that development occurs in a controlled manner that is beneficial to the community and its residents and that protects important environmental features.

Principal goals of the comprehensive plan are to enhance the economic vitality of the Town while preserving open space and farmland. The comprehensive plan outlines a series of objectives that direct growth in areas most suitable to accommodate development. These include areas with

existing municipal water and sewer services, or areas where these services can be expanded. The comprehensive plan recommends directing growth in hamlet centers where municipal services are available and where higher-density development already exists. Concentrating development in hamlet centers discourages sprawl and creates vibrant neighborhoods.

The importance of preserving farmland is further evidenced by the comprehensive plan's recommendation to pursue the purchase of development rights (PDR) for farmers through grants from the New York State Department of Agriculture and Markets. In addition, the Plan recommends offering a density bonus to developers who are willing to preserve 25 acres or more of soils classified as having prime or statewide significance for agricultural purposes.

The Town of Fallsburg Comprehensive Plan positions the Town to manage future growth. This is an adopted public policy document that affects other legislation in the Town and that affects the approval process of new development. The primary regulatory document that enforces the visions and goals of the comprehensive plan is the Town zoning code. The Plan recommended a number of zoning revisions that would enhance its ability to guide growth in the Town. Recommendations included:

- Expanding the Agricultural (AG-1) zoning district to further protect farmland and agricultural businesses;
- Adopting cluster subdivision regulations;
- Creating a Mixed Use (MX) zoning district;
- Creating a Planned Resort (PR) zoning district;
- Creating a Neighborhood Business (NB) district;
- Reducing the extent of business districts outside of hamlet centers; and
- Adopting a NYS Route 42 Overlay Zone to improve the appearance of this corridor

The recommendations listed above strive to create a master plan for future development that promotes economic development, encourages commercial activities in higher-density areas, and prevents suburban residential sprawl.

TOWN OF FALLSBURG ZONING CODE

The Town of Fallsburg zoning code is the regulatory document that enforces goals and objectives of the Town comprehensive plan. The zoning code was last updated in 2007 and incorporates many of the principles outlined in the comprehensive plan. In compliance with the comprehensive plan, an MX district, an NB district, and a PR district were created. These zoning districts allow the Town to direct growth in hamlet centers and implement special standards that cater to the Town's unique position of hosting many resort venues. In addition, the zoning code has provisions for cluster subdivisions and the AG-1 district was expanded to protect the interest of farmers and the critical nature of the Town's farmland.

After the adoption of the Town comprehensive plan, the zoning code was modified to consolidate business and commercial districts into hamlet centers and provide greater flexibility in lower-density residential districts for cluster developments. The geographic extent of the Business (B-1) district was reduced and modified to limit small-scale commercial and service uses to principal highways and hamlet centers, which are conducive to this type of development. Mixed commercial and residential uses are permitted as well, which is characteristic of hamlet centers. The zoning code also implements a Hamlet Residence (HR-1) district to allow for greater density of residential development in hamlet centers.

As discussed above, in response to recommendations of the comprehensive plan, the zoning code incorporates several new districts that will allow the Town to better manage growth. The NB

district was created to allow small-scale business development along principal roadways and in hamlet centers that is compatible with adjacent residential uses. The MX district was created to foster mixed commercial and residential development in hamlet centers. The PR district was created to support continued development of existing resort facilities, which support much of the area's economy, or support reuse of these already developed sites for mixed residential and commercial developments.

The zoning code that was adopted in 2007 expanded AG-1 districts to support agricultural practices in the Town, which are a significant component of the Town's character and a way of life that sustains many local residents. Expanding the AG-1 district reduces the potential for outlying areas of the Town to be developed with commercial businesses and higher-density residential developments.

A significant portion of the Town is zoned for large-lot residential uses, which aim to preserve the rural character of the Town by reducing density of residences. However, higher-density cluster subdivisions are permitted in residential zoning districts, which promote open space preservation for larger developments. Cluster subdivision sites must be at least 15 acres whereby at least 35 percent of the site must be preserved as open space. Cluster subdivisions allow homes to be grouped on smaller lots to minimize overall land disturbance and the extent of infrastructure, which is more efficient and reduces impervious surface coverage.

Similar to the Town of Thompson, the Town of Fallsburg includes provisions for PUD districts, which encourage community developments of clustered housing and small-scale commercial uses that serve local residents. Minimum site area for a PUD is 25 acres of which at least 35 percent must be preserved as open space. As with cluster subdivisions, the PUD allows for higher-density development in order to minimize land disturbance and offer greater protection to environmental resources.

C. CONCLUSION

As indicated by the land use policies discussed above, the Towns of Thompson and Fallsburg, and the Village of Monticello have tools in place to guide growth that is consistent with maintaining their rural and touristic character. In response to increasing development pressure, each municipality has recently updated and revised its land use policies, or as in the case of the Village of Monticello, will do so in the near future, to better manage impending growth and ensure that their rural and scenic qualities are preserved. Although these communities may absorb a moderate portion of population influx due to the proposed project, each municipality has developed a set of clear and deliberate public policy documents that will direct growth in a conscious and orderly manner. These documents do not intend to inhibit economic growth, but have implemented mechanisms to control growth and develop in a manner consistent with ideals of the community.