APPENDIX AIR

AIR QUALITY TABLES

Alternative A- B	**364586**	**total square feet of space to be constructed**	
Area of Disturbance	**56.57**	**acres**	
Total Duration	18	months	
Workdays/week	5	days/week	
Construction Emissions			
Site Preparation and Grading	6	Months	Year 2024
Workdays Total	105	(from Assumptions under each alternative emissions table)	
Work hours/day	8	hours/day	
Bulldozers	4	#	
Motor Grader	1	#	
Excavator	2	#	
Scraper	2	#	
Tractor/Loader/Backhoe	4	#	
Water Truck	2	#	
Other Construction Equip	3	#	
Employee Miles	25	Miles/roundtrip	
Construction, Paving, and Architectural Coating	12	Months	Year 2024
Workdays Total	290	(from Assumptions under each alternative emissions table)	
Work hours/day	8	hours/day	
Concrete/Industrial Saw	2	#	
Crane	2	#	
Rough Terrain Forklift	6	#	
Rubber Tire Dozer	2	#	
Tractors/Loader/Backhoe	6	#	
Other Construction Equip	2	#	
Air Compressor	2	#	
Aerial Lift	2	#	
Employee Miles	25	Miles/roundtrip	
Paver	2	#	
Paving Equipment	2	#	
Rollers	2	#	
Fugitive Dust			
Area of Disturbance	**20.45**	**acres**	
On-site Cut/Fill	0	cubic yards	
Off-site Cut/Fill	40502	cubic yards	
Operational - Mobile Emissions			
Total VMT Per Year	161,917,650	miles/yr	(obtain from traffic consultant or enter "o" and calculate using worksheet)
Vehicle Starts Per year	5,223,150	starts/yr	(obtain from traffic consultant or enter "o" and calculate using worksheet)
Emission Factors	From moves, see sheet "Moblie Emission Factors"		
Operational - Stationary Sources			
Casino	85.1	MMBtu/ft2 (Other from Entertainment/Public Assembly , EIA)	
Multi-Purpose and/or Rest.	Yes	If "Yes", use Higher Energy Intensity Use Rate	
Hotel	81	From Chumash Energy Study	
Casino SF	95003		
Hotel SF	188734	(added the travel plaza to the hotel square footage to capture NG emissions)	
Other	0	MMBtu/ft2	
Other SF	80849		
Operational - Generator			
Number of Generators	1	#	
Fuel	Diesel	(assume diesel unless NG is specifically addressed in the project description)	
Output	2000	kW	
Hours of Operation	30	hours per yr	
EPA Tier	2	(assume 2 until Tier 3 becomes required)	
Operational - Energy, Solid Waste, Water&Wastewater			
Energy	Calculated Automatically From Stationary Sources		
Solid Waste		Metric Tons/Year (convert to metric tons by multiplying tons by 0.907185)	
Water Use	42.111875	Million Gallons per Year	
Wastewater Generation	41.30413	Million Gallons per Year	
USEPA eGRID Emission Factor CO2	1000.053	lb CO2/MW Hr	
USEPA eGRID Emission Factor CH4	0.087	lb CH4/MW Hr	
USEPA eGRID Emission Factor N2O	0.012	lb N2O/MW Hr	
eGRID Emission Factors: https://www.epa.gov/egrid/download-data			

Alternative B-Reduced Int.	**256223**	**total square feet of space to be constructed**	
Area of Disturbance	**42.11**	**acres**	
Total Duration	18	months	
Workdays/week	5	days/week	
Construction Emissions			
Site Preparation and Grading	18	Months (April through December) - Default	Year 2024
Workdays Total	105	(from Assumptions under each alternative emissions table)	
Work hours/day	8	hours/day	
Bulldozers	4	#	
Motor Grader	1	#	
Excavator	2	#	
Scraper	2	#	
Tractor/Loader/Backhoe	4	#	
Water Truck	2	#	
Other Construction Equip	3	#	
Employee Miles	25	Miles/roundtrip	
Construction, Paving, and Architectural Coating	12	Months	Year 2024
Workdays Total	290	(from Assumptions under each alternative emissions table)	
Work hours/day	8	hours/day	
Concrete/Industrial Saw	2	#	
Crane	2	#	
Rough Terrain Forklift	6	#	
Rubber Tire Dozer	2	#	
Tractors/Loader/Backhoe	6	#	
Other Construction Equip	2	#	
Air Compressor	2	#	
Aerial Lift	2	#	
Employee Miles	25	Miles/roundtrip	
Paver	2	#	
Paving Equipment	2	#	
Rollers	2	#	
Fugitive Dust			
Area of Disturbance	**20.45**	**acres**	
On-site Cut/Fill	0	cubic yards	
Off-site Cut/Fill	59328	cubic yards	
Operational - Mobile Emissions			
Total VMT Per Year	66,928,225	miles/yr (obtain from traffic consultant or enter "o" and calculate using worksheet)	
Vehicle Starts Per year	2,158,975	starts/yr (obtain from traffic consultant or enter "o" and calculate using worksheet)	
Emission Factors	From moves, see sheet "Moblie Emission Factors"		
Operational - Stationary Sources			
Casino	85.1	MMBtu/ft2 (Other from Entertainment/Public Assembly , EIA)	
Multi-Purpose and/or Rest.	Yes	If "Yes", use Higher Energy Intensity Use Rate	
Hotel	81	From Chumash Energy Study	
Casino SF	47501		
Hotel SF	188734		
Other	0	MMBtu/ft2	
Other SF	19988		
Operational - Generator			
Number of Generators	1	#	
Fuel	Diesel	(assume diesel unless NG is specifically addressed in the project description)	
Output	2000	kW	
Hours of Operation	30	hours per yr	
EPA Tier	2	(assume 2 until Tier 3 becomes required)	
Operational - Energy, Solid Waste, Water&Wastewater			
Energy	Calculated Automatically From Stationary Sources		
Solid Waste		Metric Tons/Year (convert to metric tons by multiplying tons by 0.907185)	
Water Use	27.38079414	Million Gallons per Year Used the same ratio of water to wastewater as Alt A	
Wastewater Generation	26.855605	Million Gallons per Year	
USEPA eGRID Emission Factor CO2	1000.053	lb CO2/MW Hr	
USEPA eGRID Emission Factor CH4	0.087	lb CH4/MW Hr	
USEPA eGRID Emission Factor N2O	0.012	lb N2O/MW Hr	
eGRID Emission Factors: https://www.epa.gov/egrid/download-data			

Alternative C-Reduced No Casino	324985	total square feet of space to be constructed	
Area of Disturbance	**42.11**	**acres**	
Total Duration	18	months	
Workdays/week	5	days/week	
Construction Emissions			
Site Preparation and Grading	18	Months (April through December) - Default	Year 2024
Workdays Total	105	(from Assumptions under each alternative emissions table)	
Work hours/day	8	hours/day	
Bulldozers	4	#	
Motor Grader	1	#	
Excavator	2	#	
Scraper	2	#	
Tractor/Loader/Backhoe	4	#	
Water Truck	2	#	
Other Construction Equip	3	#	
Employee Miles	25	Miles/roundtrip	
Construction, Paving, and Architectural Coating	12	Months	Year 2024
Workdays Total	290	(from Assumptions under each alternative emissions table)	
Work hours/day	8	hours/day	
Concrete/Industrial Saw	2	#	
Crane	2	#	
Rough Terrain Forklift	6	#	
Rubber Tire Dozer	2	#	
Tractors/Loader/Backhoe	6	#	
Other Construction Equip	2	#	
Air Compressor	2	#	
Aerial Lift	2	#	
Employee Miles	25	Miles/roundtrip	
Paver	2	#	
Paving Equipment	2	#	
Rollers	2	#	
Fugitive Dust			
Area of Disturbance	**20.45**	**acres**	
On-site Cut/Fill	0	cubic yards	
Off-site Cut/Fill	25021	cubic yards	
Operational - Mobile Emissions			
Total VMT Per Year	141,647	miles/yr (obtain from traffic consultant or enter "o" and calculate using worksheet)	
Vehicle Starts Per year	658,825	starts/yr (obtain from traffic consultant or enter "o" and calculate using worksheet)	
Emission Factors	From moves, see sheet "Moblie Emission Factors"		
Operational - Stationary Sources			
Casino	85.1	MMBtu/ft2 (Other from Entertainment/Public Assembly , EIA)	
Multi-Purpose and/or Rest.	Yes	If "Yes", use Higher Energy Intensity Use Rate	
Hotel	81	From Chumash Energy Study	
Casino SF	0		
Hotel SF	188734		
Other	0	MMBtu/ft2	
Other SF	136251		
Operational - Generator			
Number of Generators	1	#	
Fuel	Diesel	(assume diesel unless NG is specifically addressed in the project description)	
Output	2000	kW	
Hours of Operation	30	hours per yr	
EPA Tier	2	(assume 2 until Tier 3 becomes required)	
Operational - Energy, Solid Waste, Water&Wastewater			
Energy	Calculated Automatically From Stationary Sources		
Solid Waste		Metric Tons/Year (convert to metric tons by multiplying tons by 0.907185)	
Water Use	31.964789	Million Gallons per Year Used the same ratio of water to wastewater as Alt A	
Wastewater Generation	31.351675	Million Gallons per Year	
USEPA eGRID Emission Factor CO2	1000.053	lb CO2/MW Hr	
USEPA eGRID Emission Factor CH4	0.087	lb CH4/MW Hr	
USEPA eGRID Emission Factor N2O	0.012	lb N2O/MW Hr	
eGRID Emission Factors: https://www.epa.gov/egrid/download-data			

Table A-Construction Emissions

Construction Emissions – Alternatives A[1]

Construction Year	Criteria Pollutants					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
	tons per year					
2024	3.36	4.74	14.06	0.01	0.30	0.28
Maximum Year Emissions	**3.36**	**4.74**	**14.06**	**0.01**	**0.30**	**0.28**
De Minimis Level	*N/A*	*100*	*N/A*	*N/A*	*N/A*	*N/A*

Notes: N/A = Not Applicable; de minimis levels are not applicable due to attainment status (Refer to **Section 3.4**).

Source: EPA, MOVES, 2023; AP-42, 1995.

See note above regarding MOVES version

Table A-Operational Emissions

Operation Emissions - Alternatives A

Sources	Criteria Pollutants					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
	tons per year					
Stationary	0.08	0.41	0.36	0.09	0.08	0.04
Mobile	31.42	35.27	295.86	0.20	7.35	1.82
Total Emissions	**31.42**	**35.27**	**295.86**	**0.20**	**7.35**	**1.82**
De Minimis Level	*N/A*	*100*	*N/A*	*N/A*	*N/A*	*N/A*

Notes: N/A = Not Applicable; de minimus levels are not applicable due to attainment status
(Refer to **Section 3.4**).
Source: EPA, MOVES, 2023; AP-42, 1995.

Table A - Cumulative GHG

Alternative A : PROJECT-RELATED GHG EMISSIONS

Sources	GHGs	CO_2e Emissions (ST)	Conversion Factor (ST/MT)	GHG Emissions in CO_2e (MT per year)	
Direct					
Amortized Construction	CO_2e	3464.58	0.91	157.6	3152.76863
Area	CO_2e	1,286.83		1,287	
			Subtotal	***1,444***	
Indirect					
Mobile	CO_2e	42,347	0.91	38,535	
Electricity Usage	CO_2e			2105.94	
Water Conveyance/ Wastewater Treatment	CO_2e			18.31	
Solid Waste Disposal	CO_2e			87.26	
			Subtotal	***40,747***	
Total Project-Related GHG Emissions				**42,191**	

Table B-Construction Emissions

Construction Emissions – Alternative B[1]

Construction Year	Criteria Pollutants					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
	tons per year					
2024	2.58	4.64	13.68	0.01	0.30	0.27
Maximum Year Emissions	**2.58**	**4.64**	**13.68**	**0.01**	**0.30**	**0.27**
De Minimis Level	*N/A*	*100*	*N/A*	*N/A*	*N/A*	*N/A*

Notes: N/A = Not Applicable; de minimis levels are not applicable due to attainment status (Refer to **Section 3.4**).

Source: EPA, MOVES, 2023; AP-42, 1995.

See note above regarding MOVES version

Table B-Operational Emissions

Operation Emissions - Alternative B

Sources	Criteria Pollutants					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
	tons per year					
Stationary	0.07	0.41	0.32	0.09	0.06	0.03
Mobile	12.99	14.58	122.29	0.08	3.04	0.75
Total Emissions	**12.99**	**14.58**	**122.29**	**0.09**	**3.04**	**0.75**
De Minimis Level	*N/A*	*100*	*N/A*	*N/A*	*N/A*	*N/A*

Notes: N/A = Not Applicable; de minimus levels are not applicable due to attainment status
(Refer to **Section 3.4**).
Source: EPA, MOVES, 2023; AP-42, 1995.

Table B - Cumulative GHG

Alternative B: PROJECT-RELATED GHG EMISSIONS

Sources	GHGs	CO_2e Emissions (ST)	Conversion Factor (ST/MT)	GHG Emissions in CO_2e (MT per year)	
Direct					
Amortized Construction	CO_2e	3397.34	0.91	154.6	3091.583103
Area	CO_2e	915.73		916	
			Subtotal	***1,070***	
Indirect					
Mobile	CO_2e	17,504	0.91	15,929	
Electricity Usage	CO_2e			1475.98	
Water Conveyance/ Wastewater Treatment	CO_2e			11.90	
Solid Waste Disposal	CO_2e			59.90	
			Subtotal	***17,476***	
Total Project-Related GHG Emissions				**18,547**	

Table C-Construction Emissions

Construction Emissions – Alternative C[1]

Construction Year	Criteria Pollutants					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
	tons per year					
2024	3.05	4.46	13.72	0.01	0.29	0.26
Maximum Year Emissions	**3.05**	**4.46**	**13.72**	**0.01**	**0.29**	**0.26**
De Minimis Level	*N/A*	*100*	*N/A*	*N/A*	*N/A*	*N/A*

Notes: N/A = Not Applicable; de minimis levels are not applicable due to attainment status (Refer to **Section 3.4**).

Source: EPA, MOVES, 2023; AP-42, 1995.

See note above regarding MOVES version

Table C-Operational Emissions

Operation Emissions - Alternative C

Sources	Criteria Pollutants					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
	tons per year					
Stationary	0.07	0.41	0.32	0.09	0.06	0.03
Mobile	0.03	0.03	0.26	0.00	0.01	0.00
Total Emissions	**0.07**	**0.41**	**0.32**	**0.09**	**0.06**	**0.03**
De Minimis Level	*N/A*	*100*	*N/A*	*N/A*	*N/A*	*N/A*

Notes: N/A = Not Applicable; de minimus levels are not applicable due to attainment status
(Refer to **Section 3.4**).
Source: EPA, MOVES, 2023; AP-42, 1995.

Table C - Cumulative GHG

Alternative C: PROJECT-RELATED GHG EMISSIONS

Sources	GHGs	CO_2e Emissions (ST)	Conversion Factor (ST/MT)	GHG Emissions in CO_2e (MT per year)	
Direct					
Amortized Construction	CO_2e	3203.62	0.91	145.8	2915.2963
Area	CO_2e	962.58		963	
			Subtotal	***1,108***	
Indirect					
Mobile	CO_2e	37	0.91	34	
Electricity Usage	CO_2e			1555.51	
Water Conveyance/ Wastewater Treatment	CO_2e			13.89	
Solid Waste Disposal	CO_2e			35.12	
			Subtotal	***1,638***	
Total Project-Related GHG Emissions				**2,747**	

Table A

Alternative A - Proposed Casino Construction Emissions

Construction Equipment[1]	Horsepower[2]	Load Factor[2]	Hours in Use[3] (hours/day)	Emission Factors (g/bhp/hr) or g/mile[5]							Emisssion (tons/year)						
				CO	VOC	NO_x	SO_2	PM_{10}	$PM_{2.5}$[3]	CO_2	CO	VOC	NO_x	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Year 2024 Site Grading																	
4 Bulldozer	367	0.4	8	0.20	0.03	0.59	0.00	0.03	0.03	536.74	0.13	0.02	0.38	0.00	0.02	0.02	347.11
1 Motor Grader	148	0.41	8	0.11	0.02	0.38	0.00	0.03	0.03	536.78	0.01	0.00	0.03	0.00	0.00	0.00	35.87
2 Excavator	360	0.38	8	0.15	0.03	0.42	0.00	0.03	0.03	536.76	0.05	0.01	0.13	0.00	0.01	0.01	161.74
2 Scraper	423	0.48	8	0.21	0.03	0.60	0.00	0.03	0.03	536.74	0.09	0.01	0.27	0.00	0.02	0.01	240.04
4 Tractor/Loader/Backhoe	84	0.37	8	5.87	0.34	1.51	0.00	0.14	0.13	648.48	0.80	0.05	0.21	0.00	0.02	0.02	88.79
2 Water Truck	420	0.59	8	0.05	0.01	0.19	0.00	0.01	0.01	536.79	0.03	0.01	0.10	0.00	0.01	0.01	292.99
3 Other Construction Equipment	234	0.59	8	0.18	0.04	0.60	0.00	0.04	0.04	536.71	0.08	0.02	0.27	0.00	0.02	0.02	244.82
Employee Trips (miles)[4]	47,250			1.52	0.12	0.16	0.00	0.02	0.01	163.35	0.08	0.01	0.01	0.00	0.00	0.00	8.51
Vendor Trips	0			0.47	0.01	0.70	0.00	0.04	0.02	351.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Trips	50,628			0.47	0.01	0.70	0.00	0.04	0.02	351.76	0.03	0.00	0.04	0.00	0.00	0.00	19.63
Fugitive Dust from other worksheet															5.53	0.55	
Total 2024 Site Grading Emissions											**1.30**	**0.12**	**1.43**	**0.00**	**5.62**	**0.64**	**1439.49**
Year 2024 Construction																	
2 Concrete/Industrial Saw	81	0.59	8	0.63	0.06	1.51	0.00	0.10	0.10	595.98	0.15	0.02	0.37	0.00	0.02	0.02	145.55
2 Crane	238	0.43	8	0.10	0.03	0.42	0.00	0.02	0.02	530.96	0.05	0.01	0.22	0.00	0.01	0.01	277.68
6 Rough Terrain Forklift	86	0.59	8	9.29	0.40	1.29	0.00	0.06	0.06	626.24	7.23	0.31	1.00	0.00	0.05	0.05	487.13
2 Rubber Tire Loader	136	0.59	8	5.26	0.24	0.98	0.00	0.06	0.06	595.72	2.16	0.10	0.40	0.00	0.02	0.02	244.27
6 Tractors/Loader/Backhoe	87	0.21	8	5.87	0.34	1.51	0.00	0.14	0.13	648.48	1.65	0.10	0.42	0.00	0.04	0.04	181.63
2 Other Construction Equipment	234	0.59	8	0.18	0.04	0.60	0.00	0.04	0.04	536.71	0.13	0.03	0.42	0.00	0.03	0.02	378.65
Employee Trips (miles)[4]	676,672			1.52	0.12	0.16	0.00	0.02	0.01	163.35	1.13	0.09	0.12	0.00	0.01	0.01	121.84
Vendor Trips	346,583			0.47	0.01	0.70	0.00	0.04	0.02	351.76	0.18	0.00	0.27	0.00	0.02	0.01	134.39
Paving[5]																	
2 Paver	135	0.59	8	0.15	0.02	0.51	0.00	0.04	0.04	536.76	0.00	0.00	0.01	0.00	0.00	0.00	15.07
2 Paving Equipment	131	0.59	8	0.24	0.05	0.87	0.00	0.06	0.06	536.70	0.01	0.00	0.02	0.00	0.00	0.00	14.62
2 Rollers	132	0.59	8	0.18	0.03	0.65	0.00	0.05	0.04	536.75	0.00	0.00	0.02	0.00	0.00	0.00	14.73
Asphalt Emissions												0.03					
Employee Trips (miles)[4]	3000			1.52	0.12	0.16	0.00	0.02	0.01	163.35	0.01	0.00	0.00	0.00	0.00	0.00	0.54
Architectural Coating[6]																	
2 Air Compressor	37	0.48	8	5.32	0.27	1.62	0.00	0.05	0.05	613.49	0.03	0.00	0.01	0.00	0.00	0.00	3.84
2 Aerial Lift	46	0.31	8	2.51	0.66	3.75	0.00	0.39	0.37	694.06	0.01	0.00	0.02	0.00	0.00	0.00	3.49
Coating												2.54					
Employee Trips (miles)[4]	9,333			1.52	0.12	0.16	0.0008	0.01935	0.00821	163.35	0.02	0.00	0.00	0.00	0.00	0.00	1.68
Total 2024 Construction Emissions											**14.06**	**3.36**	**4.74**	**0.01**	**0.30**	**0.28**	**3464.58**

Source: EPA 2023

[1] Construction equipment list adapted from CalEEMod Users Guide

[2] EPA Report No, NR-005d Median Life, Annual Activity, and Load Fator Values for Nonroad Engine Emissions Modeling. 2010

[3] Hours per normal work day.

[4] Based on 20 mile trip length. Emissions from MOVES4.

[5] Emission factors provided by EPA MOVES 4 NONROAD

[6] Based on 150 grams per liter VOC emission factor and **364586** sqft of total area of building space to be constructed.

		Grading	Build	Pave	Coating	Hauling	Vendor
	Days	105	290	20	20		290
	Trips	22.5	116.7	7.5	23.3	2531.4	59.8
Employee	Total VMT	47,250	676,672	3,000	9,333	50,628	346,583

Assumptions

Construction Timeline: **18** Months **5** days/week

To calculate, go to: http://www.timeanddate.com/date/weekdayadd.html?d1=12&m1=9&y1=2013&type=add&ad=50

2024 Workdays: Assumes that grading commences 1/1/2024

1/1/2024 5/30/2024

125 days

2024 Workdays: Assumes 12 months to complete construction after grading is completed.

5/31/2024 8/1/2025

290 days

Table B

Alternatives B - Reduced Intensity Construction Emissions

Construction Equipment[1]	Horsepower[2]	Load Factor[2]	Hours in Use[2] (hours/day)	Emission Factors (g/bhp/hr)[4]							Emisssion (tons/year)						
				CO	VOC	NO_x	SO_2	PM_{10}	$PM_{2.5}$[3]	CO_2	CO	VOC	NO_x	SO_2	PM_{10}	$PM_{2.5}$[3]	CO_2
Year 2024 Site Grading																	
4 Bulldozer	367	0.4	8	0.20	0.03	0.59	0.00	0.03	0.03	536.74	0.13	0.02	0.38	0.00	0.02	0.02	347.11
1 Motor Grader	148	0.41	8	0.11	0.02	0.38	0.00	0.03	0.03	536.78	0.01	0.00	0.03	0.00	0.00	0.00	35.87
2 Excavator	360	0.38	8	0.15	0.03	0.42	0.00	0.03	0.03	536.76	0.05	0.01	0.13	0.00	0.01	0.01	161.74
2 Scraper	423	0.48	8	0.21	0.03	0.60	0.00	0.03	0.03	536.74	0.09	0.01	0.27	0.00	0.02	0.01	240.04
4 Tractor/Loader/Backhoe	84	0.37	8	5.87	0.34	1.51	0.00	0.14	0.13	648.48	0.80	0.05	0.21	0.00	0.02	0.02	88.79
2 Water Truck	420	0.59	8	0.05	0.01	0.19	0.00	0.01	0.01	536.79	0.03	0.01	0.10	0.00	0.01	0.01	292.99
3 Other Construction Equipment	234	0.59	8	0.18	0.04	0.60	0.00	0.04	0.04	536.71	0.08	0.02	0.27	0.00	0.02	0.02	244.82
Employee Trips (miles)[4]	47,250			1.52	0.12	0.16	0.00	0.02	0.01	163.35	0.08	0.01	0.01	0.00	0.00	0.00	8.51
Vendor Trips				0.47	0.01	0.70	0.00	0.04	0.02	351.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Trips	74160			0.47	0.01	0.70	0.00	0.04	0.02	351.76	0.04	0.00	0.06	0.00	0.00	0.00	28.76
Fugitive Dust from other worksheet															5.50	0.55	
Total 2024 Site Grading Emissions											**1.31**	**0.12**	**1.45**	**0.00**	**5.59**	**0.64**	**1448.61**
Year 2024 Construction																	
2 Concrete/Industrial Saw	81	0.59	8	0.63	0.06	1.51	0.00	0.10	0.10	595.98	0.15	0.02	0.37	0.00	0.02	0.02	145.55
2 Crane	238	0.43	8	0.10	0.03	0.42	0.00	0.02	0.02	530.96	0.05	0.01	0.22	0.00	0.01	0.01	277.68
6 Rough Terrain Forklift	86	0.59	8	9.29	0.40	1.29	0.00	0.06	0.06	626.24	7.23	0.31	1.00	0.00	0.05	0.05	487.13
2 Rubber Tire Loader	136	0.59	8	5.26	0.24	0.98	0.00	0.06	0.06	595.72	2.16	0.10	0.40	0.00	0.02	0.02	244.27
6 Tractors/Loader/Backhoe	87	0.21	8	5.87	0.34	1.51	0.00	0.14	0.13	648.48	1.65	0.10	0.42	0.00	0.04	0.04	181.63
2 Other Construction Equipment	234	0.59	8	0.18	0.04	0.60	0.00	0.04	0.04	536.71	0.13	0.03	0.42	0.00	0.03	0.02	378.65
Employee Trips (miles)[4]	475,550			1.52	0.12	0.16	0.00	0.02	0.01	163.35	0.80	0.06	0.08	0.00	0.01	0.00	85.63
Vendor Trips	243570.7083			0.47	0.01	0.70	0.00	0.04	0.02	351.76	0.13	0.00	0.19	0.00	0.01	0.01	94.44
Paving[5]																	
2 Paver	135	0.59	8	0.15	0.02	0.51	0.00	0.04	0.04	536.76	0.00	0.00	0.01	0.00	0.00	0.00	15.07
2 Paving Equipment	131	0.59	8	0.24	0.05	0.87	0.00	0.06	0.06	536.70	0.01	0.00	0.02	0.00	0.00	0.00	14.62
2 Rollers	132	0.59	8	0.18	0.03	0.65	0.00	0.05	0.04	536.75	0.00	0.00	0.02	0.00	0.00	0.00	14.73
Asphalt Emissions												0.03					
Employee Trips (miles)[4]	3000			1.52	0.12	0.16	0.00	0.02	0.01	163.35	0.01	0.00	0.00	0.00	0.00	0.00	0.54
Architectural Coating[6]																	
2 Air Compressor	37	0.48	8	5.32	0.27	1.62	0.00	0.05	0.05	613.49	0.03	0.00	0.01	0.00	0.00	0.00	3.84
2 Aerial Lift	46	0.31	8	2.51	0.66	3.75	0.00	0.39	0.37	694.06	0.01	0.00	0.02	0.00	0.00	0.00	3.49
Coating												1.78					
Employee Trips (miles)[4]	8199.136			1.52	0.12	0.16	0.0008	0.01935	0.00821	163.35	0.01	0.00	0.00	0.00	0.00	0.00	1.48
Total 2024 Construction Emissions											**13.68**	**2.58**	**4.64**	**0.01**	**0.30**	**0.27**	**3397.34**

Source: EPA 2023

[1] Construction equipment list adapted from CalEEMod Users Guide

[2] EPA Report No, NR-005d Median Life, Annual Activity, and Load Fator Values for Nonroad Engine Emissions Modeling. 2010

[3] Hours per normal work day.

[4] Based on 20 mile trip length. Emissions from MOVES4.

[5] Emission factors provided by EPA MOVES 4 NONROAD

[6] Based on 150 grams per liter VOC emission factor and **256223** sqft of total area of building space to be constructed.

		Grading	Build	Pave	Coating	Hauling	Vendor
	Days	105	290	20	20		290
	Trips	22.5	82.0	7.5	20.5	3708.0	42.0
Employee	Total VMT	47,250	475,550	3,000	8,199	74,160	243,571

Assumptions

Construction Timeline: **18** Months **5** days/week

To calculate, go to: http://www.timeanddate.com/date/weekdayadd.html?d1=12&m1=9&y1=2013&type=add&ad=50

2024 Workdays: Assumes that grading commences 1/1/2024

1/1/2024 5/30/2024

125 days

2024 Workdays: Assumes 12 months to complete construction after grading is completed.

5/31/2024 8/1/2025

290 days

Table C

Alternatives C - Reduced Intensity No Casino Construction Emissions

Construction Equipment[1]	Horsepower[2]	Load Factor[2]	Hours in Use[2] (hours/day)	Emission Factors (g/bhp/hr)[4]							Emisssion (tons/year)						
				CO	VOC	NO_x	SO_2	PM_{10}	$PM_{2.5}$[3]	CO_2	CO	VOC	NO_x	SO_2	PM_{10}	$PM_{2.5}$[3]	CO_2
Year 2024 Site Grading																	
4 Bulldozer	367	0.4	8	0.20	0.03	0.59	0.00	0.03	0.03	536.74	0.11	0.02	0.32	0.00	0.02	0.02	291.57
1 Motor Grader	148	0.41	8	0.11	0.02	0.38	0.00	0.03	0.03	536.78	0.01	0.00	0.02	0.00	0.00	0.00	30.13
2 Excavator	360	0.38	8	0.15	0.03	0.42	0.00	0.03	0.03	536.76	0.04	0.01	0.11	0.00	0.01	0.01	135.86
2 Scraper	423	0.48	8	0.21	0.03	0.60	0.00	0.03	0.03	536.74	0.08	0.01	0.23	0.00	0.01	0.01	201.63
4 Tractor/Loader/Backhoe	84	0.37	8	5.87	0.34	1.51	0.00	0.14	0.13	648.48	0.68	0.04	0.17	0.00	0.02	0.02	74.58
2 Water Truck	420	0.59	8	0.05	0.01	0.19	0.00	0.01	0.01	536.79	0.02	0.01	0.09	0.00	0.01	0.01	246.11
3 Other Construction Equipment	234	0.59	8	0.18	0.04	0.60	0.00	0.04	0.04	536.71	0.07	0.02	0.23	0.00	0.01	0.01	205.65
Employee Trips (miles)[4]	47,250			1.52	0.12	0.16	0.00	0.02	0.01	163.35	0.08	0.01	0.01	0.00	0.00	0.00	8.51
Vendor Trips				0.47	0.01	0.70	0.00	0.04	0.02	351.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Trips	31,276			0.47	0.01	0.70	0.00	0.04	0.02	351.76	0.02	0.00	0.02	0.00	0.00	0.00	12.13
Fugitive Dust from other worksheet															3.87	0.39	
Total 2024 Site Grading Emissions											**1.10**	**0.11**	**1.19**	**0.00**	**3.95**	**0.46**	**1206.17**
Year 2024 Construction																	
2 Concrete/Industrial Saw	81	0.59	8	0.63	0.06	1.51	0.00	0.10	0.10	595.98	0.15	0.02	0.37	0.00	0.02	0.02	145.55
2 Crane	238	0.43	8	0.10	0.03	0.42	0.00	0.02	0.02	530.96	0.05	0.01	0.22	0.00	0.01	0.01	277.68
6 Rough Terrain Forklift	86	0.59	8	9.29	0.40	1.29	0.00	0.06	0.06	626.24	7.23	0.31	1.00	0.00	0.05	0.05	487.13
2 Rubber Tire Loader	136	0.59	8	5.26	0.24	0.98	0.00	0.06	0.06	595.72	2.16	0.10	0.40	0.00	0.02	0.02	244.27
6 Tractors/Loader/Backhoe	87	0.21	8	5.87	0.34	1.51	0.00	0.14	0.13	648.48	1.65	0.10	0.42	0.00	0.04	0.04	181.63
2 Other Construction Equipment	234	0.59	8	0.18	0.04	0.60	0.00	0.04	0.04	536.71	0.13	0.03	0.42	0.00	0.03	0.02	378.65
Employee Trips (miles)[4]	603,172			1.52	0.12	0.16	0.00	0.02	0.01	163.35	1.01	0.08	0.11	0.00	0.01	0.01	108.61
Vendor Trips	308937.2407			0.47	0.01	0.70	0.00	0.04	0.02	351.76	0.16	0.00	0.24	0.00	0.02	0.01	119.79
Paving[5]																	
2 Paver	135	0.59	8	0.15	0.02	0.51	0.00	0.04	0.04	536.76	0.00	0.00	0.01	0.00	0.00	0.00	15.07
2 Paving Equipment	131	0.59	8	0.24	0.05	0.87	0.00	0.06	0.06	536.70	0.01	0.00	0.02	0.00	0.00	0.00	14.62
2 Rollers	132	0.59	8	0.18	0.03	0.65	0.00	0.05	0.04	536.75	0.00	0.00	0.02	0.00	0.00	0.00	14.73
Asphalt Emissions												0.03					
Employee Trips (miles)[4]	3,000			1.52	0.12	0.16	0.00	0.02	0.01	163.35	0.01	0.00	0.00	0.00	0.00	0.00	0.54
Architectural Coating[6]																	
2 Air Compressor	37	0.48	8	5.32	0.27	1.62	0.00	0.05	0.05	613.49	0.03	0.00	0.01	0.00	0.00	0.00	3.84
2 Aerial Lift	46	0.31	8	2.51	0.66	3.75	0.00	0.39	0.37	694.06	0.01	0.00	0.02	0.00	0.00	0.00	3.49
Coating												2.26					
Employee Trips (miles)[4]	10399.52			1.52	0.12	0.16	0.0008	0.01935	0.00821	163.35	0.02	0.00	0.00	0.00	0.00	0.00	1.87
Total 2024 Construction Emissions											**13.72**	**3.05**	**4.46**	**0.01**	**0.29**	**0.26**	**3203.62**

Source: EPA 2023

[1] Construction equipment list adapted from CalEEMod Users Guide

[2] EPA Report No, NR-005d Median Life, Annual Activity, and Load Fator Values for Nonroad Engine Emissions Modeling. 2010

[3] Hours per normal work day.

[4] Based on 20 mile trip length. Emissions from MOVES4.

[5] Emission factors provided by EPA MOVES 4 NONROAD

[6] Based on 150 grams per liter VOC emission factor and **324985** sqft of total area of building space to be constructed.

		Grading	Build	Pave	Coating	Hauling	Vendor
	Days	105	290	20	20		290
	Trips	22.5	104.0	7.5	26.0	1563.8	53.3
Employee	Total VMT	47,250	603,172	3,000	10,400	31,276	308,937

Assumptions

Construction Timeline: **18** Months **5** days/week

To calculate, go to: http://www.timeanddate.com/date/weekdayadd.html?d1=12&m1=9&y1=2013&type=add&ad=50

2024 Workdays: Assumes that grading commences 1/1/2024

1/1/2024 5/30/2024

105 days

2024 Workdays: Assumes 12 months to complete construction after grading is completed.

5/31/2024 8/1/2025

290 days

Table 4

Fugitive Dust Emissions from Construction

	Alternative A	**Alternative B**	**Alternative C**
Construction area, acres[1]	56.57	42.11	42.11
Construction duration, months	18	18	18
General construction emission factor, tons PM_{10}/acre-month	0.011	0.011	0.011
Level 2[1]: On-site cut/fill (yd^3)	0	0	0
Onsite cut/fill emissions factor (tons/1000 yd^3)	0.059	0.059	0.059
Off-site-cut/fill (yd^3)	40502	59328	25021
Offsite cut/fill emissions factor (tons/1000 yd^3)	0.22	0.22	0.22
Unmitigated PM_{10} Emissions, tons/year	**25.71**	**25.56**	**18.01**
Unmitigated $PM_{2.5}$ Emissions, tons/year[2]	**2.57**	**2.56**	**1.80**
BMP: Water unpaved surfaces, control efficiency, % [2]	50%	50%	50%
BMP: Limit on-site vehicle speed to 15 mph, control efficiency, % [2]	57%	57%	57%
With BMPs PM_{10} Emissions, tons/year	**5.53**	**5.50**	**3.87**
With BMPs $PM_{2.5}$ Emissions, tons/year2	**0.55**	**0.55**	**0.39**

Source: Western Regional Air Partnership Fugitive Dust Handbook (WRAP), 2006.

[1] Construction area from project description

[2] $PM_{2.5}/PM_{10}$ ratio for fugitive dust from construction and demolition activities is 0.1, based on Western Regional Air Partnership's (WRAP's) Fugitive Dust Handbook.

Table 1

Alternatives A through C - Percent Distribution, Patrons, and Vehicle Miles Travels per Year

Routes[1]	Market Areas	Trip Distribution[1]	Average Distance (miles)	Alternative A		Alternative B		Alternative C	
				Vehicle Trips per Year [1]	Vehicle Miles Traveled per Year	Vehicle Trips per Year [1]	Vehicle Miles Traveled per Year	Vehicle Trips per Year [1]	Vehicle Miles Traveled per Year
From I-41 North		0.35	40	1,828,103	73,124,100	755,641	30,225,650	230,589	80,706
From I-41 South		0.25	40	1,305,788	52,231,500	539,744	21,589,750	164,706	41,177
From STH 158 East		0.10	15	522,315	7,834,725	215,898	3,238,463	65,883	6,588
From West Frontage Road South		0.10	15	522,315	7,834,725	215,898	3,238,463	65,883	6,588
From 60th Street West		0.05	20	261,158	5,223,150	107,949	2,158,975	32,941	1,647
From 60th Street East		0.05	20	261,158	5,223,150	107,949	2,158,975	32,941	1,647
From 71th Street West		0.05	20	261,158	5,223,150	107,949	2,158,975	32,941	1,647
From 71th Street East		0.05	20	261,158	5,223,150	107,949	2,158,975	32,941	1,647
Totals[1]:		1.00	--	5,223,150	161,917,650	2,158,975	66,928,225	658,825	141,647

[1] Totals from Traffic Impact Study (MSA 2024)

Number of average daily vehicle trips for Alternative A, B, and C multiplied by 365.

Source: Montrose 2024

Table 2a
2025 Mobile Operations Criteria Pollutant and GHG Emissions

Pollutant	Emission Factor, g/mi	Alternative A	Alternative B	Alternative C
Vehicle miles traveled per year		161,917,650	66,928,225	141,647
Criteria Pollutant Emissions (tpy)				
VOC	0.18	**31.42**	**12.99**	**0.03**
NOx	0.20	**35.27**	**14.58**	**0.03**
CO	1.66	**295.86**	**122.29**	**0.26**
SO_2	0.00	**0.20**	**0.08**	**0.00**
PM_{10}	0.04	**7.35**	**3.04**	**0.01**
$PM_{2.5}$	0.01	**1.82**	**0.75**	**0.00**
Greenhouse Gas (tpy)				
CO_2e	237.26	**42,346.66**	**17,503.88**	**37.05**

EPA MOVES 4

Tables7 a, b, and c - Alternatives A, B, and C Stationary Source Emissions

Table 7a
Alternative A

Pollutant/GHG	MMscf/year	Emission Factors (lb/MMscf)	Conversion factor (lb/tons)	NG Emissions (tons)	Generator Emissions	Total Emissions
VOC	22.97	5.50	0.0005	0.06	0.02	**0.08**
NOx	22.97	0.64	0.0005	0.01	0.40	**0.41**
CO	22.97	11.00	0.0005	0.13	0.23	**0.36**
SO2	22.97	0.60	0.0005	0.01	0.08	**0.09**
PM10	22.97	5.70	0.0005	0.07	0.01	**0.08**
PM2.5	22.97	1.90	0.0005	0.02	0.01	**0.04**
Greenhouse Gas			**lb/MT**	**MT**	**MT**	**MT**
CO2	22.97	120,000	0.00045	1,241	46.24	**1,286.83**

Stationary Sources include boilers, stoves, heating units, and other equipment.
Source: EPA, AP 42, 1997; Montrose 2024.

Assumptions

Casino Natural Gas Use
Casino 136.4 kBtu/ft^2 per year
Alternative A Casino Square Footage 95,003 square feet
Total Casino Energy Use = Rate x SF = 12,958,409 kbtu/yr or 12,958 MMBtu/yr
Total Energy= 12,958 MMBtu/yr * 1 MMscf/1,028 MMBtu = **12.6 MMscf/yr** (uses default EPA High Heat Value for Natural Gas)

Hotel Natural Gas Use
Hotel 85.7 kBtu/ft^2 per year
Alternative A/B Hotel Square Footage 188,734 square feet
Total HotelEnergy Use = Rate x SF = 16,174,504 kbtu/yr or 16,175 MMBtu/yr
Total Energy= 16,175 MMBtu/yr * 1 MMscf/1,028 MMBtu = **15.7 MMscf/yr** (uses default EPA High Heat Value for Natural Gas)

Restaurant Natural Gas Use
Restaurant 263.3 kBtu/ft^2 per year
Alternative A Restaurant Square Footage 28,888 square feet
Total Casino Energy Use = Rate x SF = 7,606,210 kbtu/yr or 7,606 MMBtu/yr
Total Energy= 7,606 MMBtu/yr * 1 MMscf/1,028 MMBtu = **7.4 MMscf/yr** (uses default EPA High Heat Value for Natural Gas)

Convention Center Natural Gas Use
Convention 81.1 kBtu/ft^2 per year (restaurants)
Alternative C Convention Square Footage 32,340 square feet
Total Casino Energy Use = Rate x SF = 2,622,774 kbtu/yr or 2,623
Total Energy= 2,623 MMBtu/yr * 1 MMscf/1,028 MMBtu = **2.6 MMscf/yr**

Natural gas use accounted the following percent of the total energy use= **0.6 %**
Therefore, natural gas use would be approximately= **22.97 MMscf/yr**
From EIA CBECS 2018 Table E2

Table 7b
Alternative B

Pollutant/GHG	MMscf/year	Emission Factors (lb/MMscf)	Conversion factor (lb/tons)	NG Emissions (tons)	Generator Emissions	Total Emissions
VOC	16.10	5.50	0.0005	0.04	0.02	**0.07**
NOx	16.10	0.64	0.0005	0.01	0.40	**0.41**
CO	16.10	11.00	0.0005	0.09	0.23	**0.32**
SO2	16.10	0.60	0.0005	0.00	0.08	**0.09**
PM10	16.10	5.70	0.0005	0.05	0.01	**0.06**
PM2.5	16.10	1.90	0.0005	0.02	0.01	**0.03**
Greenhouse Gas			**lb/MT**	**MT**	**MT**	**MT**
CO2	16.10	120,000	0.00045	869	46.24	**915.73**

Stationary Sources include boilers, stoves, heating units, and other equipment.
Source: EPA, AP 42, 1997; Montrose 2024.

Assumptions

Casino Natural Gas Use
Casino 136.4 kBtu/ft^2 per year (restaurants)
AlternativeB Casino Square Footage 47,501 square feet
Total Casino Energy Use = Rate x SF = 6,479,136 kbtu/yr or 6,479 MMBtu/yr
Total Energy= 6,479 MMBtu/yr * 1 MMscf/1,028 MMBtu = **6.3 MMscf/yr** (uses default EPA High Heat Value for Natural Gas)
In the study, natural gas use accounted for 60 percent of the total energy use.

Hotel Natural Gas Use
Hotel 85.7 kBtu/ft^2 per year
Alternative A/B Hotel Square Footage 188,734 square feet
Total HotelEnergy Use = Rate x SF = 16,174,504 kbtu/yr or 16,175 MMBtu/yr
Total Energy= 16,175 MMBtu/yr * 1 MMscf/1,028 MMBtu = **15.7 MMscf/yr** (uses default EPA High Heat Value for Natural Gas)

Restaurant Natural Gas Use
Restaurant 263.3 kBtu/ft^2 per year
Alternative A Restaurant Square Footage 18,738 square feet
Total Casino Energy Use = Rate x SF = 4,933,715 kbtu/yr or 4,934
Total Energy= 4,934 MMBtu/yr * 1 MMscf/1,028 MMBtu = **4.8 MMscf/yr**
Natural gas use accounted the following percent of the total energy use= **0.6 %**
Therefore, natural gas use would be approximately= **16.10 MMscf/yr**

Table 7c
Alternative C

Pollutant/GHG	MMscf/year	Emission Factors (lb/MMscf)	Conversion factor (lb/tons)	NG Emissions (tons)	Generator Emissions	Total Emissions
VOC	16.97	5.50	0.0005	0.05	0.02	**0.07**
NOx	16.97	0.64	0.0005	0.01	0.40	**0.41**
CO	16.97	11.00	0.0005	0.09	0.23	**0.32**
SO2	16.97	0.60	0.0005	0.01	0.08	**0.09**
PM10	16.97	5.70	0.0005	0.05	0.01	**0.06**
PM2.5	16.97	1.90	0.0005	0.02	0.01	**0.03**
Greenhouse Gas			**lb/MT**	**MT**	**MT**	**MT**
CO2	16.97	120,000	0.00045	916	46.24	**962.58**

Stationary Sources include boilers, stoves, heating units, and other equipment.
Source: EPA, AP 42, 1997; Montrose 2024.

Assumptions

Convention Center Natural Gas Use

Convention 81.1 kBtu/ft^2 per year (restaurants)
Alternative C Convention Square Footage 126,101 square feet
Total Casino Energy Use = Rate x SF = 10,226,791 kbtu/yr or 10,227 MMBtu/yr
Total Energy= 10,227 MMBtu/yr * 1 MMscf/1,028 MMBtu = **9.9 MMscf/yr** (uses default EPA High Heat Value for Natural Gas)
In the study, natural gas use accounted for 60 percent of the total energy use.

Hotel Natural Gas Use

Hotel 85.7 kBtu/ft^2 per year
Alternative A/B Hotel Square Footage 188,734 square feet
Total HotelEnergy Use = Rate x SF = 16,174,504 kbtu/yr or 16,175 MMBtu/yr
Total Energy= 16,175 MMBtu/yr * 1 MMscf/1,028 MMBtu = **15.7 MMscf/yr** (uses default EPA High Heat Value for Natural Gas)

Restaurant Natural Gas Use

Restaurant 263.3 kBtu/ft^2 per year
Alternative A Restaurant Square Footage 10,150 square feet
Total Casino Energy Use = Rate x SF = 2,672,495 kbtu/yr or 2,672 MMBtu/yr
Total Energy= 2,672 MMBtu/yr * 1 MMscf/1,028 MMBtu = **2.6 MMscf/yr** (uses default EPA High Heat Value for Natural Gas)
Natural gas use accounted the following percent of the total energy use= **0.6 %**
Therefore, natural gas use would be approximately= **16.97 MMscf/yr**

Emergency Generators	**Alternative A**
Quantity of engines	1
Fuel	Diesel
kW	2000
Duration of use per year, hrs	30
EPA Tier	2

Pollutant	Emission Factor, g/kW-hr	Emissions Rate, lb/hr	Emissions, tpy
NMHC (ROG)	0.32	1.41	0.02
NOX	6.08	26.81	0.40
PM10	0.2	0.88	0.01
PM2.5	0.2	0.88	0.01
CO	3.5	15.43	0.23
CO2	699.2	3082.94	46.24
SOX	1.25	5.50	0.08

Note: Emission factors for NMHC+NOX, PM, and CO based on EPA Tier 2 Emission factor for NMHC+NOX (6.4 g/kW-hr) split 5% NMHC and 95% NOX, Emergency generators assumed to run a total of 30 hours per year.

Sources: Butera et al, 2016. KOHLER Power Systems 2012. USEPA 1995. USEPA 2016.

Allowable Emissions (Tribal New Source review)	
Quantity of engines	1
Fuel	0
kW	2000
Duration of use per year, hrs	30
EPA Tier	0

Pollutant	Emission Factor, g/kW-hr	Emissions Rate, lb/hr	Emissions, tpy
NMHC (ROG)	0.32	1.41	0.02
NOX	6.08	26.81	0.40
PM10	0.2	0.88	0.01
PM2.5	0.2	0.88	0.01
CO	3.5	15.43	0.23
CO2	699.2	3082.94	46.24
SOX	1.25	5.50	0.08

Note: Emission factors for NMHC+NOX, PM, and CO based on EPA Tier 2 Emission factor for NMHC+NOX (6.4 g/kW-hr) split 5% NMHC and 95% Emergency generators assumed to run a total of 30 hours per year.

Sources: Butera et al, 2016. KOHLER Power Systems 2012. USEPA 1995. USEPA 2016.

Emergency Generators	**Alterantive B**
Quantity of engines	1
Fuel	Diesel
kW	2000
Duration of use per year, hrs	30
EPA Tier	2

Pollutant	Emission Factor, g/kW-hr	Emissions Rate, lb/hr	Emissions, tpy
NMHC (ROG)	0.32	1.41	0.02
NOX	6.08	26.81	0.40
PM10	0.2	0.88	0.01
PM2.5	0.2	0.88	0.01
CO	3.5	15.43	0.23
CO2	699.2	3082.94	46.24
SOX	1.25	5.50	0.08

Note: Emission factors for NMHC+NOX, PM, and CO based on EPA Tier 2 Emission factor for NMHC+NOX (6.4 g/kW-hr) split 5% NMHC and 95% NOX, Emergency generators assumed to run a total of 30 hours per year.

Sources: Butera et al, 2016. KOHLER Power Systems 2012. USEPA 1995. USEPA 2016.

Emergency Generators	**Alterantive C**
Quantity of engines	1
Fuel	Diesel
kW	2000
Duration of use per year, hrs	30
EPA Tier	2

Pollutant	Emission Factor, g/kW-hr	Emissions Rate, lb/hr	Emissions, tpy
NMHC (ROG)	0.32	1.41	0.02
NOX	6.08	26.81	0.40
PM10	0.2	0.88	0.01
PM2.5	0.2	0.88	0.01
CO	3.5	15.43	0.23
CO2	699.2	3082.94	46.24
SOX	1.25	5.50	0.08

Note: Emission factors for NMHC+NOX, PM, and CO based on EPA Tier 2 Emission factor for NMHC+NOX (6.4 g/kW-hr) split 5% NMHC and 95% NOX, Emergency generators assumed to run a total of 30 hours per year.

Sources: Butera et al, 2016. KOHLER Power Systems 2012. USEPA 1995. USEPA 2016.

Alternative A

	Emission Factors			Use	Emissions	
	CO_2	CH_4	N_2O		($MT of CO_2e$)	
	lbs of/MWh			MWh[1] per Year		
Electricity[2]	1000.053	0.087	0.012	4,618	**2,105.94**	WA egrid
	MT of CO_2/MT of Solid Waste			MT per Year		
Solidwaste[2]	0.52			168	**87.26**	
	Indoors		Outdoor			
Water/Wastewater[3]	MWh/million Gallons			Million Gallons per Year		
	0.57	0.63 %	0.33 0.37 %	83.42	**18.31**	
Total Emissions from Electricity, Solidwaste, and Water/Wastewater					**2,211.50**	MT CO2e/year

[1] Assumes electricity is 40% of total energy use calculated for operational stationary sources

[2]From EPA's GHG emission Factors Hub 2023 https://www.epa.gov/climateleadership/ghg-emission-factors-hub

eGRID Wisconsin

Alternative B

	Emission Factors			Use	Emissions	
	CO_2	CH_4	N_2O		($MT of CO_2e$)	
	lbs of/MWh			MWh[1] per Year		
Electricity[1]	1000.053	0.087	0.012	3,237	**1,475.98**	
	MT of CO_2/MT of Solid Waste			MT per Year		
Solidwaste[1]	0.52			115	**59.90**	
	Indoors		Outdoor			
Water/Wastewater[2]	MWh/million Gallons			Million Gallons per Year		
	0.57	0.63 %	0.33 0.37 %	54.24	**11.90**	
Total Emissions from Electricity, Solidwaste, and Water/Wastewater					**1,547.78**	MT CO2e/year

[1] Assumes electricity is 40% of total energy use calculated for operational stationary sources

[2]From EPA's GHG emission Factors Hub 2023 https://www.epa.gov/climateleadership/ghg-emission-factors-hub

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Alternative C

	Emission Factors			Use	Emissions	
	CO_2	CH_4	N_2O		($MT of CO_2e$)	
	lbs of/MWh			MWh[1] per Year		
Electricity[1]	1000.053	0.087	0.012	3,411	**1,555.51**	
	MT of CO_2/MT of Solid Waste			MT per Year		
Solidwaste[1]	0.52			68	**35.12**	
	Indoors		Outdoor			
Water/Wastewater[2]	MWh/million Gallons			Million Gallons per Year		
	0.57	0.63 %	0.33 0.37 %	63.32	**13.89**	
Total Emissions from Electricity, Solidwaste, and Water/Wastewater					**1,604.52**	

[1] Assumes electricity is 40% of total energy use calculated for operational stationary sources

[2]From EPA's GHG emission Factors Hub 2023 https://www.epa.gov/climateleadership/ghg-emission-factors-hub

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		Alt A		Alt B		Alt C	
Solid Waste	Daily Waste Production Rate	Waste Indi	Daily Waste (lb)				
Casino	5 lb/1000 sqft/day	95003	475.015	47501	237.505	0	0
Restaurant	0.005 lb/sqft/day	28888	144.44	18738	93.69	10150	50.75
Hotel	2 lb/room/day	150	300	150	300	150	300
Arena	0.15 lb/1000 sqft/day					126101	19.347
		lb/day	919.455		631.195		370.097
		tons/yr	167.8005		115.1930875		67.5427

0.4812