BENEFITS OF DOING BUSINESS WITH TNC:

- Work with a successful, established corporation
- Location with quality, deep water port
- Large quantity of product
It is my great pleasure to introduce you to Tyonek Native Corporation, an Alaska Native Corporation that has grown, from its humble beginnings in 1973, into a modern economic enterprise that will gross in excess of $100 million in revenue this year.

As you meet to discuss future prospects with our staff, it will become apparent that our market maturity will bring an economic viability to any opportunity that arises from our dialogue together.

Thank you for meeting with us, and we look forward to learning about your organization and economic needs.

Sincerely yours,

Tom Harris

Tom Harris
Chief Executive Officer
Tyonek Native Corporation
**THE TYONEK STORY**

In 1973, the Tyonek Native Corporation (TNC) was founded as a native-owned village corporation and formed pursuant to the regulations established by the Alaska Native Claims Settlement Act (ANCSA). In the thirty-five years since its inception, TNC has grown from a small land owner to a modern corporation with annual revenues over $100 million and assets over $35 million by relying on its natural ability to pursue economic development through sound business practices. TNC finds its roots in the native tribe by which it is owned.

Tyonek is a Dena’ina (deh-NYE-nuh) village that has flourished on the West Cook Inlet of south central Alaska for over 1800 years. As part of the Dene tradition, ethnographic and archaeological evidence portrays this hearty citizenry as ingenious and mobile with an innate capacity to trade which has allowed them to thrive in an otherwise harsh climate.

The western world first connected with the Tyonek people in 1778, when Captain James Cook landed in Prince William Sound and traded with the Alaska natives. He was surprised to find iron knives and glass beads obtained from trade with Russian fur hunters who had been bartering with the Tyonek people for a long period of time.

The citizens of Tyonek call themselves “Tebughna” (teh-BOW-nuh) which loosely translates to “Beach People” and signifies their close ties with the land and sea. The village, encompassing 22 square miles of land and 3 square miles of water, lies about 45 air miles southwest of Anchorage on the northwest shore of Cook Inlet and is currently home to nearly 200 of the 650 shareholders of the Tyonek Native Corporation.

In 1968, Tyonek leaders supported and helped fund the Alaska Federation of Natives, a group that spearheaded the congressional passage of the ANCSA. Signed into law on December 18, 1971 by President Richard Nixon, ANCSA was a landmark settlement with the United States Congress that transferred 44 million acres of land to Alaska’s Native American Corporations in exchange for past land claims. This single act paved the way for the building of the Trans-Alaska Pipeline from Prudhoe Bay on the Arctic Circle to Valdez, 800 miles to the south.

In 2007, TNC formed a new subsidiary called Tyonek Enterprise Development, Incorporated. The goal of this subsidiary istodevelopeconomic opportunities around the natural resource-rich West Cook Inlet by utilizing TNC’s core capabilities of appraising and securing profitable ventures for its shareholders.

**PROJECT SITE DETAILS**

The TNC’s project area lies on a bluff on the northwest shore of Cook Inlet, 43 miles (69.2km) west of Anchorage, see Figure 1. The Project area is about 2 miles (3.2 km) southwest of the Native Village of Tyonek, see Figure 2. It is an area of about 2 square miles irregularly shaped. Access to the study area is achieved by the use of...
improved dirt roads from the Village of Tyonek. The study area is underlain by glaciofluvial outwash deposits. The relief in the area is about 250 feet, and no known bedrock outcrops exist in the study area. A 2007 study indicates that the sand and gravel sampled from deposits in the Tyonek Native Corporation’s project area is suitable for some road and airstrip construction.

Climate

Climate is generally mild for the region, with average winter temperatures ranging from 4° to 22° F and average summer temperatures ranging from 46° to 65° F. Temperature extremes have been recorded from -27° to 91° F. The average annual precipitation is 23 inches, including 82 inches of snow.

Port Information

The North Foreland Facility (NFF), see Figure 3, located on the project site, is the only all-season, deep-water cargo port on the west side of the Cook Inlet. This facility was deemed by many Asian and U.S. firms and governments as one of Alaska’s most cost effective commodity port sites. Built in 1947, this steel and pile supported structure is 1,475 feet long, 17 feet wide, and provides a berthing face of 685 feet. A 174 by 50 feet wharf is also located at the end of the pier. NFF benefits not only from the relatively stable climate,
including moderate precipitation and mild winters, but also from the deep pier depths; therefore it is subject to less ice than many other locations in Alaska.

Located directly on-site at the TNC project area and only 60 miles southwest of Anchorage, the port is easily accessible. The port is designed for pier face depths of -36 feet, at the average mean lower low water level (MLLW). The maximum pier vessel tonnage is 30,000 dead weight tonnage (DWT), with an average tidal range of +29 feet. NFF has a maximum draft alongside of -37 feet. NFF also has three air strips on site and receives five arriving flights from Anchorage on a daily basis.

Available Workforce

Tyonek Contractors, LLC (TCLLC), a majority-owned subsidiary of Tyonek Native Corporation, is the largest contractor on the West Cook Inlet. Based in the nearby village of Tyonek, TCLLC can supply a local, reliable work force that is experienced in heavy construction.

Power Supply

Current power requirements can be met by the Beluga Power Plant in Beluga, Alaska. This plant is located on the western border of the Cook Inlet just eight miles northeast of the TNC project area and is owned and operated by the Anchorage, Alaska-based Chugach Electric Association. Chugach has a total of five combustion turbines in Alaska and is the primary supplier of electricity in the state, with over 2,000 miles of transmission and distribution lines.

The Beluga Power Plant is not only the largest Chugach plant; it is also the largest power plant in Alaska, generating 385MW. The plant is accessible only by barge or aircraft, as no roadways connect to any part of Alaska’s major highway system. Beluga is currently fueled by natural gas, although other more economic and environmentally friendly options are being explored, with an implementation goal around the year 2020.
Looking into the future, TNC also has explored various possibilities regarding a regional power plant of their own. A plant is in the planning stages, as there are major opportunities for the corporation to build just west of the village of Tyonek, in Beluga, Alaska. Infrastructure permits can be obtained to use Chuitna Group Coal, which could be used as feedstock for a coal gasification plant. TNC is also exploring other power production options.

Organizational Maturity

TNC is a stable, growing organization of almost one thousand employees with annual revenues exceeding $100 million. Its strong internal infrastructure is the result of deliberate growth over a thirty-five year period, in which stable and consistent expansion has been a more highly valued principle than short term profits.

Economic Development Maturity

The Tyonek aggregate operation would be a greenfield project. As a seasoned entity, TNC has existing facilities, an available workforce, and utilities. As you study the technical and economic aspects of the TNC’s aggregate supply, we look forward to your thoughtful discussions on a variety of potential business arrangements to suit your economic needs.

Possible Business Arrangements

TNC, along with their fully owned subsidiary, Tyonek Enterprise Development, Inc. (TEDI), has the experience to structure a business arrangement in a variety of methods. It is important to TNC to collaborate and understand a partner’s requirements so that any resulting structure has the greatest opportunity of success for all parties.

Both Coastal Alaska and the entire West Coast of the United States are running into critical sand and gravel supply problems. The Far East Asian countries of Japan, Korea, and Taiwan are also experiencing top-quality aggregate shortages in some coastal cities. New sources are opening up in British Columbia and Baja, California supplying some of Washington, California, the Pacific Islands, and Hawaii, with high-quality aggregates for highway and building construction. Polaris Minerals is the principal driver in the early capture of these domestic and oversea markets. San Francisco Bay and western San Diego County are the hottest new markets being supplied by Canadian Steamships Lines Panamax-class self-unloading bulk carriers. Canadian aggregates were used in a major expansion project on the San Diego Naval Base in 2003, due to a lack of competitive sand, gravel, and fill from California sources. The upper massive glacial till zone adds a great potential to make and ship specialized engineered fills for projects, such as the Seattle-Tacoma airport third-runway and the San Francisco airport expansion.

With its mostly ice-free location on the west shores of the Cook Inlet and large mineable sand and gravel resources, immediately adjacent to the Tyonek Pier, a Tyonek operation offers a unique set of logistics to supply high-quality concrete aggregate supplies to the West Coast and Far East markets. Being already halfway to the Far East markets on the Great Circle shipping routes, there could be opportunities to get back-haul shipping rates on vessels returning empty to Asia. With growing population pressures there is steadily increasing demand to build new infrastructure in the Pacific Rim Nations. With Tyonek aggregate, TNC will be open to three basic types of arrangements:

Direct Investment

Tyonek Native Corporation will entertain a partnership or joint venture agreement with an entity that desires greater involvement in the Tyonek aggregate production. This will of course take into account proportionate reward for investment with an operation that functions from supply to ultimate markets.
Marketing Representation

The growth rate of both Far Eastern and West Coast costal cities is being strongly reflected in their soaring demand for aggregate. Tyonek is willing to sign a Marketing representation agreement with an established regional aggregate supplier who has access to a regional customer base.

Direct Sales from Tribal- Owned Operation

TNC would extract and sell aggregate directly to the customer, either FAS Tyonek or CFR destination, with terms negotiable.

Markets for Aggregate Products

Major potential markets for the Tyonek Native Corporation’s aggregate products include:

- Anchorage, Alaska
- Seattle, Washington
- Portland, Oregon
- San Francisco, California
- Los Angeles, California
- San Diego, California
- Asian Countries
- Pacific Islands

There is a critical shortage of aggregate along the west coast of the United States, particularly in the San Francisco Bay area, Los Angeles, and San Diego County. The expansion of San Francisco International Airport, which has been delayed, will require about 100 million tons of aggregate.

Aggregate is currently being imported by sea into the United States by Canadian producers with operations in British Columbia. These construction materials are currently being sold in the Puget Sound area, San Francisco, Los Angeles, and San Diego. Canadian aggregate was used in a major expansion project at the San Diego Naval Base.

The expanding populations and economies of Far East nations are well known. Japan and China, in particular, present good opportunities for aggregate sales. High quality aggregate products could be shipped in dedicated bulk carriers or perhaps as back haul loads in other types of vessels.

Many Pacific islands lack good construction aggregate, since they are of volcanic or coral origin. These areas also could be potential markets for aggregate.

Geology & Deposit

The deposit considered as the TNC Project Area includes about 1200 acres of land. Similar topography and geology extend over the whole Tyonek-Beluga area, as glacial sediments form a hummocky surface with scattered pothole lakes.

In June, 2007, a reconnaissance geology and sand and gravel assessment was conducted by the Division of Energy and Mineral Development. Six samples were collected by hand within this study area.

Geology

As observed in the southern project area, the geology consists primarily of three units along the bluffs: (1) glacial till mantling the surface and overlying (2) unconsolidated advance outwash sand and gravel, which rest unconformably on

![Figure 5: Sample Locations](image)
(3) Upper Tertiary bedrock, consisting of sandstone, shale, minor conglomerate and coal beds. The glacial till layer at the bluffs is 10 to 15 feet thick and consists of massive, unbedded sediments with high silt and fine sand content and typically 20 percent of rounded gravel and boulders.

The advance outwash sand and gravel occur in well-bedded layers, see Figure 6, predominantly sand with up to 30% gravel in selected layers. Thickness of this outwash is greater than 50 feet in the southern study area. Thin layers and scattered clasts of weathered wood and organic debris occur in the bedded sediments. These could be removed by skimming, bubbling, or flotation during processing. There may also be channels of post-glacial alluvial sand and gravel crossing the till plain toward the Cook Inlet. The Tertiary bedrock consists of inter-bedded coal and fine clastic layers.

**Sample Collection & Analysis Results**

As previously mentioned, six samples were collected from within this study area, see Figure 5. Three samples were collected from existing inland pits namely Pit #1, Pit #2, and Pit #3. Three samples were collected from a shoreline bluff on the coastline at Pit #4. The three samples collected from the bluff located at Pit #4, were collected from 20, 40, and 60 feet above the base of the bluff, as indicated in the sample location number.

**Pit #1**

Pit #1 is the westernmost sample location, located in the SW NW NE corner of Section 14, Township 11 North (T11N), Range 11 West (R11W). Gravel in this site contains silt and up to +6 inch clasts of well-rounded metamorphic and igneous rocks. The deposit is not bedded and appears to be matrix-supported, indicating that this gravel is glacial till. The pit was approximately 25 feet in depth. One sample was collected along the southern wall of the pit.

**Pit #2**

Pit #2 is located in NE SE SW quarter of Section 11, T11N, R11W. Gravel beds at this site are composed of silt and up to +4 inch clasts of well-rounded igneous and metamorphic rocks. The deposit is massively bedded and is matrix-supported, indicating glacial till. The pit is about 10-15 feet in depth. One sample was collected along the southern wall of the pit.

**Pit #3**

Pit #3 is located near the approximate center of Section 11, T11N, R11W. This borrow pit was probably used to construct the logging road and is about 8-10 feet deep. Gravel beds at this site are composed of silt and up to +4 inch clasts of well-rounded igneous and metamorphic rocks. The deposit is massively bedded, and appears to be matrix-supported, indicating glacial till. One sample was collected along the eastern wall.

**Pit #4**

Pit #4 is located in the NW SW NE corner of Section 14, T11N, R11W. This outcrop is about 80 feet high. The upper 10-15 feet is composed of massive, matrix supported sand and gravel with large clasts. The lower 65 to 70 feet of material is composed of well-bedded, crossbedded sand and pebble-sized gravel, with layers contaminated by small wood clasts. Three samples were taken from this site: one sample from approximately 20 feet above the base, one from 40 feet, and one from 60 feet. The sand and gravel at this site is much finer grained than at the other three sites.
The six samples were subjected to a series of six tests:

- Particle size analysis (ASTM D422 / C136)
- Los Angeles (L.A.) Abrasion (ASTM C131)
- Sodium Sulfate Soundness (ASTM C88)
- Specific Gravity (ASTM C 127)
- Absorption (ASTM C127)
- Nordic Abrasion Test (ATM 312)

The following table summarizes the results of the tests on the six samples.

### Particle Size Analysis

All but one sample, from Pit #4-40, had minor amounts of material passing the #200 sieve. The percentage of fines is highly variable throughout the stratigraphic column. Five of the samples contained 0.2% to 3.6% fine material. Pit #4-40 contained 7.4% fine material. See Figure 7 below.

### Los Angeles Abrasion

All samples have values between 17 and 19 percent loss. The strictest percentage loss for common uses of aggregate in highway and airstrip construction in Alaska, according to AKDOT standards, is 40 percent. The three samples of Pit #4 were combined for this test.

### Sodium Sulfate Soundness

The samples collected in the area had percent losses varying from 1% to 27% percent. Four samples had losses of 1% to 2%. Tyonek Pit #4-20 and #4-40 had values of 27% and 15% loss, respectively. According to AKDOT standards, the most stringent percent loss criteria for common uses of aggregate in highway and airstrip construction is nine percent.

### Specific Gravity

Specific gravity for the six samples ranged from 2.607 to 2.543 grams per cubic inch.

### Absorption

Four of the samples, at Pits #1, #2, #3, and #4-60 had absorption values between 1.1% to 1.3%. Pits #4-20 and #4-40 had absorption values of 3.1% and 2.5%, respectively.

### Nordic Abrasion

The Nordic Abrasion value for Pit #1 was 13.0%, and the Nordic Abrasion value for Pit #2 was 11.6%. There was insufficient material to conduct Nordic Abrasion tests for Pit #3 or Pit #4.

### ALASKA STATE REGULATIONS

The development of an aggregate extraction operation in the state of Alaska is subject to a number of state and federal regulatory requirements, involving a number of state and federal regulatory offices, including:

- Alaska Department of Natural Resources Division of Mining, Land and Water (Land, Materials and Water sections)
- Alaska Department of Environmental Conservation, Division of Water and Air Quality
- The United States Army Corps of Engineers

### CONCLUSION

Tyonek Native Corporation is currently seeking to develop its sand and gravel resource for export to global markets. The substantial growth in the demand for natural resources in the Asian sector indicates that economic conditions have matured to the point where extraction and shipment from Alaska is an attractive prospect.
Tom Harris is one of Alaska’s most celebrated native leaders and successful practitioners of modern economic development for Alaskan Native residents. His legendary economic foresight, combined with seasoned executive skills has transformed Tyonek Native Corporation into a regional giant.

Donita Peter is an award winning civic leader, educator, and cultural icon for all Alaska natives. Her ability to bridge cultural difference and facilitate complex economic projects helps raise the standards of any organization she is connected with.

Mark Stemp is a seasoned Alaska executive who has successfully guided multiple ANCSA corporations through the strategic minefields of rapid growth and structural instability. His sustained history of quality improvement and organization development allows TNC to set extraordinary future requirements.

John McClellan is one of the most successful development executives in the state of Alaska. John’s ability to discover, develop and profitably manage large economic enterprises makes him an experienced and highly valued leader at TNC.
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