

**Agency: Commerce, Community and Economic Development****Grants to Municipalities (AS 37.05.315)****Grant Recipient: Northwest Arctic Borough****Federal Tax ID: 92-0116661****Project Title:****Project Type: Equipment and Materials**

# Northwest Arctic Borough - Noatak Winter Fuel Haul System

**State Funding Requested: \$425,000****House District: 40 / T**

One-Time Need

**Brief Project Description:**

The funding will be used to purchase an Arctic Snow Tractor which is capable of hauling fuel off road.

**Funding Plan:**

Total Project Cost:	\$425,000
Funding Already Secured:	(\$0)
FY2013 State Funding Request:	(\$425,000)
Project Deficit:	\$0

**Detailed Project Description and Justification:**

## Brief Project Description

The Noatak Winter Fuel Haul Project will transport fuel, cargo, and consumer durables from the Red Dog Mine Port/Delong Mountain Terminal Facility to Noatak, Alaska utilizing the existing DMTS Road logistics' system supplemented by an Arctic Tractor, winter haul system from an access point along the DMTS Road to Noatak.

## Funding/Project Plan

The capital request for the NWFHLS Project is \$425,000 to cover the procurement of an Arctic Snow Track Tractor capable of hauling fuel off road for up to 30 miles in winter conditions. The NWFHLS Project will be a self-sustaining business, operational costs will be paid for by the end-user and will hopefully be operational by December of 2012.

## Detailed Project Description and Justification

The NWFHLS Project is an important community development initiative for Noatak. Coupled with the Northwest Arctic Leadership Team's (NWALT) support for lowering the cost of energy, the Native Village of Noatak's willingness to lead the project, and NANA Regional Corporation's (NRC) technical support, the NWLHS Project is leveraged for success

## Context &amp; Need

No roads lead to Noatak and the community relies on the river for transportation all year round. Noatak has been without

barge service for years, due to low water conditions in the river. Thus air-transport is the only current viable form of transportation for fuel, consumer durables, and construction materials

Transport by aircraft is expensive but it is the only way to bring bulk loads of fuel and consumer durables into the village. In winter, the river provides an ice road inland to the mountains for hunting and downriver for travel by snow machine to Kotzebue and Delong Mountain Transportaion System (DMTS). This geographic isolation comes at a significant cost -- Noatak reportedly has the highest cost of living in the nation.

A road connecting Noatak with the DMTS has been the object of several feasibility studies and planning efforts. (Refer to attached map for road corridor lay-out) To date, however, there appears to be a lack of consensus from ADOT/PF on such a road as a state sponsored priority. Upon completion of ADOT's 2004 Feasibility Study, NWALT and other regional stakeholders have requested state and federal officials to fund design and construction of a road corridor to the DMTS road. As of January 2012, there has been no funding secured and minimal demonstrable progress for road development. The time has come to develop alternatives due to heightened and imminent risk of fuel cost escalation and imminent negative impact on the community of Noatak.

According to the University of Alaska's Institute of Social and Economic Research's (ISER) Fuel Forecast, the cost of delivered fuel (non-retail) is projected to increase exponentially for the community of Noatak. This is largely due to the community's isolation and lack of logistics' alternatives. The ISER data highlights that Noatak has one of the the highest delivered cost of fuel of any community in Alaska. The anticipated increase in fuel prices is precipitating alternative and creative means of addressing Noatak's cost of energy crisis. While Figure 2 highlights projected future fuel prices forecasts, the residents of Noatak are currently paying in excess of \$10/gallon (retail) for fuel and reportedly has the highest cost of living anywhere in the United States.

In response to the anticipated future spike in fuel prices, team members performed an energy option analysis for Noatak. One of Noatak's leading cost of energy reduction tactics is to systematically address the fuel supply logistics chain.

In particular, the assessment team asserted that economies of scale and supply chain efficiencies can be secured if fuel can be delivered to the DMTS Port, transported to a transition point along the DMTS road via traditional trucking, and then transitioned to Noatak via an Arctic Grade Snow Track tractor with sled for the remaining 20-30 mile corridor. The final off-road corridor would be overland.

#### Current Fuel Delivery System

Noatak is entirely dependent upon air delivery for all fuel, cargo, durable goods, and construction materials. AVEC currently charts flights capable of delivering fuel from Anchorage or from Kotzebue for their power plants. Likewise, the Native Village of Noatak and the NW Arctic Borough School District charts flights from Anchorage or Kotzebue for heating fuel delivery. Air delivery of fuel can be done year round. Teck-Red Dog Mine has also provided heating fuel to the community through a small scale winter haul system .

#### Proposed Fuel Delivery System

There needs to be a fundamental shift in how fuel is supplied to Noatak. Fortunately, there are economic options available due to relatively close access to the DMTS road system. Conceptually, the proposed fuel supply chain will entail the following steps.

1.Sub-contract with the Red Dog Mine Fuel Supplier. Currently, the Red Dog Mine delivers all of their fuel to the DMTS port facility. Through large quantity purchasing power, the Red Dog Mine Port is able to achieve cost savings.

The fuel supplier ships the fuel to the port facility via ocean going barge between July-September of each year. The fuel is transferred from the barge to port site fuel tanks for transport up to the mine or for port operations and stored throughout the year. Initially, the Native Village of Noatak would enter into a storage agreement for their fuel at the port site. The Native Village of Noatak would achieve benefits through Red Dog mine's purchasing power.

2.Fuel Transport from DMTS Port Facility to mine along DMTS road. Once the fuel is delivered to the DMTS port, fuel is transported along the DMTS road up to the mine. The Native Village of Noatak's fuel would need to be stored at the DMTS port facility until sufficient snow-cover and tundra stability is sufficient for ground transport. Currently, a NANA owned company is responsible for the trucked fuel haul between the port site and mine operations. The proposed system would transfer fuel at either road alternatives 1, 2, or 3 as found in Figure 2 along the DMTS road system. In future phases, the development team would design and build a fuel storage depot for intermediate storage. Coordination would need to occur between the DMTS fuel delivery system and the NWFHLS Project.

3.Fuel Transport to the Native Village of Noatak. The Native Village of Noatak fuel would be transported via a 20-30 mile winter road via an Arctic Snow Tractor and Sled System- as shown in the photo. This haul system would need to be reviewed by appropriate regulators, permitted, and reviewed for any health and safety issues. NANA Lynden would play a critical role in making sure this fuel haul system is operated in conformity with current fuel logistics regulations. Most Arctic Snow Tractors travel from 10-12 mph- approximately a 2 hour trip one way from the three proposed transportation corridors. We are currently estimating up to 3-5000 gallons of fuel transported with each trip.

The system as conceptualized has multiple benefits to regional stakeholders and Noatak residents, including:

- Economic Security. Currently, fuel expenditures are being lost to external fuel suppliers/vendors. With this system, a portion of fuel expenditures will remain in the community and will promote the money multiplier effect.
- Cost of living-energy decrease. The proposed system has the potential to dramatically decrease the cost of energy in Noatak.
- Local job creation. 3-5 local jobs would be created with this fuel haul system.

### Project Timeline:

Procurement of an Arctic Tractor & sled and shipment to the DMTS port will occur between July- December 2012.

Plan development and submittal of permits will occur in 2012

### Entity Responsible for the Ongoing Operation and Maintenance of this Project:

Northwest Arctic Borough and the community of Noatak

### Grant Recipient Contact Information:

Name: Bobby Schaeffer  
 Title: Project Manager  
 Address: P.O. Box 1110  
 Kotzebue, Alaska 99752  
 Phone Number: 442-2500  
 Email: bschaeffer@nwarbor.org

## Total Project Snapshot Report

2012 Legislature

TPS Report 58673v1

Has this project been through a public review process at the local level and is it a community priority? ☒ Yes ☐ No

**Noatak Winter Fuel Logistics & Haul System  
CAPSIS Outline**

**Budget Request Amount                      \$425,000**

**Agency:    DCCED**

**Project Title                                        Noatak Winter Fuel Haul & Logistics System  
(NWFHLS Project)**

**Project Type                                        Equipment Procurement, Logistics Planning, & Permitting**

**State Funding Requested**

**Brief Project Description**

The NWFHLS Project will transport fuel, cargo, and consumer durables from the Red Dog Mine Port/DMTS Facility to Noatak, Alaska utilizing the existing DMTS Road logistics' system supplemented by an Arctic Tractor, winter haul system from an access point along the DMTS Road to Noatak.

**Funding/Project Plan**

The initial capital request for the NWFHLS Project is \$425,000 to cover the procurement of an Arctic Snow Track Tractor capable of hauling fuel off road for up to 30 miles in winter conditions. The NWFHLS Project will be a self-sustaining business- operational costs will be paid for by the end-user and will be operational by December of 2012.

**Table 1 Funding/Project Plan**

<b>Phase</b>	<b>Description</b>	<b>Timeline</b>	<b>Funding Status</b>
Equipment Procurement	Procurement of an Arctic Tractor & sled and shipment to the DMTS port.	July- December 2012	Requesting \$350,000
Permitting-Environmental-Logistics planning	Plan development and submittal of permits.	2012	\$75,000
1 <sup>st</sup> Year System Operations	Kick-off operations with the first winter fuel haul.	December 2012	Self-Sustaining User Fees

### Detailed Project Description and Justification.

The NWFHLS Project is an important community development initiative for Noatak. Coupled with the Northwest Arctic Leadership Team's (NWALT) support for lowering the cost of energy, the Native Village of Noatak's willingness to lead the project, and NANA Regional Corporation's (NRC) technical support, the NWLHS Project is leveraged for success

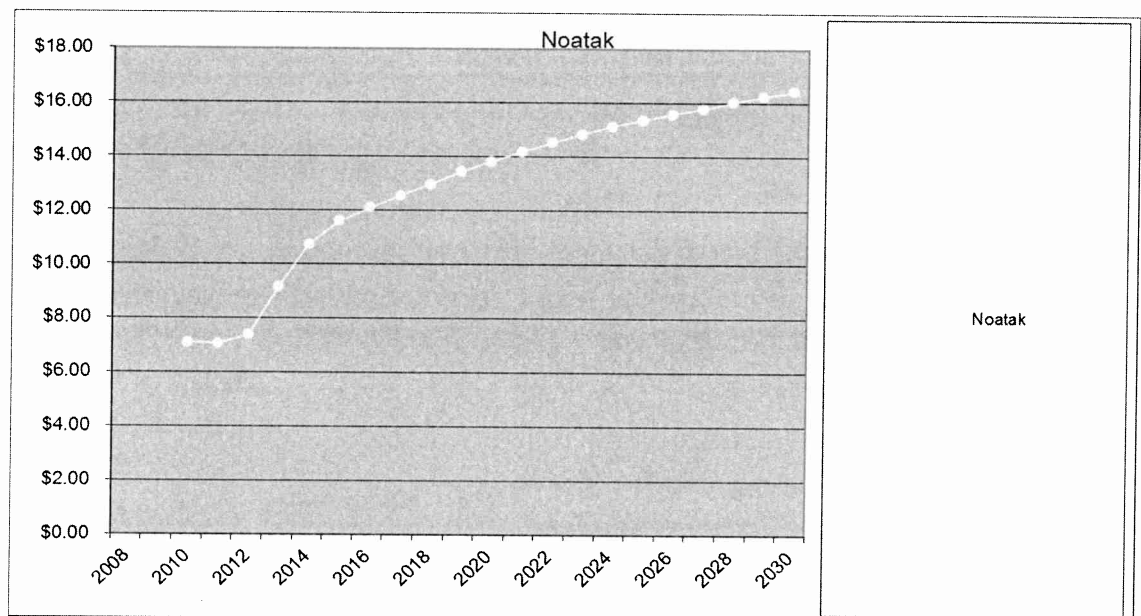
### Context & Need

No roads lead to Noatak and the community relies on the river for transportation all year round. Noatak has been without barge service for years, due to low water conditions in the river. Thus air-transport is the only current viable form of transportation for fuel, consumer durables, and construction materials

Transport by aircraft is expensive but it is the only way to bring bulk loads of fuel and consumer durables into

the village. In winter, the river provides an ice road inland to the mountains for hunting and downriver for travel by snow machine to Kotzebue and DMTS. This geographic isolation comes at a significant cost – Noatak

reportedly has the highest cost of living in the nation.



A road connecting Noatak with the DMTS has been the object of several feasibility studies and planning efforts. Refer to attached map for road corridor lay-out. To date, however, there appears to be lack of consensus from ADOT/PF on such a road<sup>1</sup> as a state sponsored priority.

<sup>1</sup> In 2004, ADOT/PF undertook a feasibility study for construction of a road linking the DTMS road to the village of Noatak and construction of a new airstrip at Noatak that could accommodate cargo aircraft. The work was proposed in response to frequent flight restrictions at the Red Dog Mine airport due to weather conditions. Subsequent to the completion of ADOT/PF's design and feasibility study for the Noatak road, Teck Cominco upgraded its airport runway and ILS, obviating the need for a transportation alternative (Anderson 2007). Nonetheless, ADOT/PF decided to relocate and reconstruct the Noatak airstrip because the existing strip had been damaged by erosion. Federal funds were used for the reconstruction. The airstrip location will allow for extending the runway to 5,000 feet. (McKinnon 2005). The road from Noatak to the DMTS was reviewed by ADOT/PF and determined to be feasible, but not of significant enough benefit to warrant a priority for state funding (Anderson

Upon completion of ADOT's 2004 Feasibility Study, NWALT and other regional stakeholders have requested state and federal officials to fund design and construction of a road corridor to the DMTS road. As of January 2012, there has been no funding secured and minimal demonstrable progress for road development. The time has come to develop alternatives due to heightened and imminent risk of fuel cost escalation and imminent negative impact on the community of Noatak.

According to the University of Alaska's Institute of Social and Economic Research's (ISER) Fuel Forecast, the cost of delivered fuel (non-retail) is projected to increase exponentially for the community of Noatak. This is largely due to the community's isolation and lack of logistics' alternatives. The ISER data highlights that Noatak has one of the the highest delivered cost of fuel of any community in Alaska. The anticipated increase in fuel prices is precipitating alternative and creative means of addressing Noatak's cost of energy crisis. While Figure 2 highlights projected future fuel prices forecasts, the residents of Noatak are currently paying in excess of \$10/gallon (retail) for fuel and reportedly has the highest cost of living anywhere in the United States.

In response to the anticipated future spike in fuel prices, team members performed an energy option analysis for Noatak. One of Noatak's leading cost of energy reduction tactics is to systematically address the fuel supply logistics chain.

In particular, the assessment team asserted that economies of scale and supply chain efficiencies can be secured if fuel can be delivered to the DMTS Port, transported to a transition point along the DMTS road via traditional trucking, and then transitioned to Noatak via an Arctic Grade Snow Track tractor with sled for the remaining 20-30 mile corridor. The final off-road corridor would be overland.

#### **Current Fuel Delivery System**

Noatak is entirely dependent upon air delivery for all fuel, cargo, durable goods, and construction materials. AVEC currently charters flights capable of delivering fuel from Anchorage or from Kotzebue for their power plants. Likewise, the Native Village of Noatak and the NW Arctic Borough School district charters flights from Anchorage or Kotzebue for heating fuel delivery. Air delivery of fuel can be done year round. Teck-Red Dog Mine has also provided heating fuel to the community through a small scale winter haul system<sup>2</sup>.

#### **Proposed Fuel Delivery System**

There needs to be a fundamental shift in how fuel is supplied to Noatak. Fortunately, there are economic options available due to relatively close access to the DMTS road system.

Conceptually, the proposed fuel supply chain will entail the following steps.

---

2007). NANA and Noatak have sought a capital budget appropriations from both the Federal and State level dating back to 2007. As of 2012, no funding has been secured.

<sup>2</sup> The heating fuel that Red Dog mine provides does not fall under the State's heating assistance program because the fuel is not being sold by the Native Village of Noatak.

1. **Sub-contract with the Red Dog Mine Fuel Supplier.** Currently, the Red Dog Mine delivers all of their fuel to the DMTS port facility. Through large quantity purchasing power, the Red Dog Mine Port is able to achieve cost savings.

The fuel supplier ships the fuel to the port facility via ocean going barge between July-September of each year. The fuel is transferred from the barge to port site fuel tanks for transport up to the mine or for port operations and stored throughout the year. Initially, the Native Village of Noatak would enter into a storage agreement for their fuel at the port site. The Native Village of Noatak would achieve benefits through Red Dog mine's purchasing power.

2. **Fuel Transport from DMTS Port Facility to mine along DMTS road.** Once the fuel is delivered to the DMTS port, fuel is transported along the DMTS road up to the mine.

The Native Village of Noatak's fuel would need to be stored at the DMTS port facility until sufficient snow cover snow-cover and tundra stability is sufficient for ground transport.

Currently, a NANA owned company is responsible for the trucked fuel haul between the port site and mine operations. The proposed system would transfer fuel at either road alternatives 1, 2, or 3 as found in Figure 2 along the DMTS road system. In future phases, the development team would design and build a fuel storage depot for intermediate storage.

Coordination would need to occur between the DMTS fuel delivery system and the NWFHLS Project.





3. **Fuel Transport to the Native Village of Noatak.** The Native Village of Noatak fuel would be transported via a 20-30 winter road via an Arctic Snow Tractor and Sled System- as shown in the photo. This haul system would need to be reviewed by appropriate regulators, permitted, and reviewed for any health and safety issues. NANA Lynden<sup>3</sup> would play a critical role in making sure this fuel haul system is operated in conformity with current fuel logistics regulations. Most Arctic Snow Tractors travel from 10-12 mph- approximately a 2 hour trip one way from the three proposed transportation corridors. We are currently estimating up to 3-5000 gallons of fuel transported with each trip.

Figure 2: DMTS Road Access Points

Alaska Department of Transportation and Public Facilities  
DeLong Mountain Transportation System

#### Noatak Road and Airport

## Project Overview

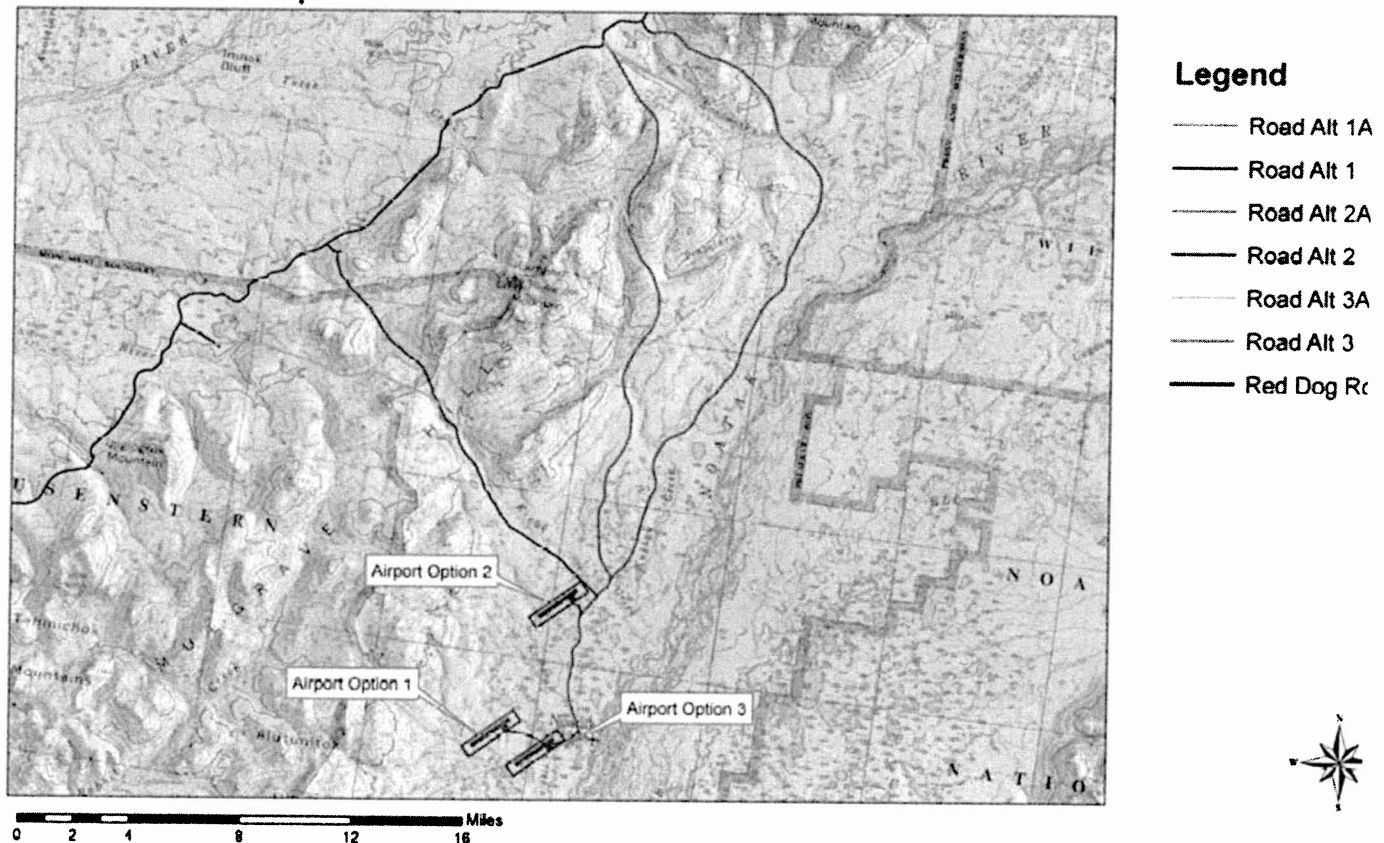


Figure 2: DMTS-Noatak Road alternatives

<sup>3</sup> NANA Lynden is a current Teck- Red Dog Mine contractor, transporting fuel between the Port and the mine.

Once the fuel has arrived in Noatak, it would be managed in the same manner as the status quo. Fuel for power generation, would be managed by AVEC; heating fuel would be the responsibility of the school for their facilities; and the Native Village of Noatak would be responsible for retail fuel sales. In the future, separate contracts would be developed for cargo and other durables.

The annual fuel demand in Noatak is estimated to be 350-400,000 gallons annually for both heating, power generation, and vehicular travel purposes. The proposed fuel haul system could transport up to 3-5000 gallons of fuel with each trip. With one tractor, it would require up to 200 round trips to meet annual fuel demand, resulting in 3-5 jobs created during the winter months (the system would be dormant in the summer months).

#### **Project Benefits**

The system as conceptualized has multiple benefits to regional stakeholders and Noatak residents, including:

- ***Economic Security.*** Currently, fuel expenditures are being lost to external fuel suppliers/vendors. With this system, a portion of fuel expenditures will remain in the community and will promote the money multiplier effect.
- ***Cost of living-energy decrease.*** The proposed system has the potential to dramatically decrease the cost of energy in Noatak.
- ***Local job creation.*** 3-5 local jobs would be created with this fuel haul system.

#### **Entity Responsible for the Ongoing Operation and Maintenance of this Project.**

NANA Regional Corporation (NRC), Native Village of Noatak, Teck- Red Mine, and the NW Arctic Borough (NWAB) have teamed up to develop the NWFHLS Project. This team has worked collaboratively for many years with many successful projects to their credit. The current roles are as follows:

- ***Native Village of Noatak.*** Their role will be to support the development of the project, receive grant funding, and operate the fuel haul system.
- ***NANA Regional Corporation.*** NRC will work to provide logistical and planning support to the NWLHS Project. A NANA owned company—NANA Lynden—provides logistical services to the Red Dog Mine.
- ***Teck-Red Dog Mine.*** Assist with logistics, store fuel at the DMTS port site, and support with operations and maintenance.