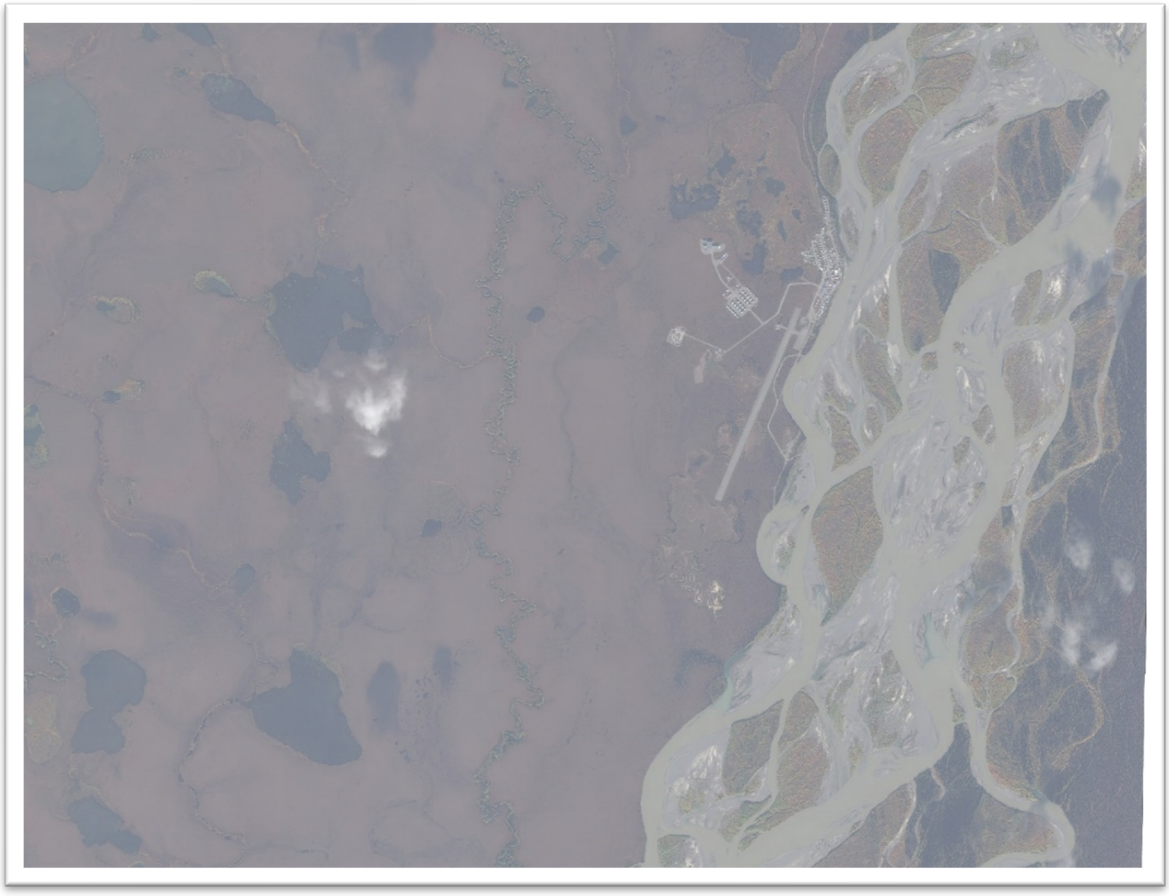
FAA
Alaska Region
Office of Airports

FINAL ENVIRONMENTAL ASSESSMENT

Noatak Airport Relocation
Project No. Z614780000



Rodney Clark, Deputy Director
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Alaska Region, Office of Airports
222 West 7th Avenue
Anchorage, Alaska 99513-7587
907.271.2851
August 7, 2024

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FINAL ENVIRONMENTAL ASSESSMENT
Noatak Airport Relocation

State Project Number: Z614780000

Prepared for:

United States Department of Transportation
Federal Aviation Administration
222 West 7th Avenue
Anchorage, Alaska 99513-7587

On behalf of the sponsor:

State of Alaska Department of Transportation & Public Facilities
Northern Region
2301 Peger Road
Fairbanks, Alaska 99709

The Environmental Assessment becomes a federal document when evaluated, signed, and dated by the Responsible FAA Official.

RODNEY E CLARK Digitally signed by RODNEY E CLARK
Date: 2024.08.07 11:10:41 -08'00'

August 7, 2024

Responsible FAA Official — Date

The following individuals may be contacted for additional information concerning this document:

Laura Sample Environmental Protection Specialist Federal Aviation Administration Alaska Region, Airports Division 222 W. 7th Avenue, MS #14 Anchorage, Alaska 99513 Telephone: (907) 271-5292	Kerri Martin Northern Region Environmental Manager State of Alaska Department of Transportation & Public Facilities 2301 Peger Road Fairbanks, Alaska 99709 Telephone: (907) 451-5289

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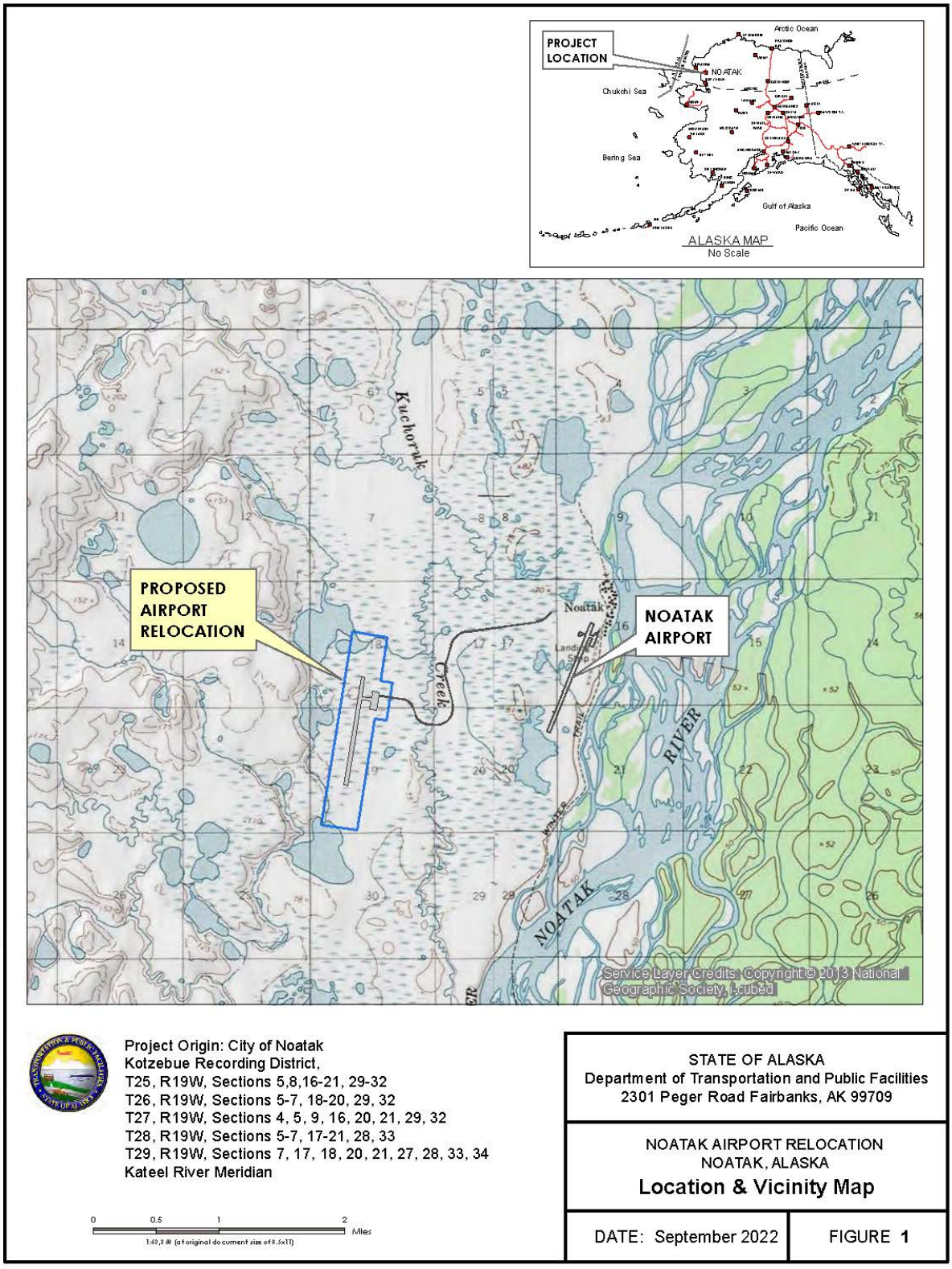
ACRONYMS

ADEC ..... Alaska Department of Environmental Conservation
ADF&G ..... Alaska Department of Fish and Game
ADNR ..... Alaska Department of Natural Resources
AHRS ..... Alaska Heritage Resources Survey
AKARNG ..... Alaska Air National Guard
APDES ..... Alaska Pollutant Discharge Elimination System
APE ..... Area of Potential Effect
BIA ..... Bureau of Indian Affairs
BLM ..... Bureau of Land Management
BMP ..... Best Management Practice
CFR ..... Code of Federal Regulations
CGP ..... Construction General Permit
CKNHL ..... Cape Krusenstern National Historic Landmark
CKNM ..... Cape Krusenstern National Monument
DMLW ..... Division of Mining Land and Water
DMTS ..... .DeLong Mountain Transportation System
DOT&PF ..... Alaska Department of Transportation and Public Facilities
DPS ..... Distinct Population Segment
EA ..... Environmental Assessment
EFH ..... Essential Fish Habitat
ESA ..... Endangered Species Act
FAA ..... Federal Aviation Administration
FSA ..... Federal Scout Armories
ft ..... . foot or feet
GHG ..... Greenhouse Gas
IPaC ..... Information for Planning and Consultation
IRA ..... Indian Reorganization Act
IWG ..... Interagency Working Group on Social Cost of Greenhouse Gases
MBTA ..... Migratory Bird Treaty Act
MMPA ..... Marine Mammal Protection Act
NAB ..... Northwest Arctic Borough
NEPA ..... National Environmental Policy Act
NLURA ..... Northern Land Use Research Alaska, LLC
NMFS ..... National Marine Fisheries Service
NPS ..... National Park Service
PFAS ..... per-and poly-fluoroalkyl substances
REC ..... recognized environmental condition
ROI ..... region of influence
SHPO ..... State Historic Preservation Officer
SREB ..... Snow Removal Equipment Building
SWPPP ..... Stormwater Pollution Prevention Plan
U.S. ..... United States
USACE ..... U.S. Army Corps of Engineers
USFWS ..... U.S. Fish and Wildlife Service
VEC ..... valued environmental component

1.0 INTRODUCTION

Noatak, Alaska is located 48 miles northwest of Kotzebue, 71 miles north of the Arctic Circle (Figure 1). Noatak is off the road system with transportation limited to air travel, snow machine, and small river boats. Regular barge service was suspended in 1986, and all freight and fuel are transported through the Noatak Airport. Noatak Airport was obligated under the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems, making it eligible for development under the FAA Airport Improvement Program. The current aircraft fleet mix serving Noatak consists primarily of the Cessna 208B and PA31 Piper Navajo, with larger deliveries made by DC-6 and C-130, and medevac services by Beechcraft 200.

Figure 1: Location and Vicinity Map



2.0 PROPOSED ACTION

The Proposed Action is to relocate the Noatak Airport including the following elements (Figures 2-6):

Airport

- Construct runway, taxiway, apron, lighting, a Snow Removal Equipment Building (SREB).
    - The runway and taxiway would be built to FAA standards for a category B-II airport capable of handling passenger and cargo aircraft and accommodate ground maneuvering larger aircraft such as DC-6 and C-130 that serve the airport unscheduled.
    - The apron area would be constructed for temporary loading of passengers and/or cargo as well as itinerant parking and access to lease lots.
    - Construct a building and pad capable of housing snow removal equipment and lighting/navigational controls.
    - Construct pads and install new and relocated navigational aids, and other airport related equipment and shelter(s).
- Relocate or demolish and reconstruct FAA-owned facilities for navigational aids, communications, and maintenance.
- Deobligate existing airport. Deobligation releases the existing airport from all existing FAA grant assurances identified during the asset recovery process and transfers the assurances' encumbrances to the new, relocated airport.
- Deactivate the existing airport. Deactivation closes the existing airport to all aircraft operations and removes FAA equipment that is not transferred to the new airport.

ROW

- Acquire approximately 323 acres of land for the relocated airport and access road through various temporary and permanent interests from federal, state, and private entities.
- Acquire temporary interest for approximately 160 acres for mobilization and haul roads during construction of the project.
- Dispose existing airport land and non-FAA infrastructure once the land is no longer required for airport use. Disposal of existing airport property will occur in accordance with Federal and State regulations and FAA grant assurance requirements.

- Three parcels of airport property, totaling 9.60 acres, are perpetual easements from NANA Regional Corporation (NANA) and will revert to NANA per the terms of the easements. It is likely these parcels will continue to see similar undeveloped use due to their location.
- The remaining 116.45 acres will either be transferred back to the Bureau of Land Management (BLM), per the terms of the deed, or if the reversionary clause is waived by both FAA and BLM, disposed of through a property sale at fair market value or transferred to a governmental agency for public use. FAA cannot reasonably foresee what use this land will have following disposal because the future landowner will not be known until after a record of decision has been issued.
    - If the reversionary clause is not waived, the land would return to BLM control, with no further involvement by either FAA or DOT&PF once the property transfer is complete. The property transfer process would be in accordance with FAA and BLM requirements.
    - If the reversionary clause is waived, DOT&PF would begin the land disposal process upon the conclusion of the NEPA process with the steps as follows:
        - Obtain approval from the FAA to dispose of Noatak Airport Tracts I-A, I-B, I-C, and I-D
        - Perform internal DOT&PF disposal review and receive appropriate approvals.
        - Complete land disposal in accordance with applicable Alaska Statues, Alaska Administrative Code, and FAA requirements.
        - After the new airport opens and any other conditions of the land transfer are complete, DOT&PF would record a commissioner's quitclaim deed finalizing the disposal of the old airport property.
        - Proceeds from the land disposal would be used to offset airport development costs.
- FAA approval of the Noatak Airport property (Tract 1, Parcel A) not reverting to federal government land when no longer needed for airport property purposes.
- FAA approval of the Noatak Airport property (Tract 1, Parcel B-D) reverting to NANA when no longer needed for airport property purposes, in accordance with terms of the perpetual easement.

- Upon the ultimate land disposal determination, the need for further environmental impact analysis to consider the potential environmental impacts for which the existing airport property and non-FAA infrastructure will be used will be assessed.

Access Road

- Construct a road from Noatak to the relocated airport, with a bridge crossing Kuchoruk Creek.
    - The road would be approximately 2 miles long and 24-feet (ft.) wide, with side slopes that include other safety features (e.g., signage) where required, and culverts would be installed to maintain drainage patterns.
    - A two-lane bridge would cross Kuchoruk Creek and be designed to accommodate high water and aufeis. Abutments would be placed on either side of the creek within the floodplain. Work may be required below ordinary high water of the creek, however no in-water work is anticipated.

Material Sources

- Develop local material sources and access.
    - Local gravels within the Noatak River drainage would be used for construction; excavation would be completed during low flow.
    - A pioneer material access road would accommodate safe summertime access and prevent damage to underlying soil hydrology.

Mobilization

- Transport material and equipment utilizing a combination of air, water, and overland access.
- Construct gravel pads for staging areas.

Utilities

- Extend existing community above-ground utility lines to the relocated airport. The new power poles would be placed in the right-of-way (ROW) of the new airport access road.
- Mitigate loss of existing fuel transfer system due to decommissioning the existing airport by constructing pads for relocated fuel transfer and storage.

Connected Action

- A new community provided fuel transfer system would be required (Figure 7). Bulk fuel storage is not planned on the new airport property.
- Contaminant remediation on existing airport lease lots would be required by responsible lessees.

Airport Layout Plan

- FAA conditional approval of the Noatak Airport Layout Plan.

Figure 2: Proposed Action

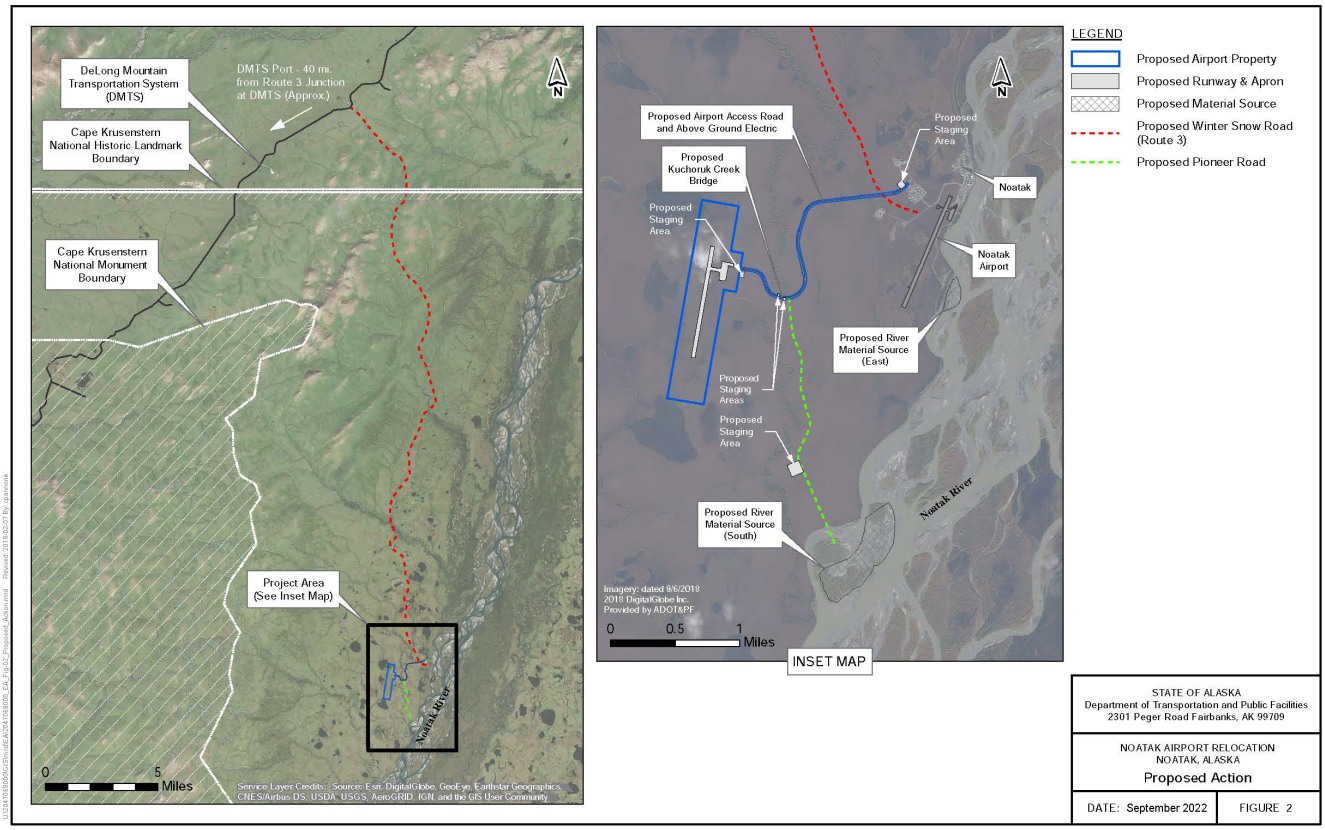


Figure 3: Proposed Action Site Plan

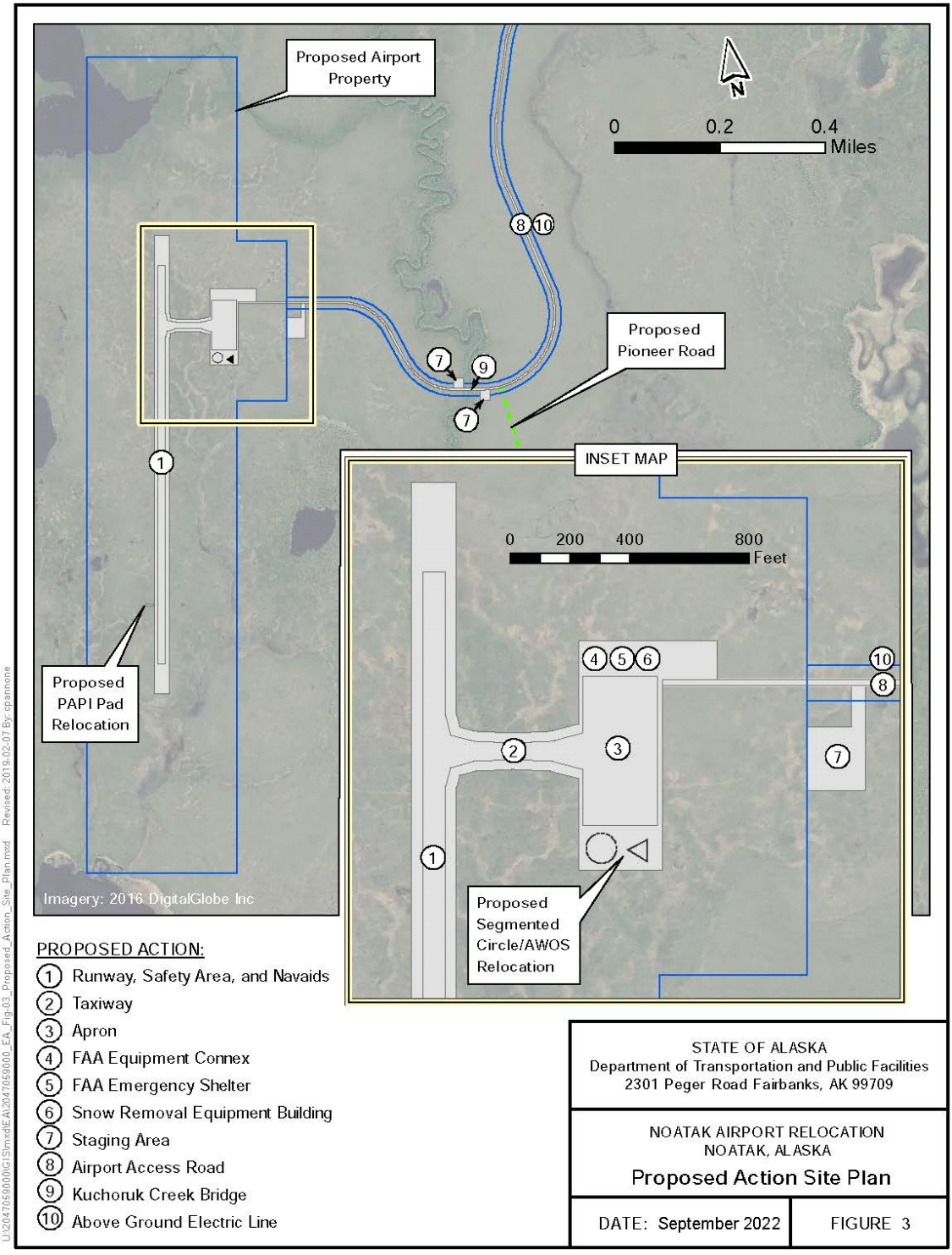


Figure 4: Airport Typical Sections

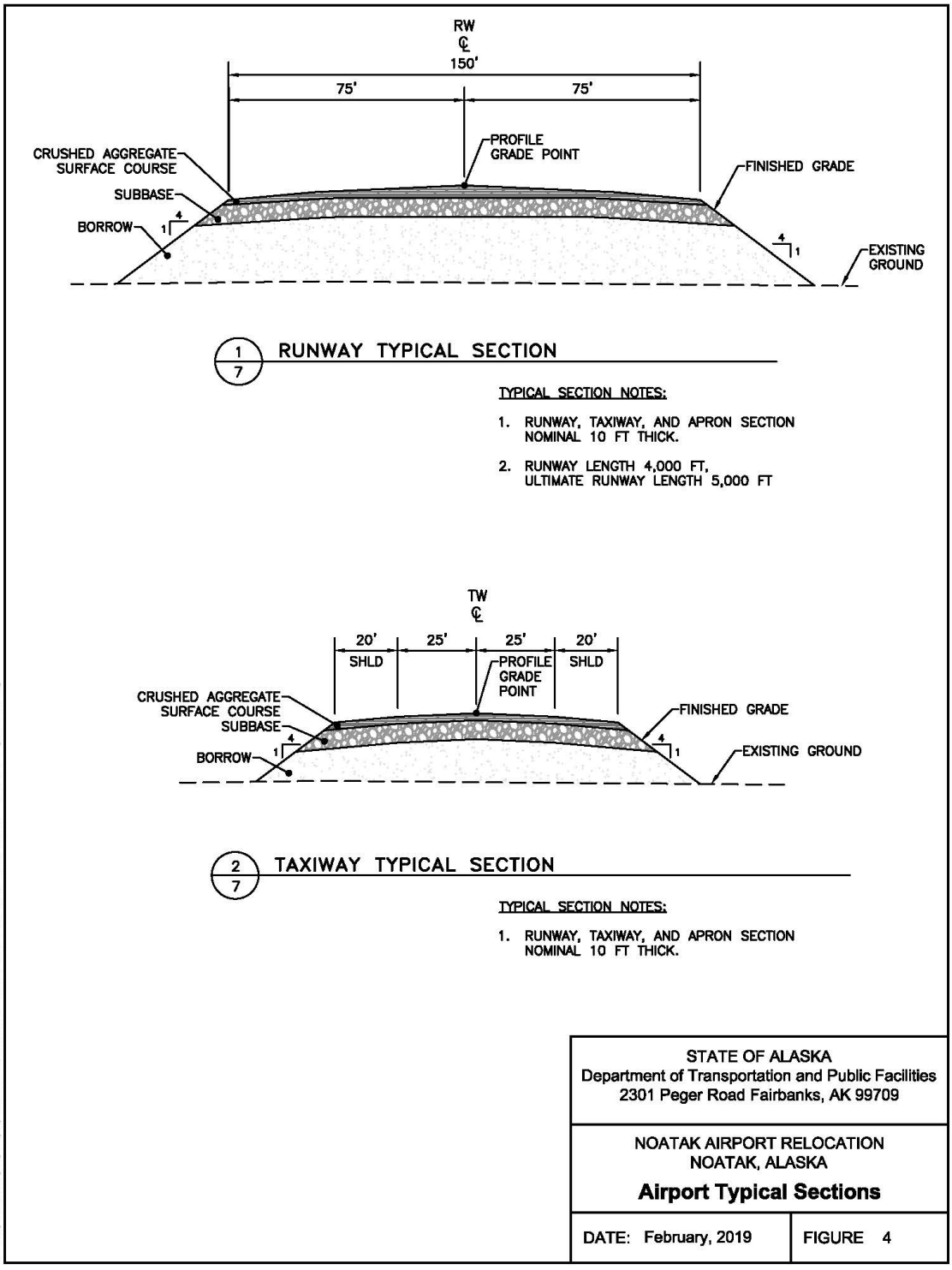


Figure 5: Airport/Road Typical Sections

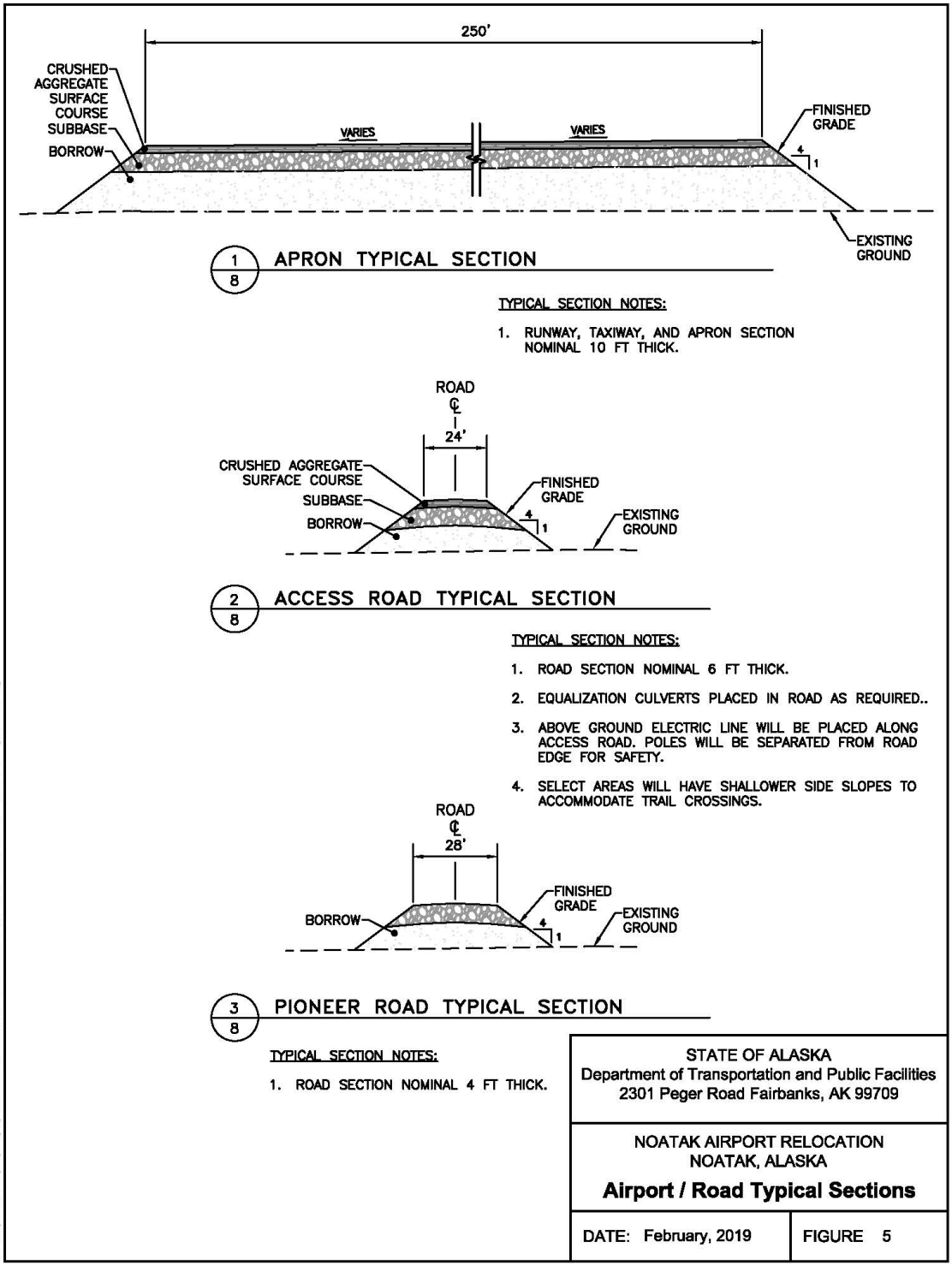


Figure 6: Bridge Concept

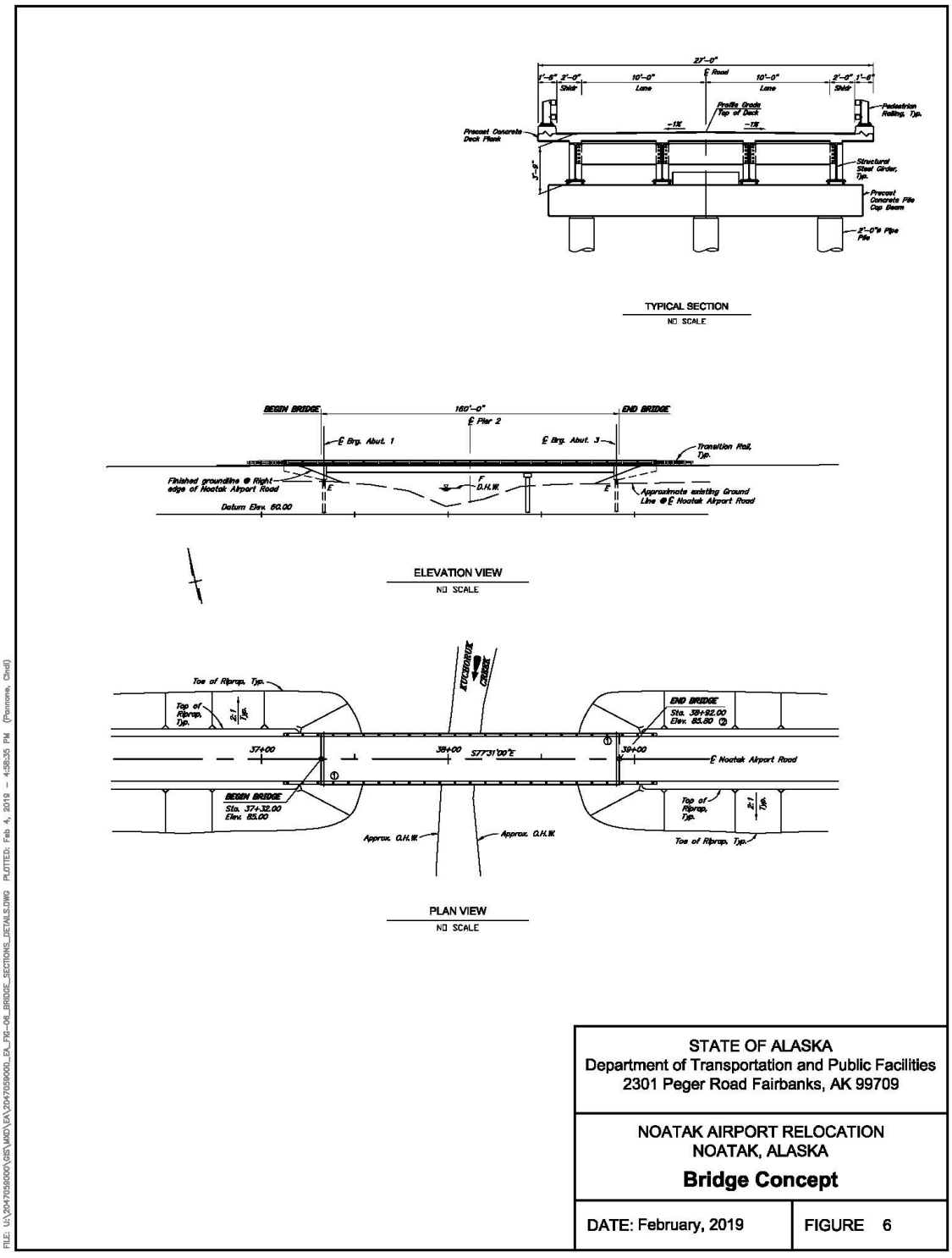
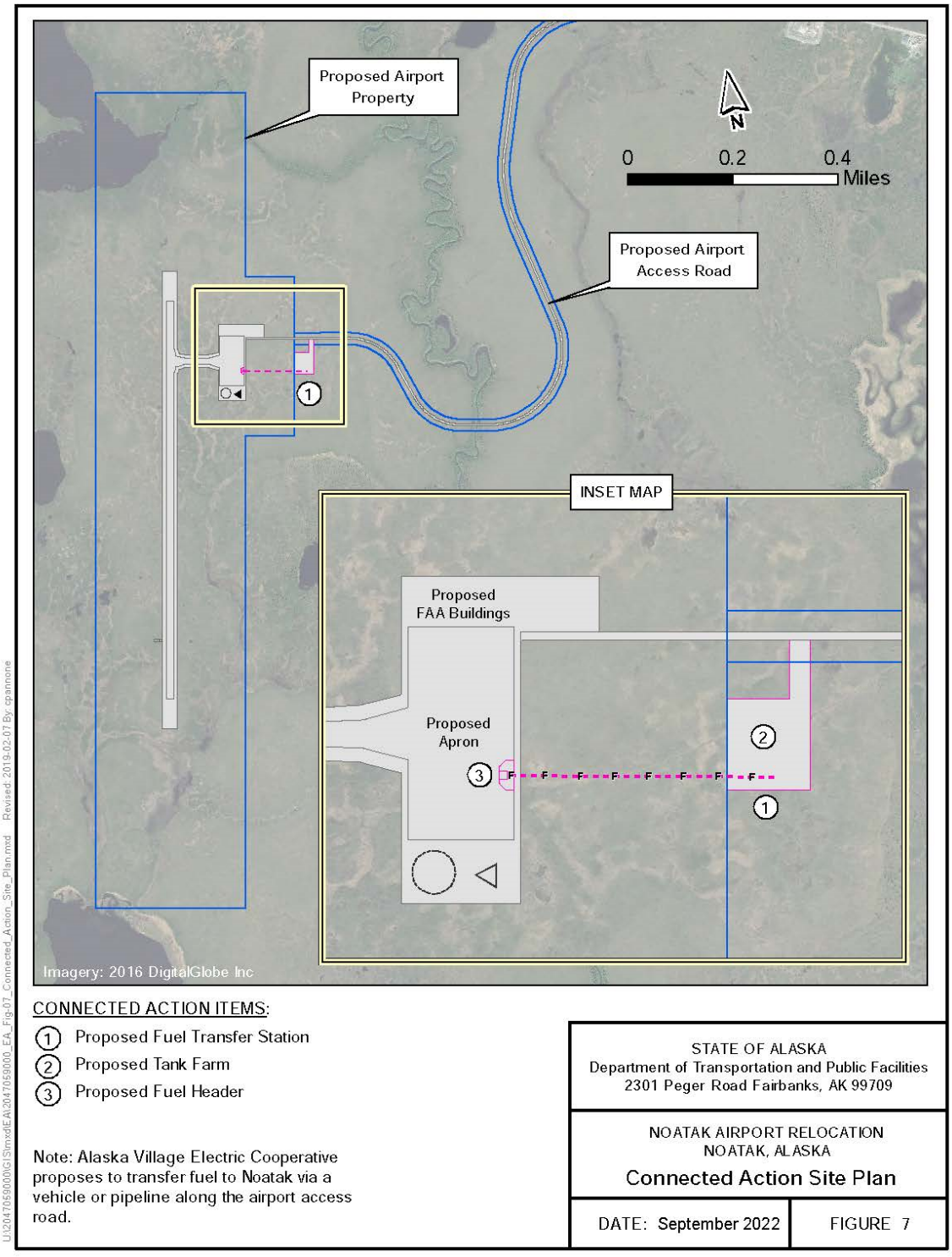


Figure 7: Connected Action Site Plan



3.0 PURPOSE AND NEED

In 2016 DOT&PF assessed the needs of the Noatak Airport and its ability to safely serve the community of Noatak and identified deficiencies, which are fully described below. To address the deficiencies and ensure safe operation of the airport, the DOT&PF pursued FAA Airport Improvement Program (AIP) funding. The airport is located near the Noatak River, which has seen accelerated riverbank erosion towards the airport property in recent decades. Studies and analysis assessing Noatak Riverbank Erosion were conducted in 2003, 2013 and 2015 (Appendix B) and concluded that Noatak Riverbank erosion will continue for the foreseeable future. While exact erosion timelines are difficult to predict with accuracy, continued erosion is a virtual certainty. The continued erosion jeopardizes the existing airport and therefore also jeopardizes the Noatak community which relies on safe and reliable air transportation service.

Further investment to maintain and repair existing airport infrastructure could be compromised, as the airport itself is threatened by the river erosion. Countering erosion with a revetment structure was not seen to the practicable due to the difficulty in sourcing material for such a structure (large aggregate or concrete in large quantities), concerns over long-term stability of such structure, and the continued maintenance it would require. Time critical airport relocation would ensure continued safe and reliable air transportation for Noatak. The purpose of the proposed project is to mitigate the threat of loss of runway infrastructure due to river erosion. In addition, the community would be provided with adequate access, supporting the community's long-term development goals and meeting current FAA design standards (FAA AC 150-5300-13). The project purpose would also provide an airport that supports the community's transportation needs in a safe manner to and from the airport. Additionally, the runway length needs to be sufficient to maintain the current level of regional cargo aircraft service currently available to the community (Appendix A).

Noatak River Erosion - More than 1,000 ft. of land has eroded between the runway and the river, forcing relocation of the cemetery, sewage lagoon, and access road to a gravel source. Less than 300 ft. of land remain (USKH, 2013; DOT&PF, 2015; Figures 8-9; Appendix B).

Existing Airport Deficiencies - Current airport design is based on use by the Cessna 208B and PA31 Piper Navajo. However, Noatak is an isolated and remote community requiring service by large cargo aircraft such as the Cessna 408, CASA C-212, Douglas DC-6, and Boeing L-100 L-100/L-382, and medevac aircraft such as the Beechcraft 200. The aircraft parking apron is undersized for these larger aircraft. The width of the runway and the runway safety areas are below standard for the design aircraft. The community's proximity to the airport creates health and safety concerns regarding dust control. Incompatible adjacent land uses include proximity (less than 5,000 ft.) of the runway to the community

landfill, sewage lagoon, and bulk fuel storage. In addition, the airport lighting, segmented circle, wind cone, and SREB are in need of replacement, and the airport surface requires rehabilitation.

Figure 8: Photographs of River Bank Erosion

1959 Aerial Photograph

2003 Aerial Photograph

Note: Observation of bank erosion between the river and apron from 1959 to 2003.

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Photographs of River Bank Erosion

DATE: September 2022 | FIGURE 8

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Figure 9a: Noatak River Bank Erosion

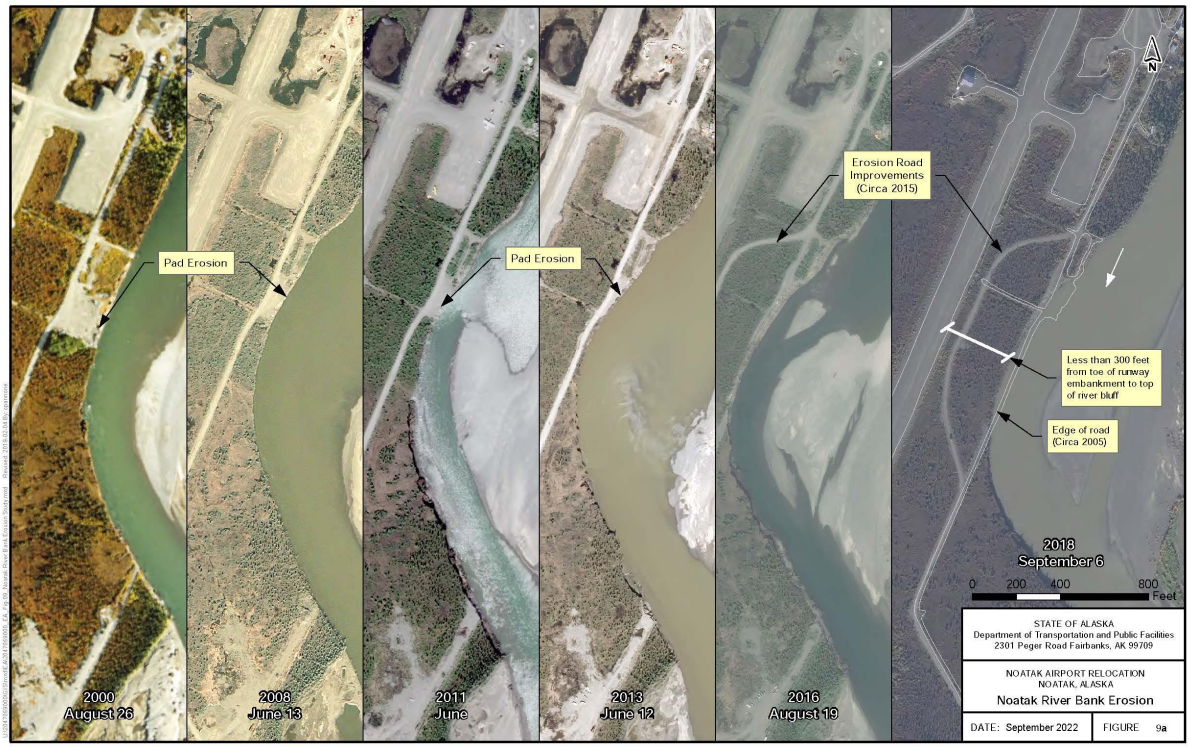
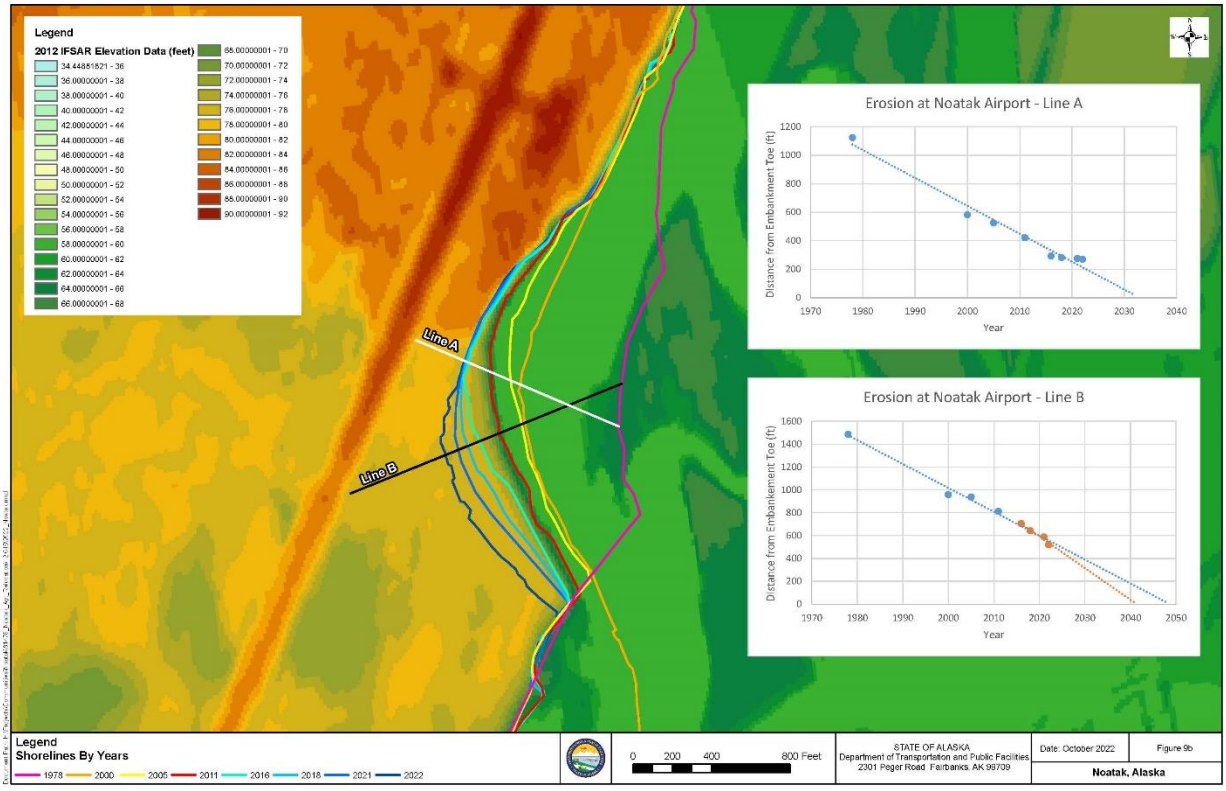


Figure 9b: Noatak River Bank Erosion



4.0 SCOPE OF ENVIRONMENTAL ANALYSIS

This EA considers relevant environmental resources which are the ecosystems, and human communities of concern that could be affected by the Proposed Action. The environmental resources evaluated in this EA are identified in Chapter 9.0. The scope of this EA includes the geographic area potentially influenced by the Proposed Action as well as the area of potential environmental effect, which varies by resource. The main study area encompasses the current Noatak Airport area, the proposed Noatak Airport relocation area, access road, material sources, and mobilization routes. However, such as for climate change, air quality, and socioeconomic impacts, the study area expands to a regional area. The geographic scope for each resource area is identified in Chapter 9.0 within the discussion for each resource topic.

5.0 REGULATORY FRAMEWORK

The FAA is guided by relevant statutes (and their implementing regulations) and executive orders (EOs) that established standards and provide guidance on environmental compliance, including natural and cultural resources management and planning in support of their mission to provide the safest, most efficient aerospace system in the world. The FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, provides FAA's agency-wide policies and procedures to ensure agency compliance with the requirements set forth in the CEQ Regulations for implementing NEPA. In addition to FAA Order 1050.1F, there are other NEPA-implementing policies and procedures that may be applicable to your proposal, including FAA Order 5050.4B, NEPA Implementing Instructions for Airport Actions. Other major statutes and EOs that apply to the Proposed Actions are as follows:

- Archaeological Resources Protection Act of 1979 (16 U.S.C. §§ 470aa–470mm)
- Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668–668c) • CAA (42 U.S.C. §§ 7401–7671q)
- Clean Water Act (CWA), Sections 401, 402, and 404 (33 U.S.C. §§ 1251–1387)
- CEQ (Council on Environmental Quality). 2023. National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change. 88 FR 1196. Interim Guidance. January 2023.
- Endangered Species Act (16 U.S.C. §§ 1531–1544)
- EO 11514 as amended by EO 11991, Protection and Enhancement of Environmental Quality
- EO 11593, Protection and Enhancement of the Cultural Environment

- EO 11988, Floodplain Protection
- EO 11990, Protection of Wetlands
- EO 12088, Federal Compliance with Pollution Control Standards
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- EO 13985, Executive Order on Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government
- EO 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risks
- EO 13175, Consultation and Coordination with Indian Tribal Governments
- EO 13834, Efficient Federal Operations
- Migratory Bird Treaty Act (16 U.S.C. §§ 703–712)
- National Historic Preservation Act of 1966 (54 U.S.C. § 300101)
- Pollution Prevention Act of 1990 (42 U.S.C. §§ 13101–13109)

6.0 DECISION TO BE MADE

The Federal Action requested of the FAA Alaska Region, Airports Division by the DOT&PF is to participate in the funding of the Noatak Airport relocation under FAA's Airport Improvement Program, deobligate, deactivate, and dispose the old airport land, and approve the new airport's Airport Layout Plan. There are no proposed modifications to FAA Design Standards (AC 150-5300-13B) included in this project.

7.0 SCREENING CRITERIA

In compliance with the FAA and CEQ regulations implementing NEPA, the FAA must consider reasonable alternatives to the Proposed Action. Only those alternatives determined to be reasonable relative to their ability to fulfill the purpose and need for the Proposed Action warrant detailed analysis. To be considered reasonable, an alternative must fulfill the purpose and need for the action, as well as be technically and fiscally feasible. This section presents the criteria used to determine whether alternatives were considered to be reasonable and, therefore, should be carried forward for analysis.

The FAA and DOT&PF established 4 screening criteria to identify appropriate alternatives to meet the purpose and need of the Proposed Action:

- **Screening Criterion 1:** Relocate the Noatak Airport to a location that meets FAA airport design standards in AC 150/5300-13B while maintaining a reasonably accessible location to the Noatak community, and a sufficient distance away from anticipated Noatak River erosion.
- **Screening Criterion 2:** Provide a suitable grade material with sufficient quantity for the Noatak Airport relocation construction from a material source with a short haul distance to the new airport location.
- **Screening Criterion 3:** Provide a feasible transportation route for equipment and material mobilization to Noatak. Feasible routes would need to be cost effective for the scale of the project and provide reasonable assurance that the route could be used within the project timeline.
- **Screening Criterion 4:** Minimize environmental impacts by avoiding or mitigating environmental resources to the greatest extent practicable.

8.0 ALTERNATIVES

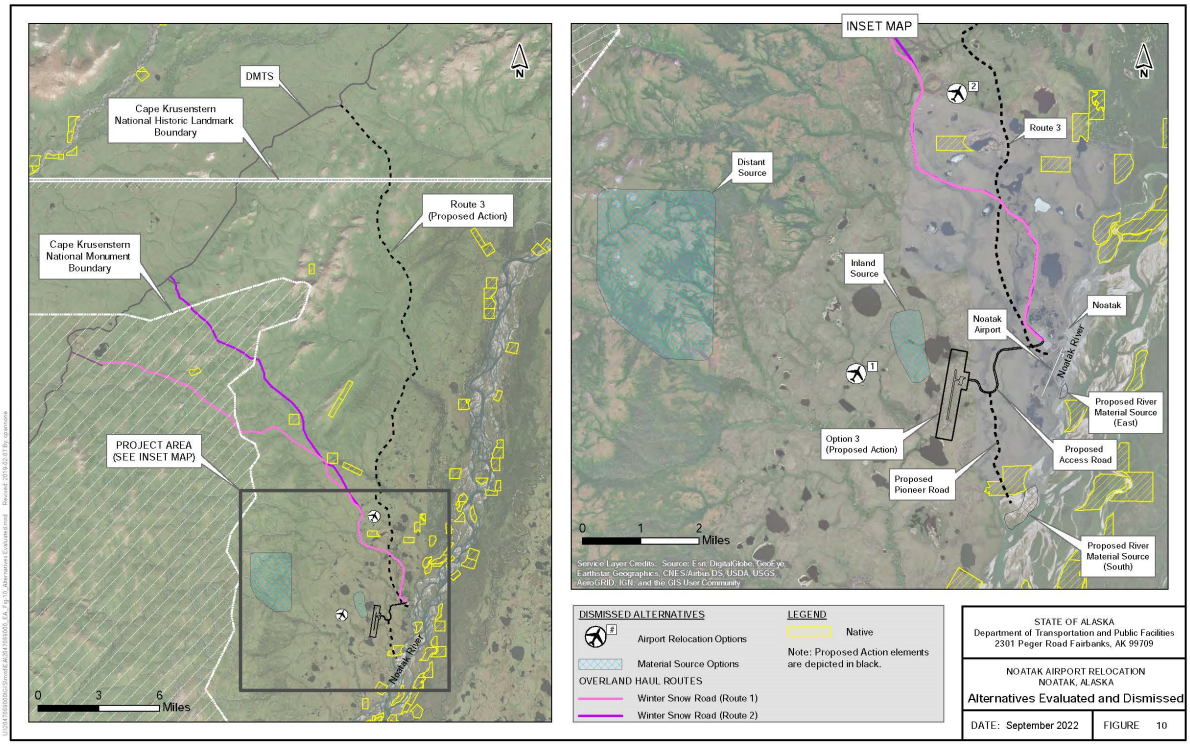
This section provides proposed alternatives evaluated for the airport relocation, material sources, and equipment and material mobilization. New airport locations were evaluated, and subsequently material sources and mobilization alternatives were evaluated.

For over a decade, Alaska Department of Transportation and Public Facilities (DOT&PF) Northern Region, the community of Noatak, and the Northwest Arctic Borough (NAB) have evaluated the feasibility of various new airport locations, mobilization routes, and material source locations that would allow for continued safe and reliable air transportation (Appendix C, Noatak Road and Airport-Project Information).

Alternatives to improve the existing airport in the current location were considered but dismissed because river erosion will continue to threaten the entire airport. While installing erosion control along the riverbank may provide temporary protection to the existing airport, several previous community attempts at riverbank protection have been unsuccessful. In addition, remedying deficiencies at the existing airport is not feasible at its current location. Therefore, all feasible alternatives would require relocation of the Noatak Airport. A detailed discussion of all evaluated airport sites considered during the airport site selection process is included in Appendix C (Noatak Airport Relocation – Airport Site Selection). Major factors evaluated during airport site selection include wind analysis, geotechnical and drainage

considerations, proximity to Noatak, compatible land use, land ownership, approach and Part 77 obstructions, development costs, and environmental consequences. Alternatives considered feasible and/or preferred in Appendix C (Noatak Airport Relocation – Airport Site Selection) are carried forward for further evaluation and are shown on Figure 10 and summarized in Table 1 below.

Figure 10: Alternatives Evaluated and Dismissed



8.1 Proposed Action Alternative

The Proposed Action alternative relocates the airport by creating a safe, reliable, and cost-effective air transportation facility that provides the community with adequate road access, supports the community's long-term development goals and is consistent with current FAA safety regulations.

The Proposed Action includes the following features:

- Airport Relocation Option 3.
- Material Source Options: River Material Sources (South and East) with overland access roads.
- Equipment and Material Mobilization Route 3.

Section 9.14 includes a list of permits and authorizations that will be obtained for the Proposed Action prior to construction to comply with applicable federal, state, and local regulations.

8.2 No Action Alternative

No airport improvements would occur under this alternative. All the existing deficiencies would remain present at the airport. This alternative would not bring the Noatak Airport into compliance with FAA safety guidelines, and the airport would remain vulnerable to erosion by the Noatak River. The 2013 Noatak Riverbank Erosion Assessment (USKH [Stantec]; Appendix B) previously estimated erosion would extend into the apron by 2010 and into the runway by 2020. While predicted erosion has not occurred to this extent to-date, erosion continues to cause Noatak Riverbank loss and will soon impact the runway, requiring airport closure that would result in loss of commercial, passenger, medevac, and cargo air services.

Table 1. Alternatives Evaluated

Alternative	Description	Alternative Evaluation
Airport Relocation		
Option 1	Relocate the airport 4 miles west of Noatak and require an approximate 4-mile access road and a bridge across Kuchoruk Creek.	This alternative is dismissed from further evaluation as it would require a 2-mile longer access road than Option 3, requiring approximately 31 acres more ground disturbance in the forms of embankment fill and material source than the Proposed Action. This option did not meet Screening Criterion 1 due to travel distance on off road vehicles in adverse weather conditions, and Screening Criterion 4 due to greater environmental impacts, compared to other options.
Option 2	Relocate the airport 5 miles northwest of Noatak and require a 5-mile access road.	This alternative is dismissed from further evaluation as it would require a 3-mile longer access road than Option 3, requiring approximately 47 acres more ground disturbance in the form of embankment fill and material source than the Proposed Action. This option did not meet Screening Criterion 1 due to travel distance on off road vehicles in adverse weather conditions, and Screening Criterion 4 due to greater environmental impacts, compared to other options.
Option 3	Relocate the airport 2 miles west of Noatak and require an approximate 2-mile access road and a bridge across Kuchoruk Creek.	This alternative is considered feasible and is incorporated in the Proposed Action. This option meets Screening Criterion 1 since the location is not subject to Noatak River erosion, and meets Screening Criterion 4 allows for the shortest access road to the new airport thus minimizing environmental impacts, compared to other options.
Option 4	Relocate the airport to the east side of Kuchoruk Creek.	This site is favorable due to the shorter access road and no bridge required over Kuchoruk Creek, which reduces cost and direct environmental impacts. However, this option does not meet Screening Criterion 2 and **this alternative is**

Alternative	Description	Alternative Evaluation
		dismissed from further evaluation because the geotechnical investigation indicates higher degrees of ice rich permafrost than the surrounding areas. The close proximity to Kuchoruk Creek is likely to cause an increased risk of thaw-instability in the embankment. The site is further constrained to the east, which would require the apron and taxiway be built on fill over existing drainage. This site is within 5000 feet of the community land fill, which does not meet separation distances from wildlife attractants per AC 150/5200-33C.
Option 5	Relocate the airport approximately 1 mile west of Site 3 along a ridgeline.	This site overlaps with one the 2006 geotechnical investigation as a potential material source, however option does not meet Screening Criterion 2 and is **dismissed from further evaluation** because the investigation showed thaw unstable permafrost. The topography of this site has more variation, which would require substantially more fill material, or cutting into existing ground (which increases the risk of causing thaw-unstable conditions in the embankment). This site is also farther from the community, requiring a longer access road which does not meet Screening Criterion 3. It also does not meet Screening Criterion 4 as it results in greater direct environmental impacts and greater logistical burden on the community to transport passengers, fuel, and cargo to and from the airport.
Material Sources		
South River Material Source	Located south of Noatak on a Noatak River gravel bar and contains fine-grained and course grade materials. Requires development of an approximately 2-mile-long access route.	This alternative is considered feasible and is incorporated in the Proposed Action. This option meets Screening Criterion 2 since the site provides suitable grade material available with a short haul distance to the new airport location compared to other river bars within the Noatak.
East River Material Source	Located just east of Noatak on a Noatak River gravel bar and contains fine-grained and course grade material. This source has an existing access route, has been used by the community in the past, and could provide supplemental material to construct the project.	This alternative is considered feasible and is incorporated in the Proposed Action. This option meets Screening Criterion 2 since the site is actively used and provides suitable grade material with the least haul distance to the new airport location compared to other river bars within the Noatak.
Inland Material Source	Located just north of the Proposed Action and contains fine-grained materials. Requires development of an approximately 2,000-ft long access route.	This alternative is dismissed from further evaluation **since it does not meet** Screening Criterion 2 as the available material is not of suitable grade material for project construction.
Distant Material Source	Located further inland, positioned to support airport relocation Options 1 or 2, and contains fine-grained and organic materials. Requires development of an approximately 4 miles long access route.	This alternative is dismissed from further evaluation as it is located 2 miles farther from the Proposed Action than the other material site alternatives, requiring a longer access route, and does not meet Screening

Alternative	Description	Alternative Evaluation
		Criterion 2 since it is not of suitable grade material for project construction.
Equipment and Material Mobilization		
These alternatives would provide overland access between Delong Mountain Transportation System (DMTS) Port Site and the Project Area via a winter snow road. Numerous routes were considered both inside and outside the Cape Krusenstern National Monument (CKNM) during preliminary analysis. Some routes were consolidated, and all routes were realigned slightly to provide the most feasible alignment. Alternative development and evaluation criteria include: overall route length from the port site, overland distance between DMTS and the project area, grades, channel crossings, vegetation impacts, community input, ROW considerations, and time needed to obtain authorizations. Presence of adequate snow depth would be required for winter route use therefore snow depth was not considered as an evaluation criterion.		
Route 1	This 42.3-mile route would traverse overland for 23.6 miles and follows the Noatak to Kivalina winter trail. The route crosses 9.5 miles of CKNM and 9.5 miles of Bureau of Land Management (BLM) lands. It is most similar to the route permitted by the National Park Service (NPS) in 2015 and is the most preferred by the community. This route would require a SF299-09b Transportation and Utility Systems Access permit from the NPS as well as temporary access easements from BLM. The route has a maximum grade of 10%, crosses 5 channels*, and traverses approximately 9 miles of forested, 6 miles of scrub shrub wetland, and 8 miles of emergent habitat**, some portion of which has been significantly disturbed by past community trail use.	The route is preferred by the community, has the shortest overall distance, and minimizes impacts to vegetation as it follows an existing winter trail for the majority of the route. However, this alternative is dismissed from further evaluation since it does not meet Screening Criterion 3 because there are other feasible alternatives that would be more cost effective for the scale of the project and provide reasonable assurance that the route could be used within the project timeline. Additionally, this route does not meet Screening Criterion 4 because other feasible alternatives would avoid impacting and traversing the CKNM, thereby reducing the time needed to obtain easement authorizations.
Route 2	This 47.7-mile route would traverse overland for 21.6 miles and is located north of the Route 1. The route crosses 4.5 miles of CKNM lands and 9.5 miles of BLM lands and is approved by the community as an alternative to Route 1. This route would require a SF299-09b Transportation and Utility Systems Access permit from the NPS as well as temporary access easements from BLM. The route has several short steep sections, an overall maximum grade of 21%, crosses 6 channels*, and traverses approximately 8 miles of forested, 7 miles of scrub shrub wetland, and 6 miles of emergent habitat**.	The route crosses the shortest distance within CKNM and is preferred by the community as an alternative to Route 1. However, this alternative is dismissed from further evaluation since it does not meet Screening Criterion 3 because there are other feasible alternatives that would be more cost effective for the scale of the project and provide reasonable assurance that the route could be used within the project timeline. Additionally, this route does not meet Screening Criterion 4 because other feasible alternatives would avoid impacting and traversing the CKNM, thereby reducing the time needed to obtain easement authorizations and the route requires traversing very steep grades.
Route 3	This 67.6-mile route would traverse overland for 28.2 miles and is located north of the Route 2 route. The route	This alternative is considered feasible and is incorporated as part of the Proposed Action **since it meets Screening Criterion 3 and 4 because** the route

Alternative	Description	Alternative Evaluation
	would use the DMTS road ROW through CKNM lands, and cross NANA, private, and state lands. This route would require temporary access easements from these private landowners. The route has an estimated maximum grade of 7.5%, crosses 5 channels*, and traverses approximately 1 mile of forested, 16 miles of scrub shrub wetland, and 11 miles of emergent habitat**.	is cost effective for the scale of the project and provides reasonable assurance that the route could be used within the project timeline and minimizes impacts to forested areas. Additionally, the route remains on an established, active transportation easement and facility across CKNM lands, has the lowest grades of all the alternatives, and would require the shortest estimated timeframe to receive temporary ROW use authorizations.
These remaining alternative mobilization routes from Kotzebue evaluate feasibility of mobilizing material.		
Noatak River Ice Road	This route would follow the Noatak River between Kotzebue and Noatak for approximately 75 miles during the winter months when the Noatak River is frozen. This route may include a combination of a river ice road and winter overland travel.	This alternative is dismissed from further evaluation **since it does not meet Screening Criterion 3 or 4 because it does not provide reliable access and does not minimize environmental impacts.** The alternative follows the Noatak River, a valuable subsistence and commercial resource for the surrounding communities. This alternative would pose a potential risk of impacting Noatak River fish and other resources if a contaminated spill, or equipment breaking through the ice road, occurred. Hauling equipment may also be unpredictably infeasible due to insufficient weather-related river ice conditions possibly precluding safe or timely mobilization to Noatak via an ice road.
Noatak River Barge	This route would barge equipment and material via the Noatak River to a privately held staging area 21 miles south of Noatak and then transport them overland to the project site. This alternative would require development of a barge landing, staging area, and overland hauling (winter).	This alternative is dismissed from further evaluation **since it does not meet Screening Criterion 3 because the Noatak River depths to not reliably support barging. Commercial barging to Noatak was suspending in 1986.** Additionally, this route does not meet Screening Criterion 4 **because it does not minimize environmental impacts.** The alternative would require in water work during community subsistence use periods and activities along the Noatak River and use of the few feasible overland routes between the staging area and project site would also add additional risks associated with water crossings along their routes.
Fly-in	This route would fly all equipment and materials into the existing Noatak airport from supply locations via aircraft. Equipment and material unavailable in Kotzebue would first be barged from other source ports to Kotzebue.	This alternative is dismissed from further evaluation **since it does not meet Screening Criterion 3 or 4 because it does not provide a cost-effective route for the scale of the project and does not minimize environmental impacts.** The alternative would require air freighting heavy equipment via multiple trips is not feasible. The aircraft required to facilitate such mobilization would not have reliable access to the airstrip due to strict landing condition requirements. In addition, fly-in mobilization would be prohibitively costly, as heavy equipment would need to be disassembled into multiple pieces, with each piece flown separately, and then reassembled in Noatak.

* Channel crossings are locations where a temporary ice bridge would be needed. For purposes of the alternatives analysis, it is assumed the remaining channel crossings would be frozen to the channel bottom and special crossing considerations would not be required.
** *Forested* includes areas of dense tree cover, *scrub shrub* includes areas of sparse tree and/or shrub cover, *emergent* includes areas of little to no shrub cover with visible open water ponds.

9.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the existing environment and environmental impacts to resource categories identified in FAA Orders 1050.1F and 5050.4B. A region of influence (ROI) is described for each resource area. The ROI varies among resources and defines the geographic extent of potential effects from the alternatives on the important elements of that resource. Each section in this chapter delineates its ROI and identifies the topics and resources addressed by that section.

Direct effects are caused by the action and occur when the action is implemented. Indirect effects of the action occur later in time or farther removed in distance. Connected actions are automatically triggered by another action, cannot or will not proceed unless another action occurs, and are interdependent parts of a larger action. Cumulative impacts result from incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes other actions.

The qualitative terms used to assess the anticipated impacts associated with each of the alternatives are defined as:

- **None** – No measurable impacts are expected to occur.
- **Less than Significant** – Adverse impacts are expected to occur; impacts would be noticeable and would have a less than significant effect on the resource.
- **Significant** – Adverse impacts are expected to occur; impacts would be obvious and would have serious consequences on the resource.

9.1 Past, Present, and Potential Future Actions

Projects considered during the cumulative impacts analysis include:

Past projects at Noatak over the past decade:

- K-12 School Replacement and Teacher Housing
- Delivery of fuel truck to Noatak via winter haul route from the DMTS

Current and reasonably foreseeable future projects at Noatak:

- Water and Sewer Distribution Upgrades
- Bulk Fuel Facility Relocation (includes new facility construction and demolition of existing facility)

- Generator Relocation
- Community Haul Road to Port Site
- Noatak West Cemetery Spur Road
- Community Road to the new Landfill, Bulk Fuel Facility, and Powerplant

9.2 Non-Issue Resource Categories

This Environmental Assessment (EA) is an issue-based EA, meaning that only resource categories that were identified as an issue through project development and agency and public involvement are evaluated in detail. Table 2 summarizes non-issue resource categories.

Table 2. Non-issue Resource Categories

Resource Category	Evaluation
Air Quality	• The Alaska Department of Environmental Conservation (ADEC) *Air Non-Point Mobile Source* website (ADEC, 2019a) indicated the proposed project is not in an air quality maintenance or non-attainment area for National Ambient Air Quality Standards. • No air quality analysis is needed because forecasted operations are less than 1.3 million passengers and less than 180,000 operations annually (FAA Order 5050.4B Desk Reference; FAA, 2007). • Noatak is a community with reported suspended particulate matter problems and has PM_{10} monitoring data (ADEC, 2019b). Relocating the airport would reduce air quality impacts from aviation operations near the community associated with wind-blown dust.
Coastal Resources	• The Alaska Coastal Management Program expired on June 11, 2011, and is no longer in effect. The *NAB Comprehensive Plan* (NAB, 1993) and the *Northwest Area Plan for State Lands* (ADNR, 2008) were evaluated to confirm no adverse coastal impacts would occur within the Study Area and the project is consistent with coastal resource management guidelines in these plans.
Farmlands	• There are no prime or unique farmlands in the Study Area, as defined by the Farmland Protection Policy Act of 1981, Public Law 97-98.
Natural Resources and Energy Supply	• Material extractions are not expected to impact area mineral mining that is taking place or would take place. • Fill material is required for construction. Adequate supplies are expected to be available through local sources. • The Proposed Action increases residents' fuel needs for ground travel to a new airport farther away from the community. • A new fuel transfer station would be needed at the new airport to replace the existing station at the current airport. The new fuel transfer station would distribute fuel by either a truck or pipeline. Due to funding limitations, it is anticipated a fuel trucking system would be used to distribute fuel. A proposed replacement fuel transfer station is addressed under “Connected Actions” below.

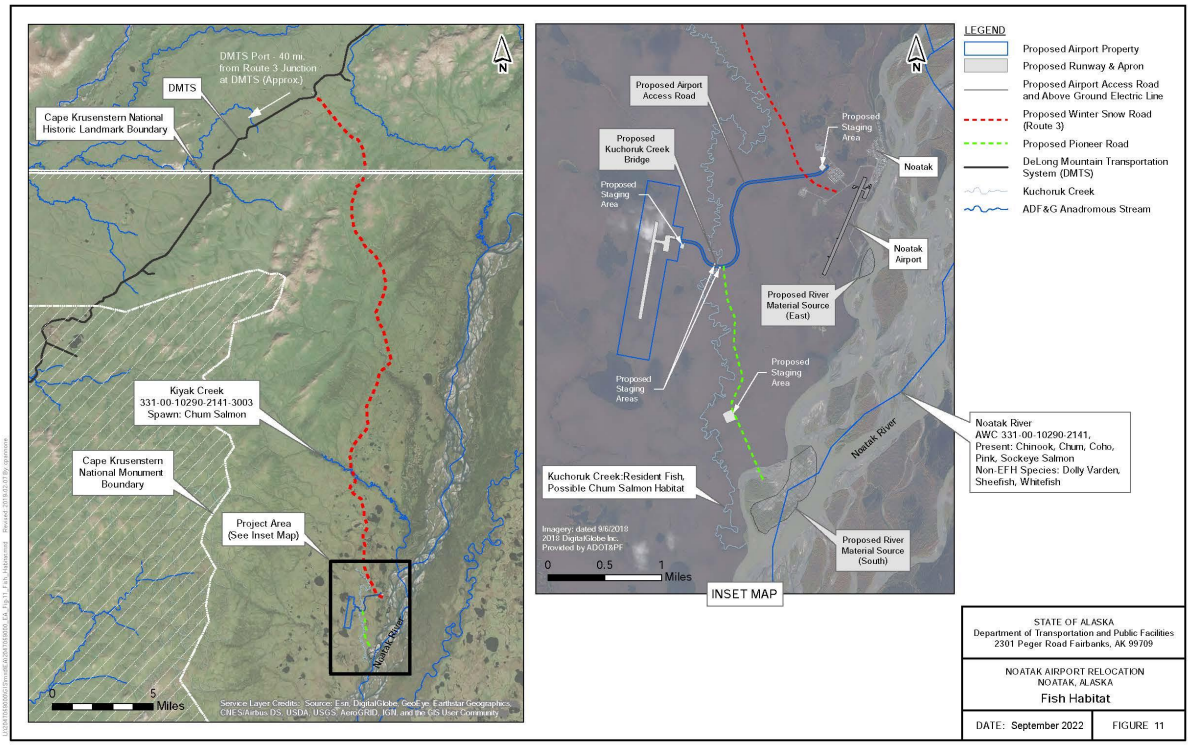
Resource Category	Evaluation
Noise and Noise-Compatible Land Use	• The Proposed Action is anticipated to significantly reduce aircraft noise to residential and other noise sensitive areas within Noatak. The existing airport is immediately adjacent and aligned with the main townsite. There are residential structures approximately 900-feet left of the departure end of Runway 1, as well as approximately 1,600-feet beyond, in-line with the runway. This configuration could place arriving and departing aircraft, if flying low approaches relative to the 20:1 clear surface, less than 100-feet above residential housing. • The relocated airport would place the anticipated Runway 18 end approximately 8,500 feet from the nearest noise-sensitive community infrastructure (School). Conventional air traffic pattern for non-towered airports would default to left-hand turns, and the downwind leg would be flown one-half to one mile parallel to the intended runway for landing at an altitude of 1,000 feet above ground. Traffic in pattern for the anticipated Runway 18 landing could be as close as 2,500 feet offset, and 1,000 feet above the school when navigating a conventional airport traffic pattern. Given the expected attenuation of noise, this could indicate 20 to 30 decibel reduction compared to the noise level expected during a low departure directly overhead from the existing runway. • Additionally, traffic at pattern altitude is expected to generate significantly less levels of noise than aircraft in a full-power takeoff, further reducing anticipated noise levels reaching noise-sensitive areas. • Development of straight-in instrument flight procedures may be evaluated by the FAA to accommodate the new runway. Similarly, the approaches for these would relocate traffic over a mile away from the residential housing and other community infrastructure, replacing traffic that is currently routed directly in-line and overhead these areas. • The airport access road is routed away from the community and there are no sensitive noise receivers or any planned community development around the airport access road. The new airport access road does not reconfigure the community's direction of travel from within Noatak to the proposed relocation site. • The proposed action would not result in an increase in aviation operations or a change in aircraft fleet mix. • Material haul routes, during construction, would be routed to avoid the community, where practicable. • No noise analysis is needed since the new airport would not accommodate Design Group I and II airplanes in Approach Categories A-D and operations would not exceed 90,000 annual propeller operations (FAA, 2020).

9.3 Biological Resources (Fish, Wildlife, and Plants)

9.3.1 Affected Environment

Fish: The Noatak River, adjacent to the community, is a listed anadromous fish stream (Alaska Department of Fish and Game [ADF&G], 331-00-10290) and Essential Fish Habitat (EFH) for: chum salmon (*Oncorhynchus keta*), Coho salmon (*O. kisutch*), Chinook salmon (*O. tshawytscha*), pink salmon (*O. gorbuscha*), and sockeye salmon (*O. nerka*) (ADF&G, 2017). Non-EFH species present are Dolly Varden (*Salvelinus malma*), sheefish (*Stenodus leucichthys)*, and several species of whitefish (*Coregonus nasus* and *pidschuan*) (ADF&G, 2017). Both proposed material sources are gravel bars within the Noatak River flood plain (Figure 11).

Figure 11: Fish Habitat



Kuchoruk Creek is neither listed as an anadromous stream nor has been surveyed by ADF&G, although communication with ADF&G indicated chum salmon are likely present (ADF&G, 2006). Bridging across Kuchoruk Creek would be required to access the airport from the community.

The DMTS Port, proposed for project mobilization, is located on the Chukchi Sea shoreline. EFH for all five species of Pacific salmon (see above), as well as for saffron cod (*Eleginus gracilis*) and arctic cod (*Boreogadus saida*), are present within that area of the Chukchi Sea (NOAA, 2018).

Kiyak Creek, a listed anadromous fish stream (ADF&G, 331-00-10290-2141-3003), is a tributary to the Noatak River and EFH for chum salmon (ADF&G, 2017). The proposed winter snow road would require crossing Kiyak Creek with an ice bridge.

Wildlife: Species of terrestrial mammals that periodically occur in the vicinity are: caribou (*Rangifer tarandus*), moose (*Alces alces*), brown bear (*Ursus arctos*), black bear (*Ursus americanus*), lynx (*Lynx canadensis*), grey wolf (*Canis lupus*), wolverines (*Gulo gulo*), arctic fox (*Alopex lagopus*), red fox (*Vulpes vulpes*), and muskoxen (*Ovibos moschatus*). These and common furbearers are important to hunters/trappers in the region for subsistence and their pelts are used for traditional Alaska Native crafts. Caribou and moose are important subsistence food resources for Noatak (ADF&G, 2007). The Western

Arctic Caribou Herd is the primary herd in northwestern Alaska. Caribou from this herd are present in the Noatak region from approximately September through June (CARMA, 2017).

Marine Mammals: Marine mammal species that can occur in the coastal waters near DMTS include: beluga whale (*Delphinapterus leucas*), gray whale (*Eschrichtius robustus*), bowhead whale (*Balaena mysticetus*), bearded seal (*Erignathus barbatus*), ringed seal (*Phoca hispida*), spotted seal (*Phoca largha*), and polar bear (*Ursus maritimus*).

Threatened and Endangered Species: The United States Fish and Wildlife Service (USFWS) *Information for Planning and Consultation* (IPaC; USFWS, 2017) list the threatened polar bear, spectacled eider (*Somateria fischeri*), and Steller's eider (*Polysticta stelleri*) as all potentially occurring in the project area. No designated critical habitats for any of these species are located within the project area (USFWS personal communication, 2018).

DMTS area Endangered Species Act (ESA) marine mammal species include: bowhead whale, bearded seal, and ringed seal. If project specific barging occurs for mobilization and de-mobilization or other purposes, additional ESA species could include the western Distinct Population Segment (DPS) Steller sea lions (*Eumetopias jubatus*), western North Pacific DPS humpback whales (*Megaptera novaeangliae*), Mexico DPS humpback whales, fin whales (*Balaenoptera physalus*), sperm whales (*Physeter macrocephalus*), North Pacific right whale (*Eubalaena japonica*), and bowhead whales. Vessel traffic may also occur within Steller sea lion, North Pacific right whale, and proposed ringed seal designated critical habitat while in route to the DMTS port site from shipping origination ports.

Migratory Birds: IPaC also lists potential project-area migratory bird species as including: American golden-plover (*Pluvialis dominica*), bar-tailed godwit (*Limosa lapponica*), black turnstone (*Arenaria melanocephala*), buff-breasted sandpiper (*Tryngites subruficollis*), dunlin (*Calidris alpina*), red knot (*Calidris canutus*), red-throated loon (*Gavia stellata*), semi-palmated sandpiper (*Calidris pusilla*), whimbrel (*Numenius phaeopus*), and yellow-billed loon (*Gavia adamsii*). Favored eagle nesting habitat does not exist, and there are no known eagle nests, in the immediate project vicinity.

Plants: The area is dominated by wetland plant habitats, including lake, and riverine systems (Figure 11, 15). The Scrub Shrub habitats are scattered throughout the area. Low shrubs may include dwarf birch (*Betula nana*), Labrador tea (*Rhododendron* sp.) and a variety of *Vaccinium* sp. Taller shrubs include stunted black spruce (*Picea mariana*) and varieties of willow (*Salix* sp.). Dense stands of riverine (riparian) scrub shrub are present along the northern portions of Kuchoruk Creek. Moist Graminoid Meadows are the largest vegetation classification in the area and are saturated with a variety of deciduous, needleleaf, and graminoid species. They are characterized by a mix of emergent graminoid and shrub

plants. Few tall trees are present in these communities. Deciduous Forest habitats are scattered, primarily found along riparian corridors. They include dense stands of trees on sandbars of the Noatak River. The southern part of Kuchoruk Creek also has dense stands of trees.

9.3.2 Environmental Consequences

9.3.2.1 Proposed Action

Significance Threshold: Exhibit 4-1 of FAA Order 1050.1F provides the FAA's significance threshold for biological resources. A significance impact to biological resources would occur when: *The U.S. Fish and Wildlife Service or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally-listed threatened or endangered species, or would result in the destruction or adverse modification of federally-designated critical habitat.* The FAA has not established a significance threshold for non-listed species.

- Significance Determination: Less than Significant

Direct and Indirect Impacts:

Fish: Over one million cubic yards of material, from two Noatak River gravel bar material sources, would be required to construct the Proposed Action. Material site development would result in temporary disturbance of the active floodplain and potential fish habitat of the Noatak River. Some sedimentation and turbidity may take place, which would be minimized through the implementation of a SWPPP for the project. At each material source location, adequate setbacks from the active river channel would be maintained to not impact fish or their habitats, and to avoid release of sediment outflow in the active channel. Excavation would occur during winter months when the ground is frozen, and the river waters are at a low-flow level (Appendix E). Material stockpiles would be moved out of the active floodplain before river breakup in the spring. Fish habitat is expected to be protected by conducting operations during dewatered, winter conditions and away from the mainstem of the Noatak River. A reclamation plan would be prepared for the material site during development.

The airport access road would require bridge construction over Kuchoruk Creek to allow access between Noatak and the new airport. The DMTS and Port would be used but would not be improved or expanded for the Proposed Action. The winter snow road would cross five channels, including Kiyak Creek, that would require ice bridge construction. None of these project impacts are expected to have a temporary or permanent adverse effect on EFH. Impacts to fish other than EFH will be mitigated as required by the ADF&G Fish Habitat Permit. An EFH Assessment and National Marine Fisheries Service (NMFS) consultation was completed, FAA obtained concurrence from the NMFS on a determination of no adverse

EFH effects (Appendix D), and an ADF&G Fish Habitat Permit application was completed for the Proposed Action.

Wildlife: The Proposed Action would result in terrestrial mammal habitat alteration. Vegetation alteration would result in 72 acres of potential wildlife foraging habitat converted to gravel embankment, resulting in wildlife likely moving to neighboring territories containing similar type and quality habitats

Threatened and Endangered Species: On May 12, 2006 and March 22, 2018, the USFWS concluded the Proposed Action is "not likely to adversely affect" listed species, and preparation of a Biological Assessment or further consultation under Section 7 of the ESA is not necessary (Appendix E).

Marine Mammals: To mitigate polar bear impacts associated with Chukchi Sea barging and use of the DMTS Port, Marine Mammal Protection Act (MMPA) informal consultation and Section 7 ESA formal consultation took place with the USFWS as noted above (Appendix E). Other listed species may be encountered along barge routes, including Western DPS Steller sea lions, North Pacific right whales, Western North Pacific and Mexico DPS humpback whales, fin whales, sperm whales and bowhead whales. To mitigate impacts to these species MMPA and Section 7 ESA consultations took place with the NMFS and life history summaries for these species can be found in the MMPA and Section 7 consultation letters (Appendix E).

Migratory Birds: Migratory bird species may travel through the Proposed Action area and may be disturbed by clearing operations. Construction activities may also result in direct injury or mortality of birds or their nests. Birds, and their nests and eggs, are protected under the Migratory Bird Treaty Act (MBTA). DOT&PF would require the construction contractor to comply with the MBTA and provide the USFWS recommended time-period to avoid vegetation clearing (May 1-July 15) as a method of compliance. Ground disturbance would occur while the ground is still frozen, and geotextile would be placed to deter nesting during the subsequent breeding season.

Plants: The Proposed Action would result in approximately 72 acres of native vegetated, primarily palustrine scrub shrub and palustrine emergent, cover converted to gravel pads for the runway, apron, access road, pioneer road, and staging areas (Figure 14). This conversion of habitat would be minor; however, as similar vegetation community types are widespread throughout the region and vegetation loss represents only a minor portion of the total habitat available. The Proposed Action is bounded by a landscape of intact habitats, such as the CKNM (nearly 500,000 acres) and the Noatak National Preserve (6,500,000 acres). While there are no known occurrences of invasive species in and around disturbed areas in Noatak (AKEPIC, 2019), it is likely that some exist. To minimize the introduction of additional invasive species to the area, the contractor would comply with Executive Order 13112 to mitigate

invasive species by; 1) ensuring that ground disturbing activities are minimized, and disturbed areas are re-vegetated with seed recommended for the region by Alaska Department of Natural Resources (ADNR)'s A Revegetation Manual for Alaska; 2) construction equipment would be inspected and cleaned prior to enter and exiting the construction site to minimize spread of vegetative materials; and 3) erosion and sediment control materials would be locally produced products to minimize potential importation of new propagules from outside Alaska.

Connected Actions:
Construction of a new fuel transfer station (Figure 7) would result in additional fish and wildlife habitat loss (vegetation clearing and filling) adjacent to the new Noatak airport. This facility would be constructed abutting the new Noatak airport facilities and would be necessary to continue fuel transport to Noatak with the airport relocation. This additional habitat loss is anticipated to be minor compared to the vast undeveloped surrounding habitat; thus, there would be no substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitat or their populations.

Secondary (Induced) and Cumulative Impacts:
Past and future projects listed in Section 9.1 could result in additional fish and wildlife habitat loss proximate to the new Noatak airport through vegetation clearing, filling, and other disturbances. However, these additional impacts are anticipated to be minor and result in the same impact as the connected actions.

As the FAA cannot reasonably foresee what use the existing airport land and non-FAA infrastructure will have following disposal, the need for further environmental impact analysis to consider the potential biological impacts of the existing airport property and non-FAA infrastructure will be assessed upon the ultimate land disposal determination.

9.3.2.2 No Action Alternative

The No Action Alternative would have no effect on fish, wildlife, and plants. Erosion risk to the airport would remain, with the potential to detrimentally impact the community over time.

9.4 Climate

9.4.1 Affected Environment

The FAA 1050.1F Desk Reference, Version 2, Chapter 3 Climate (FAA, 2015a) provides limited guidance for qualitatively or quantitatively evaluating GHGs under the NEPA), though references the FAA Air Quality Handbook (FAA, 2015b) regarding the establishment of appropriate GHG assessment

area boundaries. FAA (2020) notes that for project-level actions, the affected environment for climate is defined as the entire geographic area that could be directly or indirectly affected by the proposed project. While the FAA Air Quality handbook outlines ROI in part based on factors including topography, landscape roughness and vegetation, albedo and values associated with either rural or urban settings, these recommendations are generally applied in assessing pollutants resulting from ongoing airport operations versus construction activities. One model recommended by FAA (2015b) for construction project assessment is a former EPA pollutant model, "NONROAD", now obsolete and replaced by a broader-based model named MOVES3 (USEPA, 2023a). One variant of MOVES3 (MOVES-Nonroad) is noted as capable of forecasting emissions inventories for off-road equipment generated pollutants as well as modeling their dispersion, with its smallest (and default) modeled ROI based on 'county' units. For an equivalent of that modeling unit, Alaska substitutes political subdivisions referred to as 'boroughs', with Noatak Airport located within the Northwest Arctic Borough (NAB). MOVES-Nonroad is designed to estimate potential emissions from multiple off-road equipment use sectors (construction, agriculture, etc.), with outputs based on detailed inventories of known-populations of county-level nonroad equipment fleets and activities (USEPA, 2023b). This information is not obtainable for the NAB, nor even for the Proposed Action prior to the selection of the construction contractor. Additionally, there is no guarantee that equipment sources for the Proposed Action would be resident in the NAB and thus capture by a MOVES-Nonroad assessment, instead likely being imported to the project site from other parts of Alaska in yet unknown quantities and types. However, to remain consistent with the conceptual MOVES-Nonroad model ROI, and potentially allow for indirect incorporation/comparison of Proposed Action GHG emission data into potential future MOVES-Nonroad modeling efforts in the NAB, the Proposed Action ROI for GHG emission assessment for the purposes of this EA will be considered as the NAB.

9.4.2 Environmental Consequences

9.4.2.1 Proposed Action

Significance Threshold: FAA has not established significance thresholds for aviation or commercial space launch GHG emissions, nor has the FAA identified specific factors to consider in making a significance determination for GHG emissions (FAA, 2020). However, GHG emissions should follow the basic procedure of considering the potential incremental change in CO2 emissions that would result from the proposed action and alternative(s) compared to the no action alternative for the same timeframe, and discussing the context for interpreting and understanding the potential changes. Consistent with the National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and

Climate Change, 88 Fed. Reg. 1196 (Interim Guidance Jan. 9, 2023),[1] the Agency will try when reasonably possible to quantify GHS emissions, compare GHS emission quantities across alternative scenarios, and place emissions in relevant context. As the proposed action does not occur within a regulated airshed, nor will it result in a change of operations or relocated facility type (i.e. SREB), the depth of analysis conducted within this EA consists of a quantitative disclosure of estimated GHG emissions associated with the temporary construction and long-term operation of the relocated airport. The significance threshold that would warrant further analysis for this proposed action is: if the project occurs within a regulated air shed identified for a criteria pollutant within the project area; and if the proposed action would result in the establishment of a permanent new source of emissions (i.e. additional facilities or structures that would emit pollutants as a result of their operation).

CEQ (2023) additionally notes that agencies can use monetized estimates of the social cost of greenhouse gas emissions (SC-GHG) to help decisionmakers and the public understand and contextualize emissions and potential climate damages. For monetized damages associated with CO2 emissions, a federal Interagency Working Group on Social Cost of Greenhouse Gases (IWG) produced a table of estimated, monetized social costs in dollars per metric-ton of GHGs emitted, individually applied over a span of modeled years (IWG-SCGHG, 2021). The IWG notes that what they previously used as a social rate of return on capital to discount future benefits of reducing GHG emissions inappropriately underestimated impacts of climate change for the purposes of estimating that social cost. Consequently, and to address disagreements on an appropriate single discount rate to use in this context as well as uncertainty on how rates may change, the IWG published tables containing three certainty-equivalent, constant discount rates spanning the plausible range of social costs: 2.5, 3, and 5 percent average per year, reported as future, year-specific dollar costs (in 2020 dollars) per metric ton GHG emitted. IWG SC-GHG tables also provide a fourth year-specific discount rate which can be used to determine a "3% discount in the 95th percentile", statistically qualified SC-GHG. This fourth value was included to provide information on potentially higher-than-expected economic impacts from climate change, conditional on the 3% estimate of the discount rate (IWG-SCGHG, 2021).

IWG tables individually report monetized social costs for CO2 emissions as well as for other less prevalent GHGs. Due to a lack of data on individual, component GHGs emissions for the proposed action, for this EA a proxy range of monetized social costs solely for CO2 emissions (SC-CO2) was estimated, with recognition that costs based solely on CO2 emissions slightly underestimate total SC-GHG.

[1] The interim guidance is not binding, but may be considered.

For the purposes of capturing uncertainties involved in social cost analyses, the IWG emphasizes the importance and value of including all four listed discount values (2.5%, 3%, 5%, and 3% at the 95th percentile) provided in social cost monetization tables (IWG-SCGHG, 2021). For analysis of the proposed action construction impacts, a range of total, potential monetized CO2 emission costs was estimated by applying the IWG SC-CO2 table-year 2025 per-metric ton emission costs of:

- $83 for the 2.5% discount rate.
- $56 for the 3.0% discount rate.
- $17 for the 5.0% discount rate; and,
- $169 for the 3.0% at the 95th percentile discount rate.

To inform these project construction SC-CO2 monetization estimates, DOT&PF made quantifiable estimates of proposed action construction process CO2 and CO2e emissions to reasonable, appropriate levels utilizing recent, efficient and accessible models (Appendix F).

- Significance Determination: Less than Significant

Direct and Indirect Impacts:

Construction: Proposed Action emissions of carbon dioxide (CO2) and carbon dioxide equivalents (CO2e) were modeled for temporary construction emissions of the Proposed Action using several relevant models freely and readily available to the public on the internet (Mathers et al., 2023; USEPA, 2023c; Feng Ma et al., 2016; Klanfar et al., 2016). CO2 is the most prevalent GHG, on average representing more than 95 percent of emissions impacts on climate that come from burning transportation fuels. Available models used and referenced in this EA variously provided outputs for either CO2 or CO2e emissions and are identified accordingly. Methane (CH4) and nitrous oxide (N2O) are other GHGs associated with fuel combustion, and models that report only CO2 emissions slightly underestimate overall GHG emission totals. Model outputs for which emissions calculations included all GHGs associated with fuel combustion are noted as CO2e – where "e" stands as a CO2 equivalent including other GHGs that have been factored in (Mathers et al., 2023).

USEPA (2023d) emissions equation calculators impartially allow “CO2 or CO2e” as input values to derive associated values for fuel volume burned, etc., and thus for the purposes of this EA, CO2 and CO2e outputs are generally accorded equal weighting and reported as “CO2 and CO2e” in the combined models’ output totals summary. While these summary totals may slightly underestimate total GHG-suite emissions as do the two individual models (Mathers et al., 2023 and USEPA, 2023d) reporting only CO2

outputs, the minor unaccounted for CH4 and N2O components are insignificant, generally representing only a combined <~5% of total climate impact potential (Mathers et al., 2023).

An estimated proxy construction fleet was developed using project engineers' expertise, and estimated power, weight, operation component and schedule, and fuel use inputs for equipment were approximated using readily internet-available manufacturers data sheets and third-party fuel consumption tables (J.S. Cole, 2023). Due to the complex blend of processes for some construction tasks (notably asphalt construction), several models were at times co-employed to yield the most reasonably accurate level of combined CO2 and CO2e emissions.

Based on predicted emissions modeling outputs for its anticipated construction process (Appendix F), the Proposed Action would produce total estimated emissions of approximately 8,881 metric tons of combined CO2 and CO2e over the project construction duration. Across the proposed three-year construction schedule, this total would average an emission loading of approximately 2,960 metric tons of combined CO2 and CO2e per year. There was a lack of information on conversion factors and other inputs that could be applied to the models to estimate output variance due to Proposed Action constructed in an arctic location, and with some processes scheduled to be conducted during winter months.

As per CEQ (2023) and IWG-SCGHG (2021) recommendations, an estimated range of total monetized value of SC-CO2 for the 2-year (2024-2026) proposed action construction schedule was determined to potentially range between $124,334 and $1,500,889 as illustrated below:

Total proposed action construction CO2 and CO2e emissions: 8,881 metric tons (see Appendix F)

- SC-CO2 at 3% 95th percentile discount rate:…8,881 metric tons x $169 = $1,500,889
- SC-CO2 at 2.5% average discount rate:.....8,881 metric tons x $83 = $737,123
- SC-CO2 at 3% average discount rate:…….....8,881 metric tons x $56 = $487,336
- SC-CO2 at 5% average discount rate:……...8,881 metric tons x $17 = $150,977

Operation: The emissions associated with operation of the airport consist of airport operations, maintenance equipment, and the SREB heating system. These operations are expected to produce similar levels of emissions at the new airport as at the existing airport.

Accordingly, the Proposed Action would result in less than significant GHG impacts to climate as temporary construction and long-term emissions are quantitatively disclosed above, and the proposed action does not occur within a regulated air shed so further analysis is not determined to be warranted. The proposed action will also not result in the establishment of a permanent new source of emissions.

Connected Actions:

It is anticipated the new fuel transfer station would be constructed concurrently with the Proposed Action, which would combine construction material and hauling needs concisely. This would reduce the overall construction duration and combine truck hauling which would therefore reduce GHG emissions.

Secondary (Induced) and Cumulative Impacts:

The Proposed Action would neither increase the current facility energy requirements for future airport operations nor change the nature of the aircraft fleet or operations schedule for landings or takeoffs. Resultantly, there would be no net increase in GHG emissions via future operations of the constructed Proposed Action. Additionally, the cumulative impacts of the Proposed Action and other present, past, and/or reasonably foreseeable projects are not anticipated. Consequently, the Proposed Action would generate no significant cumulative impacts on climate.

As the FAA cannot reasonably foresee what use the existing airport land and non-FAA infrastructure will have following disposal, the need for further environmental impact analysis to consider the potential climate change impacts of the existing airport property and non-FAA infrastructure will be assessed upon the ultimate land disposal determination.

9.4.2.2 No Action Alternative

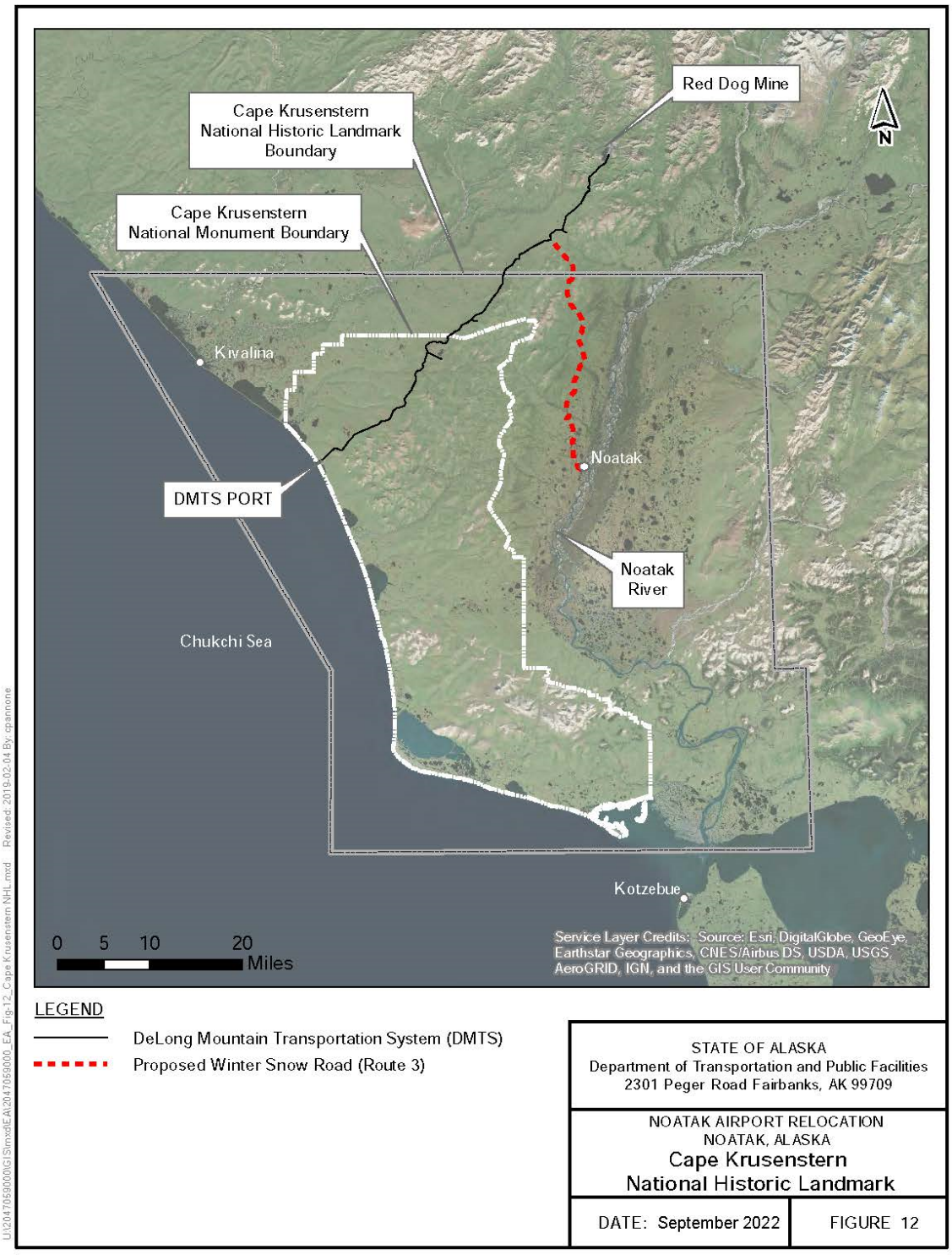
The No Action Alternative would result in no additional impacts to climate over current conditions. However, caribou and other mammals would continue to have free access to airport operational surfaces and infield ponds, resulting in the occasional need for aircraft to abort takeoff or landing operations to avoid collisions. These operations would require additional fuel to be burned, contributing some unknown levels of jet-fuel combustion GHG emissions to the environment. Additionally, there would remain a continued potential threat of aircraft or airport service vehicle collisions with wildlife that could result in their injury or death as well as posing a serious threat to public safety and airport operations.

9.5 Department of Transportation Act, Section 4(f)

9.5.1 Affected Environment

Noatak, the existing airport, and the Proposed Action are located entirely within the Cape Krusenstern National Historic Landmark (CKNHL). The CKNHL boundary (Figure 12), is managed by the NPS and established to preserve archeological resources in the area (NPS, 2018). Additionally, the CKNM is located within the CKNHL, which encompasses the DMTS port and a portion of the DMTS haul route. The CKNM eastern boundary lies approximately 12 miles south and west of the overland portion of the mobilization haul route and proposed new airport project respectively.

Figure 12: Cape Krusentern National Historic Landmark



9.5.2 Environmental Consequences

9.5.2.1 Proposed Action

Significance Threshold: Exhibit 4-1 of FAA Order 1050.1F provides the FAA's significance threshold for Section 4(f) properties. A significance impact would occur when: *The action involves more than a minimal physical use of a Section 4(f) resource or constitutes a "constructive use" based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource.* A significant impact under NEPA would not occur if mitigation measures eliminate or reduce the effects of the use below the threshold of significance.

- Significance Determination: Less than Significant

Direct and Indirect Impacts:
Section 4(f) of the *U.S. Department of Transportation Act* would apply under criteria 23 CFR 774.17(1), since the Proposed Action is within the CKNHL. The Proposed Action would permanently incorporate a minor portion of the CKNHL (approximately 72 acres of the 650,000 acres) into the airport and roads and temporarily incorporate 192 acres for material site use (Figure 12).

Pursuant to 36 CFR 800.5(d)(2), implementing regulations of Section 106 of the National Historic Preservation Act, FAA found, and the NPS and State Historic Preservation Officer (SHPO) concurred (on October 6, 2021, and September 22, 2021, respectively) that the Proposed Action would not adversely affect the CKNHL. Based on the undertaking not adversely affecting the function or historic qualities of the CKNHL and that agreement from the NPS and SHPO has been obtained in writing, the Proposed Action appears to meet a *de minimis* use (23 CFR 774.17) (Appendix G).

FAA determined no feasible and prudent alternatives meet the purpose and need and avoid CKNHL use. A Section 4(f) *De Minimis* Finding was completed for the Proposed Action (Appendix G). The NPS and SHPO concurred with the Section 4(f) *de minimis* determinations and *de minimis* impact finding that the Proposed Project would not adversely impact the CKNHL on July 21, 2022 and May 17, 2022, respectively.

Connected Actions:
Section 4(f) would not apply to the fuel transfer station because it would not be U.S. Department of Transportation-funded.

Secondary (Induced) and Cumulative Impacts:
Other past, current and future projects in the region could have a cumulative effect on the CKNHL. However, Section 4(f) would only apply to current or future projects funded by the U.S. Department of Transportation.

As the FAA cannot reasonably foresee what use the existing airport land and non-FAA infrastructure will have following disposal, the need for further environmental impact analysis to consider the potential Section 4(f) impacts of the existing airport property and non-FAA infrastructure will be assessed upon the ultimate land disposal determination.

9.5.2.2 No Action Alternative

The No Action Alternative would not impact Section 4(f) properties as no equipment would be mobilized to Noatak through the CKNM or CKNHL, and no additional area within the CKNHL would be permanently converted to transportation use.

9.6 Hazardous Materials, Solid Waste, and Pollution Prevention

9.6.1 Affected Environment

The ADEC Contaminated Sites Program database (ADEC 2018) identifies two active sites near Noatak (Figure 13). The AKARNG (Alaska Air National Guard) Noatak Federal Scout Armories (FSA) (Hazard ID 2496), listed for petroleum contamination, is 0.5-mile northeast of the proposed airport access road connection to the community road. Plume mapping indicates contaminants may have migrated onto the current airport property (Stantec 2017a). Since that time, the ADEC identified a clean-up plan that was developed and carried out by the USACE (ADEC 2019b). As of September 28, 2021, the ADEC is in the process of evaluating the site for a "cleanup complete" determination (ADEC 2021a). The Red Dog Mine (Hazard ID 1423), listed for dust containing heavy metal contamination from ore transportation, is located along the DMTS. The mine has taken steps to reduce the dust releases (ADEC 2018). Teck Alaska Inc. maintains use of the DMTS for truck transport between the mine and Red Dog Port and works with ADEC to clean up zinc concentrate spills if they occur. Teck Alaska Inc. maintains BMPs for DMTS use to reduce dust and roadbed soil spread (ADEC 2021b).

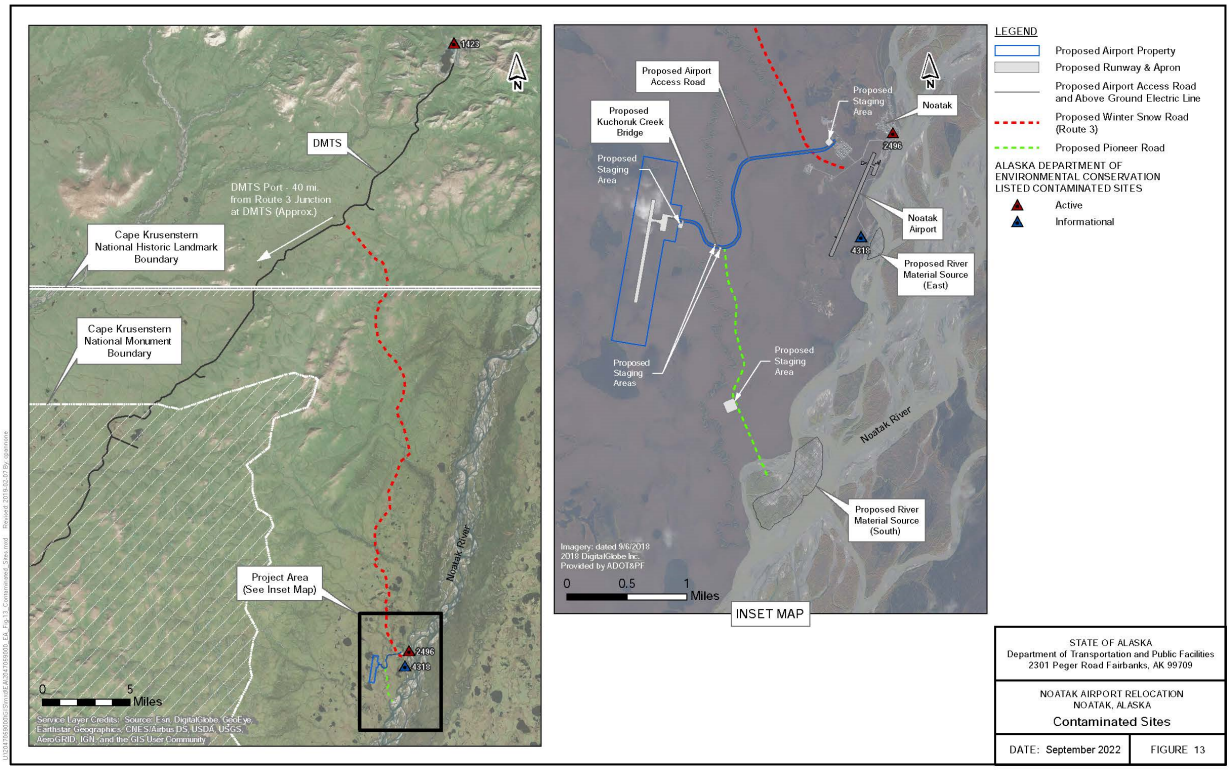
ADEC identifies one informational site, Noatak Former Dumpsite (Hazard ID 4318), which is listed for various contaminants and located 1.3 miles east of the proposed airport access road (Figure 13). All contaminants are below cleanup levels at the site, which currently has a status of "no further remedial action planned" (ADEC 2018). However, this site is now eroding into the Noatak River.

A Phase I Environmental Site Assessment found 20 recognized environmental conditions (REC) (e.g., abandoned 55-gallon drums, soil staining, old fuel lines, uncontrolled non-code compliant tank farms), 4 historical RECs (e.g., old dump, 3 historic spills), and 5 *de minimis* conditions within the existing airport property (Stantec 2017a). Further site investigation would be conducted to determine required remediation actions associated with disposal of the existing airport property and non-FAA infrastructure upon the ultimate land disposal determination, when the future purpose of the existing property and non-FAA infrastructure will be known.

The sewage lagoon and landfill are located 1,200 ft. north of the existing airport. This is less than the FAA recommended 5,000-ft. separation distance.

The existing airport property and proposed airport location are not known to contain concentrations of per-and poly-fluoroalkyl substances (PFAS) (ADEC 2022).

Figure 13: Contaminated Sites



9.6.2 Environmental Consequences

9.6.2.1 Proposed Action

Significance Threshold: The FAA has not established a significance threshold for hazardous materials, solid waste, or pollution prevention in FAA Order 1050.1F; however, the FAA has identified factors to consider in evaluating the potential environmental impacts for hazardous materials, solid waste, or pollution prevention. If these factors exist, there is not necessarily a significant impact; rather, the FAA must evaluate these factors to determine if there are significance impacts. The factors are if the proposed action would have the potential to: violate applicable federal, state, tribal or local laws or regulations regarding hazardous materials and/or solid waste management; involving a contaminated site; produce an appreciably different quantify or type of hazardous waste; generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or, adversely affect human health and the environment.

- Significance Determination: Less than Significant

Direct and Indirect Impacts:
The Proposed Action would relocate the airport farther than the FAA recommended 5,000-ft. separation distance from the sewage lagoon and landfill. Transfer of existing airport property may require remediation of onsite REC's that would be determined through further site investigation. Mitigation would be completed through required remediation actions according to an approved ADEC plan, such as a Contaminated Materials Management Plan. There are no known contaminated sites within the new proposed embankment of the airport construction area. The DOT&PF will remove and/or decommission airport facilities and perform other actions to dispose of airport property as required to decommission and dispose of airport property.

Prior to construction, the contractor would develop a Best Management Practice (BMP)-based Solid Waste and Hazardous Material Control Plan to address hazardous materials management, including storage, handing, and cleanup of potential fuel and lubricant spills. Therefore, construction activities would pose a low risk of incidental contaminant spills.

The DMTS would be used for a winter haul route to transport construction materials between the Red Dog Port and the winter snow road to Noatak. Teck Alaska Inc. maintains use of the DMTS and would be coordinated with prior to DMTS use for transport of construction materials for the project (ADEC 2021b). If actions are needed to ensure the protection of people, human health and the environment ADEC will be contacted.

Connected Actions:

The new fuel transfer station would be constructed to consolidate facilities at the new Noatak airport to distribute fuel to the community of Noatak. It is anticipated the fuel transfer station would be funded and constructed by another entity concurrently with the proposed project. The existing fuel transfer station at the current airport would be removed and remediated as appropriate in accordance with ADEC requirements.

Secondary (Induced) and Cumulative Impacts:

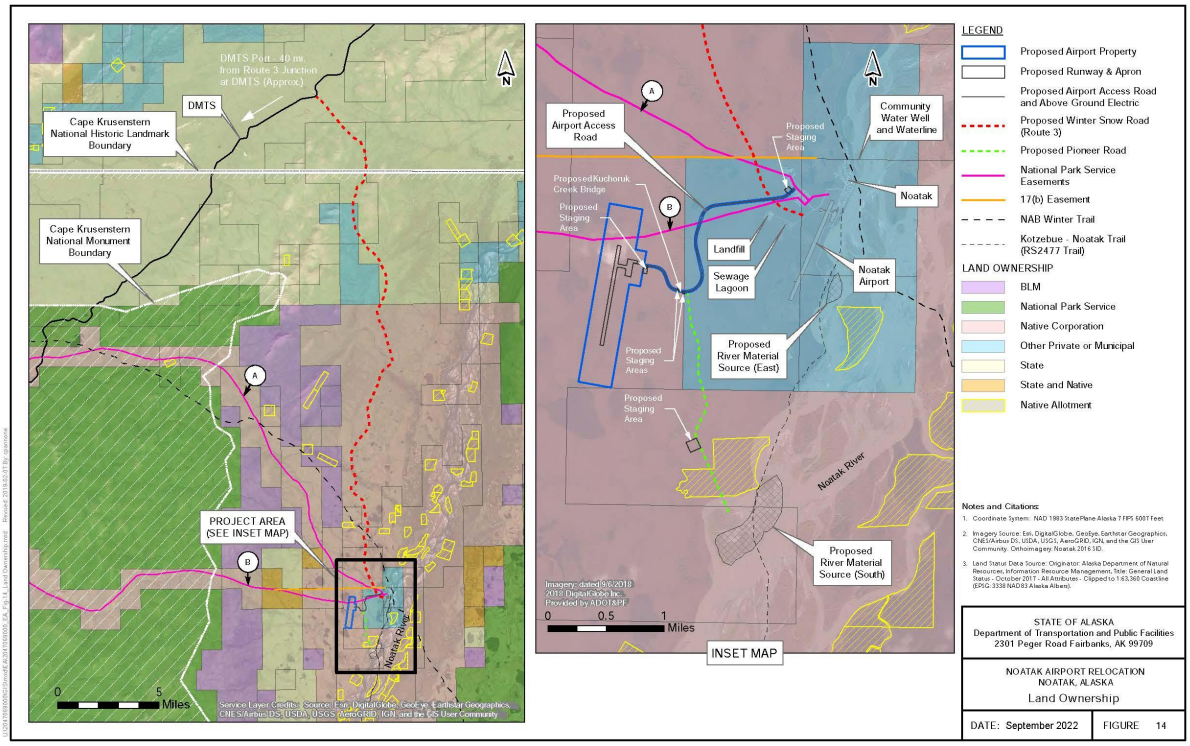
The Noatak landfill (Figure 14) is located between the current airport and the Proposed Action. The community has discussed moving the landfill north of town after the airport is relocated. Personal communication with Jennifer at the Noatak IRA on October 27, 2021, indicated a new landfill location has not been identified, but they will be completing necessary studies to site it in a location away from standing water where there would be more of a bird attractant. Any past, current, or future projects have the potential to generate additional solid waste and may produce or discover contamination near Noatak. Upon the identification of the new landfill location, the need for further environmental impact analysis associated with the relocation of the landfill will be assessed.

As the FAA cannot reasonably foresee what use the existing airport land and non-FAA infrastructure will have following disposal, the known contamination at the existing airport property and non-FAA infrastructure will be addressed as part of the ultimate land disposal determination to prevent a release of hazardous material into the environment.

9.6.2.2 No Action Alternative

The No Action Alternative would not meet FAA's separation distance from the sewage lagoon and landfill. The community would continue to use non-code compliant fuel pipelines, storage tanks, and other aging infrastructure on airport property.

Figure 14: Land Ownership



9.7 Historical, Architectural, Archaeological and Cultural Resources

9.7.1 Affected Environment

In 2006 and 2019, archaeological investigations were completed for the Area of Potential Effect (APE), which included the proposed airport site, airport access road, Kuchoruk Creek bridge, Noatak River and inland material sources, and material and mobilization haul routes. No pre-contact or historic resources were identified within the APE (Mobley, 2007; Stantec, 2019a). On December 21, 2007, DOT&PF, on behalf of FAA, determined that no historic properties would be affected by the Proposed Action, and SHPO concurred with DOT&PF's determination on January 31, 2008 (File No.: 3130-IRFAA).

In 2018 the APE was extended to encompass the DMTS Port Site and the DMTS to its connection with the winter snow road. A review of the Alaska Heritage Resources Survey (AHRS) on January 17, 2019, indicated additional cultural resources were recorded within one mile of the APE. There are currently 24 cultural resources identified within one mile of the APE, five of which are inside the APE including:

- *NOA-00042, Cape Krusenstern Archaeological District National Monument National Historic Landmark* – The district covers over 2 million acres, extending along the beach 8 miles and

varying in width from 1-3 miles. These former coastal margins contain houses, burials, cache pits, and other remains of the peoples who have occupied these beaches progressively for at least 5,000 years. This horizontal stratigraphy includes virtually the entire range of known cultural history in NW Alaska. Listed on the National Register of Historic Places as a National Historic Landmark under Criterion D in 1974, there is evidence that the Cape Krusenstern area has been inhabited almost continuously for 11,000 years and that sites in the Noatak Valley may provide important information about early migrations.

- *NOA-00361, Kotzebue-Noatak Trail* – In 2009 the Bureau of Indian Affairs (BIA) recorded the route of the Kotzebue-Noatak Trail along the west bank of the Noatak River south of the Village of Noatak. This winter trail runs north from Kotzebue along the coast and crosses Hotham Inlet to the mouth of the Noatak River, then continues north along the Noatak River to the Village of Noatak (Garcia, 2009). The proposed haul route north of the River Material Source (South) would follow a portion of this trail south of the Village of Noatak. BIA recommended that the recorded segments of the Kotzebue-Noatak Trail were not eligible for National Register of Historic Places listing (Garcia, 2009; Goade, 2014). The full extent of the trail has not been formally evaluated.
- *NOA-00601, Log Cabin 1* – In 2016 Northern Land Use Research Alaska, LLC (NLURA) recorded a log cabin within the current APE, immediately east of the existing Noatak Airport aircraft ramp, and approximately 425 feet east of the airport runway (Blanchard and Baxter-McIntosh, 2016). According to a long-time Noatak resident this cabin was built during the 1960s or 1970s. No determination of NRHP eligibility was completed for this site.
- *NOA-00602, Log Cabin 2* – In 2016 NLURA recorded a log cabin within the current APE, approximately 530 feet northeast of the existing Noatak airport runway (Blanchard and Baxter-McIntosh, 2016). This cabin in within the Historic Village of Noatak (NOA-00341) and according to a long-time Noatak resident this cabin was built during the 1960s or 1970s. No determination of NRHP eligibility was completed for this site.
- *NOA-00603, Log Cabin 3* – In 2016 NLURA recorded a log cabin within the current APE, approximately 610 feet northeast of the existing Noatak airport runway (Blanchard and Baxter-McIntosh, 2016). This cabin in within the Historic Village of Noatak (NOA-00341) and according to a long-time Noatak resident this cabin was built during the 1960s or 1970s. No determination of NRHP eligibility was completed for this site.

9.7.2 Environmental Consequences

9.7.2.1 Proposed Action

Significance Threshold: The FAA has not established a significance threshold for this impact category; however, the FAA has identified a factor to consider when evaluating the potential environmental impacts for historical, architectural, archaeological, and cultural resources. This factor includes, but is not limited to, situations in which the proposed action or alternative would result in a finding of Adverse Effect through the Section 106 process. For historic properties subject to Section 4(f) of the DOT Act, a significance impact would occur when the action involves more than minimal physical use of a Section 4(f) resource or constitutes a "constructive use" based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource (see Section 9.5 above).

- Significance Determination: Less than Significant

Direct and Indirect Impacts:
Section 106 consultation was initiated on October 31, 2007, to the SHPO, Native Village of Noatak, Maniilaq Association, NANA Corporation, and NAB (Appendix H), and no comments or concerns regarding historic or cultural resources were raised.

Based on a review of past archaeological investigations, AHRS data, consultation efforts, and the prevalence of wetlands, the DOT&PF, on behalf of the FAA, determined that the project would not adversely affect historic properties. On January 31, 2008, the SHPO concurred with a finding of no historic properties affected by the Proposed Action (File No. 3130-IRFAA) (Appendix H). Due to the time since the last consultation efforts took place and the project extension to the DMTS Port Site, an updated finding of no historic properties adversely affected consultation letter was sent to SHPO and other consulting parties on August 26, 2021, and concurrence was received from the SHPO on September 22, 2021 (File No. 3130-IR FAA / 2021-00989) and the NPS on October 6, 2021 (Appendix H).

Connected Actions:
The fuel transfer station would be located directly adjacent to the new Noatak airport and is located entirely within the proposed project APE. SHPO concurred with a finding of no historic properties adversely affected for the proposed project APE; therefore, it is anticipated construction of the fuel transfer station would not have an adverse impact on any historic properties.

Secondary (Induced) and Cumulative Impacts:
The Proposed Action would not adversely affect any historic properties within the APE, including the CKNHL and the CKNM. The Proposed Action is not expected to impact historical, archaeological, or cultural resources; therefore, secondary and cumulative impacts are unlikely.

As the FAA cannot reasonably foresee what use the existing airport land and non-FAA infrastructure will have following disposal, the need for further environmental impact analysis to consider the potential

historic, architectural, archaeological, and cultural impacts of the existing airport property and non-FAA infrastructure will be assessed upon the ultimate land disposal determination.

9.7.2.2 No Action Alternative

The No Action alternative would not affect historic, archaeological or cultural resources.

9.8 Land Use

9.8.1 Affected Environment

The Noatak community lies on the west bank of the Noatak River, and currently has no road or regular barge access. Fuel and freight are delivered by air, with limited consumer goods transported by snow machine from Kotzebue. Community residents use all-terrain vehicles, snow machines, and small boats for transportation and subsistence purposes (ANTHC, 2011). Land ownership surrounding Noatak is diverse and includes Federal, State, Local & Private entities (Figure 14).

The following describes land uses and long-range transportation goals within the Noatak area:

- The Proposed Action is on NANA Regional Corporation, other private, municipal (Native Village of Noatak), and state lands.
- The Proposed Action is within the CKNHL (Figure 12; NPS, 2018). The CKNM is 12 miles west of the proposed new airport.
- 17(b) trail easements exist to provide public land access (Figure 14; BLM, 2017).
- The DMTS, leased by the Alaska Industrial Development and Export Authority from NANA, is used to support development in Northwest Alaska.
- The *Noatak Community Comprehensive Development Plan* (2011-2016; NAB, 2006) identifies relocating the airport as a high priority community development need.
- NAB Zoning Districts include Village, Subsistence Conservation, General Conservation, and Transportation Corridor Districts (NAB, 2011). The Subsistence and General Conservation Districts are of high importance for subsistence resources and activities (NAB, 1993).
- The *NAB Comprehensive Plan* (NAB, 1993) states existing industrial transportation systems (e.g., DMTS) should be utilized, not duplicated, to the greatest extent possible.
- The *Northwest Alaska Transportation Plan* (DOT&PF, 2004) notes Noatak is the only NAB community that does not receive summer barge freight service to deliver heavy goods and fuel.

- The Native Village of Noatak signed a resolution on February 8, 2022 supporting proposed airport relocation Option 3, and the winter snow road R3 to the DMTS Port Site.

9.8.2 Environmental Consequences

9.8.2.1 Proposed Action

Significance Threshold: The FAA has not established a significance threshold for land use, and the FAA has not provided specific factors to consider in making a significance determination for land use in FAA Order 1050.1F. The determination that significant impacts exist in the last use impact category is normally dependent on the significance of other impacts categories. If the proposed action would result in other impacts that have land use ramifications, for example, disruption of communities, relocation, and induced socioeconomic impacts, the impacts on land use are analyzed within these contexts and described under the appropriate impact category.

- Significance Determination: Less than Significant

Direct and Indirect Impacts:
Consistency with Land Use Plans: The Proposed Action is consistent with local land use and transportation plans and would meet high priority community needs (NAB, 1993; NAB, 2006).

Impacts to Land Ownership: The Proposed Action would require acquisition of approximately 323 acres of vacant NANA-owned land, with no identified permanent usage other than non-historic winter trails which would remain usable for local transportation.

Most of the existing airport property is granted by patent from the U.S. Government to the State of Alaska. Once the airport is relocated, that portion of the existing airport property would revert to Federal ownership unless the land reversal clause is extinguished. Existing avigation easements will be reverted to NANA. Refer to the description of the proposed action's ROW process in Chapter 2.0 of this EA for further detail. Upon completion of the new airport the existing Noatak airport property would represent a significant development opportunity for the Noatak community with an advantageous location immediately adjacent to the community (Appendix A).

FAA cannot reasonably foresee what use this land will have following disposal because the future landowner will not be known until after a record of decision has been issued. The need for further environmental impact analysis to consider the potential impacts to land ownership of the existing airport property and non-FAA infrastructure will be assessed upon the ultimate land disposal determination.

Impacts to Zoning and Easements: The Proposed Action would be located within NAB Subsistence Conservation and Village Districts, which would require a NAB Title 9 Use Permit.

The airport access road would cross a BLM trail easement. Access roadside slopes are proposed at 4:1 or flatter to provide recoverable roadside slopes and traversable trail crossings.

Airport access and material haul routes would cross Village, and regional corporation lands. The winter snow road would tie into the DMTS to utilize that existing route to the Red Dog Port. Landowner and lessee coordination would be completed to avoid conflict.

Connected Actions:
The fuel transfer station would be located directly adjacent to the new Noatak airport apron and access road which is currently located on vacant land within NAB Subsistence Conservation District and would require a NAB Title 9 Use Permit.

Secondary (Induced) and Cumulative Impacts:
No other past, current, or future projects are known to have Proposed Action area impacts.

9.8.2.2 No Action Alternative

The No Action Alternative would not impact land ownership as the DOT&PF currently maintains the existing airport ROW. This alternative would not ensure compatible land uses, as the existing airport is in proximity (less than 5,000 ft.) to the sewage lagoon, landfill, and bulk fuel storage per FAA recommended separation distance.

9.9 Socioeconomics, Environmental Justice, and Children's Health and Safety Risks

9.9.1 Affected Environment

Socioeconomics: Noatak was originally established as a camp, but the rich subsistence resources of the region enabled the development of a permanent settlement (DCCED, 2017). Residents continue to rely on caribou, moose, reindeer, whale, seal, waterfowl, berries, greens, and chum salmon. Several residents hold commercial fishing permits, and many families travel to seasonal fish camps. The proposed project would be constructed within zoned Subsistence Conservation and Village District lands (NAB, 2011). In Resolution 04-08, the Native Village of Noatak requested agency assistance to construct a new airport.

Environmental Justice: Executive Order 12898: Environmental Justice addresses impacts from Federal Actions to minority and low-income populations. Noatak is primarily Inupiat, and 94.8 percent of the population is Alaska Native or part Native (DCRA, 2010). The proposed project is not anticipated to cause adverse effects on minority or low-income populations. Executive Order (E.O.) 14096—"Revitalizing Our Nation's Commitment to Environmental Justice for All" was enacted on April 21, 2023. E.O. 14096 on environmental justice does not rescind E.O. 12898 – "Federal Actions to Address

Environmental Justice in Minority Populations and Low-Income Populations," which has been in effect since February 11, 1994 and is currently implemented through DOT Order 5610.2C. This implementation will continue until further guidance is provided regarding the implementation of the new E.O. 14096 on environmental justice.

Children's Health and Safety Risks: Children's health and safety are currently at risk due to noise, aviation generated dust and proximity of aircraft flying directly over the community. The U.S. Census Bureau data for Noatak (2015) estimates 58 children ages newborn-5 years, and 45 children ages 5-9 years. There is one school with 184 students, and two health care providers (DCCED, 2017).

Subsistence: Subsistence activities are an integral part in Noatak residents' lives. A 2007 survey found 100% of respondents reported using subsistence resources, 96% reported harvesting at least one kind of wild food, and 80% of the total community harvest consisted of caribou, moose, marine mammals, trout, and salmon (ADF&G, 2007).

9.9.2 Environmental Consequences

9.9.2.1 Proposed Action

Significance Threshold: The FAA has not established a significance threshold for socioeconomics in FAA Order 1050.1F; however, the FAA has identified factors to consider when evaluating the context and intensity of potential environmental impacts for socioeconomics. Factors to consider that may be applicable are: induced substantial economic growth in an area, either directly or indirectly; disrupt or divide the physical arrangement of an established community; cause extensive relocation when sufficient replacement housing in unavailable; cause extensive relocation of community businesses that would cause severe economic hardship for affected communities; disrupt local traffic patterns and substantially reduce the levels of service of roads and serving an airport and its surrounding communities; or produce a substantial change in the community tax base.

- Significance Determination: Less than Significant

Direct and Indirect Impacts:

Socioeconomics: Other than the access road, the Proposed Action would not permanently relocate any residence or business, alter surface transportation patterns, divide or disrupt established communities, produce a substantial change in the community tax base, or disrupt planned development. There may be a temporary increase in local employment during construction, but long-term employment effects are not expected. The pioneer road, between the material source (south) and the airport access road, would be

used to haul material to avoid community roads and reduce impacts from hauling through the community. Hauling equipment through the community may impact water and sewer lines buried under existing community roads. The contractor would be required to protect utilities, repair any damage caused by their activities, and maintain community roads associated with the haul route.

Environmental Justice: The Proposed Action would not specifically cause adverse effects to minority or low-income populations. However, travel time and costs for all residents to access the airport would increase as the distance to the airport would be 2 miles greater than at present. DOT&PF would dispose of the existing airport lands and those funds would immediately be reinvested in the new airport thereby reducing property costs to acquire lands for new airport construction (Appendix A). Fair market value would be provided for approximately 323 acres of NANA land for a fee interest for the new airport lands. Additionally, operation and maintenance costs would increase due to a new fuel transfer system at the relocated airport to service the community. It is anticipated the fuel transfer system would be constructed concurrently with the Proposed Action and a fuel trucking system would be used due to funding limitations.

Children's Health and Safety Risks: Children's health and safety risks from noise and aircraft operations proximity would decrease due to a greater distance from the airport to the community.

Subsistence: The Proposed Action, including material site development, is located in community subsistence areas used for animal harvesting, fishing, and berry picking. Approximately 72 acres of terrestrial habitat and 192 acres of Noatak River gravel bars would be lost for subsistence activities; however, the airport access road and Kuchoruk Creek bridge, and pioneer road to the new material site, would improve access to these areas. Material site gravel bars would be naturally reestablished by river hydraulic processes and again be available for subsistence use some relatively short time in the future.

Connected Actions:

The fuel transfer system at the new Noatak airport would provide a method for consumer fuel to be off-loaded from arriving airplanes to the fuel transfer station and distributed via a fuel trucking system to the Noatak community for use. The existing fuel transfer system is located at the current Noatak airport and without a fuel transfer system at the new Noatak airport there would not be the ability to distribute fuel to the community.

Secondary (Induced) and Cumulative Impacts:

The Proposed Action, combined with past, current, and future projects is not expected to cause negative cumulative impacts with environmental justice, socioeconomics, or children's health and safety risks.

As the FAA cannot reasonably foresee what use the existing airport land and non-FAA infrastructure will have following disposal, the need for further environmental impact analysis to consider the potential environmental justice, socioeconomics, or children's health and safety risk impacts of the existing airport property and non-FAA infrastructure will be assessed upon the ultimate land disposal determination.

9.9.2.2 No Action Alternative

The No Action Alternative would impact community socioeconomics and maintain existing children's environmental health and safety risks. Noatak River erosion would compromise the airport, closing the only transportation option to this minority and low-income community.

9.10 Visual Effects

9.10.1 Affected Environment

Noatak is a small community surrounded by rolling hills, tundra flats, kettle lakes, and the Noatak River.

Light Emissions: The existing airport has medium-intensity runway lighting, wind cone lighting, and a rotating beacon. Runway lighting is typically activated for short periods of time prior to take-off and landing. Lighting is most visible to Noatak residents during periods of aircraft activity and operation of the rotating beacon. No concerns about light emissions have been raised by the community.

Visual Resources/Visual Character: The visual, or aesthetic, resources of the project area range from disturbed lands, consistent with community development, to undisturbed lands comprised of rolling hills, tundra flats, and kettle lakes.

9.10.2 Environmental Consequences

9.10.2.1 Proposed Action

Significance Threshold: The FAA has not established a significance threshold for visual effects in FAA Order 150.1F; however, the FAA has identified factors to consider when evaluating the potential impacts for visual effects. These factors are: the degree to which the action would have the potential to create annoyance or interfere with normal activities from light emissions; and the degree to which the action would have the potential to affect the visual character of the area due to the light emissions; the degree to which the action would have the potential to affect the nature of the visual character of the area; the degree to which the action would have the potential to contrast with the visual resources and/or visual character in the area; and the degree to which the action would have the potential to block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations.

- Significance Determination: Less than Significant

Direct and Indirect Impacts:
Airport relocation would result in light emissions where none previously existed, although they would be located farther away from the community. New light sources would include medium-intensity runway lighting, wind cone lighting, and a rotating beacon, similar to existing airport. The existing airport lighting system would be decommissioned.

The visual character of the area would be permanently modified with the addition of a new airport and access road in a previously vegetated area. Excavation and fill activities would disturb wetlands to the south and west of the community.

Connected Actions:
The fuel transfer station would result in a minor visual change to the current landscape and would be constructed directly adjacent to the new Noatak airport, which would minimize fill activities.

Secondary (Induced) and Cumulative Impacts:
Other current and future projects referenced in Section 9.1 may result in a cumulative increase in light emissions and visual change. The cumulative impact would still be minor; however, as light emissions would be commensurate with community activities and visual change would represent only minor changes to the current landscape.

As the FAA cannot reasonably foresee what use the existing airport land and non-FAA infrastructure will have following disposal, the need for further environmental impact analysis to consider the potential visual effects impacts of the existing airport property and non-FAA infrastructure will be assessed upon the ultimate land disposal determination.

9.10.2.2 No Action Alternative

The No Action Alternative would maintain existing visual conditions, including airport lighting, close to the community.

9.11 Water Resources

9.11.1 Affected Environment

Wetlands: Proposed Action lands consist of a mixture of wetland types, surface waters, and a few existing developed gravel pads (Table 3, Figure 15, Appendix I, Stantec, 2019b and ABR, 2006). Wetland studies

(Stantec, 2019b and ABR, 2006) included habitat classification and mapping, and a functional assessment.

Table 3. Wetlands, Waters of the U.S. and Uplands in Proposed Action Area

Wetlands, Waters of the U.S. and Uplands Type	Acres
Palustrine Scrub Shrub Dominated	1,936
Palustrine Emergent Dominated	2,445
Palustrine Forested Dominated	56
Lacustrine	198
Pond	33
Riverine	1,353
Total	6,021
Uplands	45

Floodplains: The Federal Emergency Management Agency has not published regulatory flood maps for the community of Noatak. A 1976 community map (DCRA, 1976) depicts a floodplain elevation at a level of 30 ft. above the normal channel height. U.S. Army Corps of Engineers (USACE) identified an approximate 25-ft. high water mark, and the Noatak River floodplain has an average to low flood hazard (USACE, 2012).

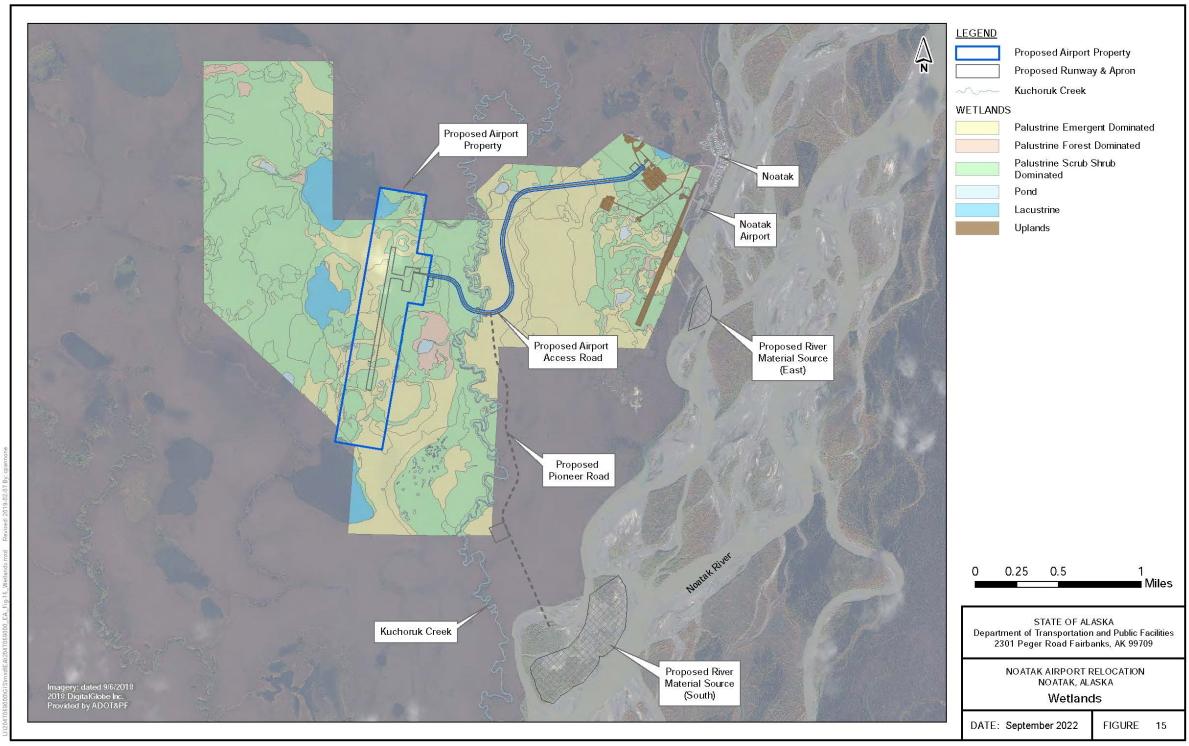
A 2008 hydrologic study of Kuchoruk Creek determined a 65.2-ft. ordinary high-water height and 75.9 ft. 500-year flood event (HDL, 2008).

Surface Waters: Noatak and the existing airport are located along the Noatak River's west bank. The Noatak River is not listed as an impaired waterbody, and there are no known water quality impairments to area surface waters (ADEC, 2010; Figure 11). The Noatak River is a navigable waterway as defined by the USACE. The river is navigable for 400 miles from its mouth at Kotzebue Sound to Portage Creek (USACE, 2020).

Groundwater: There is groundwater contamination in Noatak due to the AKARNG Noatak FSA petroleum contamination plume; however, the community's water supply is not affected as it relies on a series of groundwater wells on Noatak River's west bank and a gravel bar with water pumped through water lines to the community water treatment plant (Figure 14). The wells are classified by ADEC as "Groundwater Under the Influence of Surface Water".

Wild and Scenic Rivers: The river segment in the vicinity of the Proposed Action is not designated as a Wild and Scenic River, however, a Wild and Scenic designation for the Noatak River begins about 30 miles upriver from Noatak and continues from that point upriver for some distance (NWSRS, 2017).

Figure 15: Wetlands



9.11.2 Environmental Consequences

9.11.2.1 Proposed Action

Significance Threshold: Exhibit 4-1 of FAA Order 1050.1F provides the FAA's significance threshold for surface waters. A significant impact exists if: *The action would exceed water quality standards established by federal, state, local, and tribal regulatory agencies; or contaminate public drinking water supply such that public health may be adversely affected.*

- Significance Determination: Less than Significant

Direct and Indirect Impacts:
Wetlands: The Proposed Action would be located entirely within wetlands; however, the project was designed to avoid and minimize impacts to wetlands and waters of the U.S. to the maximum extent practicable (Appendix I).

Avoidance and Minimization of Wetland Impacts
Equipment Mobilization to Site

This feature of the project avoided and minimized wetland impacts by design. Equipment would use the existing Delong Mountain Transportation System (DMTS) and Port system to connect an overland access route to the Noatak project area via a winter road. The DMTS and Port would be used for equipment, but not improved or expanded. No additional fill pads and facilities in wetlands or waters for a barge landing or equipment storage are required. The equipment for the construction would be offloaded at the DMTS Port during the summer.

Snow and Ice Road to Noatak
This feature of the project avoided wetland impacts by design. During winter, the equipment would be used to construct a snow road to Noatak. The winter snow road would depart the DMTS haul road and travel 67.6 miles to Noatak. The proposed route minimizes stream crossings and would use ice bridge construction to cross five channels, including Kiyak Creek. No fill material would be placed in stream channels or wetlands for the winter road. The access route to Noatak avoids travel over Cape Krusenstern National Monument lands by utilizing the existing DMTS transportation facility crossing it. The route has an estimated maximum grade of 7.5 percent (other routes had grades up to 21 percent), and crosses only five stream channels. The winter route, constructed of snow and ice only, requires no ground disturbance or permanent cut and fill on slopes and would be safe for proposed equipment travel. No permanent fill would be placed in wetlands or waters.

Permanent Access Roads

This feature of the project minimized wetland impacts by design. The access road alignment overlies ground that is subject to thaw settlement and has a high potential for snow drifting. The road would be engineered to an estimated average height of 6 feet to minimize potential road surface snow drifting, to provide thermal protection for the underlying permafrost, and to provide a drivable surface above the 100-year flood event. The road would have an average width of 24 feet and an average embankment base width of 72 feet.

Excavation along the route would be avoided to minimize thermal degradation of the frozen soils. Temporary work areas would be used during construction for equipment access, culvert installation, and placement of sediment controls.

The power poles for airport utilities are contained in the road ROW and do not require a separate access. The power pole footprint is within the access road calculations.

The East River Material Source is already in use by the community and the existing road would be used for access.

Material Sites

This featured avoided and minimized impacts to wetlands by using mineral material from gravel bars within the Noatak River. Material extraction from gravel bars would ensure no net loss of WOUS, as each material site would be excavated below the water table, and eventually reflood from the river's natural rise and fall during the seasons. The in-river mining of material would reduce the need for terrestrial material sites and wetland disturbance for the project.

At each material source location, adequate setbacks from the active river channel would be maintained to not impact fish and avoid sediment outflow in the active channel. Excavation would occur during winter months when the ground is frozen, and the river waters are at a low-flow level. Material stockpiles would be moved out of the active floodplain before river breakup in the spring. Main channel water levels would be lower than other times of the year, allowing for material extraction in gravel bars without impacting water quality or fish passage.

Project construction would require approximately 72 acres of unavoidable wetlands impacts (Table 4). Impacts associated with the Noatak River material sources would be temporary. Work within wetlands and waters of the U.S. would be covered under a USACE Individual Permit.

The two predominate wetlands filled by this project are Palustrine Scrub Shrub and Palustrine Emergent wetlands. These wetlands were rated for wildlife and fish habitat as well and other functions such as ground water discharge, ground water recharge, sediment retention, nutrient retention, production export,

and subsistence use. The wetlands in the area and region are similar. Wetlands associated with streams and riverine systems rate highest for fish habitat and subsistence. The riverine wetlands rate high for wildlife habitat. While not all functions of any wetland are equal, the value for these two wetlands score low to medium for ground water discharge, ground water recharge, sediment retention, nutrient retention, production export, subsistence use, and fish and wildlife habitat. The wetlands are part of large complex of wetlands that provide functions for the region as a whole. The two wetlands filled as a whole were rated to be low value wetlands. This does not mean the wetlands have no function or values. This means subjectively the wetlands provide lower rated functions and values compared to other wetlands in the region. The fill for the airport and access road does not impact wetlands associated with highest subjective value of fish habitat and subsistence use.

Table 4. Proposed Action Wetland and Riverine Impacts

Project Component	Fill Type	WOUS Acres Impacted	Overall Wetland Value	Cubic Yards Fill in WOUS
Section 404				
Airport	River Gravels	26.7	Low value	300,000
Access Road		21.3	Low value	160,000
Staging Areas		11.3	Low value	160,000
Pioneer Road		12.7	Low value	105,000
Total Permanent Impacts and Fill		72.1		725,000
Section 10				**Cubic Yards Excavated**
Material Site East	Excavation	1.4	In water work	1,000,000 (includes non-suitable materials)
Material Site South	Excavation	190.9		
Total Excavated Material		192.3		

Project Impacts

Floodplains: The River Material Sources (East and South) excavations would occur within the floodplain. Excavation would occur during winter months when the ground is frozen, and water is at a low-flow level. Haul activities would also occur during the winter months using ice or snow roads.

The bridge at the Kuchoruk Creek crossing would be above the 100-year flood plain (HDL, 2008). Floodplain drainage patterns would not be altered by the Proposed Action.

Surface Waters: Large-scale drainage patterns surrounding the project area would not be altered; however, localized drainage could be affected. Culverts along roads would maintain cross drainage and hydrologic function. No permanent changes to water quality are expected. The Proposed Action would

not adversely affect community water supply and would not affect long-term water quality. Water quality impacts during construction would be minimal and temporary.

Groundwater: The Proposed Action does not include subsurface excavation or construction which would affect flow and recharge of groundwater.

Wild and Scenic Rivers: No change is expected for Wild and Scenic Rivers because the nearest river segment with that designation is greater than 30 miles upriver of Noatak.

Connected Actions:
The fuel transfer system would result in additional wetland and water quality impacts that would be minimized to the extent practicable through USACE wetland permitting.

Secondary (Induced) and Cumulative Impacts:
Past, present, and future actions may result in the loss of additional wetlands or water quality impacts, although wetland permitting would reduce or minimize the extent of these impacts.

As the FAA cannot reasonably foresee what use the existing airport land and non-FAA infrastructure will have following disposal, the need for further environmental impact analysis to consider the potential water resources impacts of the existing airport property and non-FAA infrastructure will be assessed upon the ultimate land disposal determination.

9.11.2.2 No Action Alternative

The No Action alternative would not affect wetlands, floodplains, surface water, ground water, or Wild and Scenic Rivers.

9.12 Construction Impacts

9.12.1 Environmental Consequences

9.12.1.1 Proposed Action

- Significance Determination: Less than Significant

Direct and Indirect Impacts:
Construction impacts would be local in nature and occur over three full construction seasons. The Proposed Action would cause the following temporary construction impacts:

- Noise – Construction machinery and vehicle activity would temporarily increase noise along the haul routes. Although trucks would likely haul fill material around the north end of the existing airport to construct the access road, the closest residence is approximately 1,100 ft away.
- Air Quality – The operation of heavy equipment and hauling fill material can create dust during dry conditions, which may cause temporary air quality impacts. This effect would be temporary and would be controlled by BMPs.
- Water Quality – Water quality impacts during construction would be minor and short term associated with stormwater runoff on disturbed road embankments before final stabilization is complete. The Proposed Action could result in some sedimentation in streams during construction. Since the project requires more than one acre of ground disturbance, an Erosion and Sediment Control Plan and Storm Water Pollution Prevention Plan (SWPPP) would be completed prior to construction. Post-construction stabilization would include seeding/stabilizing embankment fill and other disturbed areas. A mining and reclamation plan would be prepared for the two material sites. Water withdrawals may be required for winter haul route construction, dust control, road compaction, and temporary construction camps. Water to support these activities would likely be sourced from surface waterbodies or the Noatak River; an ADF&G permit may be required.
- Airport Operations – Airport operations would not be impacted by the Proposed Action. The existing airport would remain in service only until the new airport is commissioned.
- Material Sites – Material site development would result in temporary disturbance of the active floodplain and potential fish habitat of the Noatak River. Some sedimentation and turbidity may take place, which would be minimized through the implementation of a SWPPP for the project. At each material source location, adequate setbacks from the active river channel would be maintained to not impact fish and avoid sediment outflow in the active channel. Excavation would occur during winter months when the ground is frozen, and the river waters are at a low-flow level (Appendix E). Material stockpiles would be moved out of the active floodplain before river breakup in the spring. Fish habitat is expected to be protected by conducting operations in dewatered, winter conditions; away from the mainstem of the Noatak River. A reclamation plan would be prepared for the material site during development.
- Winter Snow Road – A winter route would be constructed to facilitate overland transportation. This would include construction of snow roads and ice bridges to protect the tundra, lakes, and streams. Water withdrawal would be permitted through the Alaska Department of Natural

Resources (ADNR) (water use permit) and ADF&G (fish habitat permit) for local waterbodies. The route would experience temporary in vehicle traffic, and noise and air emissions typical of heavy machinery during use of the route.

Connected Actions:
It is anticipated the fuel transfer system would be constructed concurrently with the Proposed Action which would combine construction material and hauling needs concisely. This would reduce the overall duration of construction noise and reduce dust impacts and air emissions from combined truck hauling.

Secondary (Induced) and Cumulative Impacts:
Cumulative impacts may occur if other construction projects overlap with construction of the Proposed Action. Other projects concurrently scheduled with the construction of the Proposed Action include a fuel transfer system and a fuel truck vs. a pipeline would be used due to funding limitations. The cumulative impacts of the Proposed Action and these projects are not anticipated to have a significant adverse effect to noise, air quality, water quality, or airport operations.

9.12.1.2 No Action Alternative

The No Action Alternative would not result in construction impacts.

9.13 Summary of Environmental Commitments & Mitigations

The following environmental commitments, consisting of applicable standard operating procedures and best management practices, would be included as part of the proposed action to reduce environmental impacts:

- Measures to control sedimentation and turbidity will be minimized through the implementation of a SWPPP for the project.
- At each material source location, adequate setbacks from the active river channel will be maintained to not impact fish or their habitats, and to avoid release of sediment outflow in the active channel.
- Material stockpiles will be moved out of the active floodplain before river breakup in the spring.
- Fish habitat will be protected by conducting operations during dewatered, winter conditions and away from the mainstem of the Noatak River.
- A mining and reclamation plan will be prepared for the material sites during development.

- Impacts to fish other than EFH will be mitigated as required by the ADF&G Fish Habitat Permit.
- DOT&PF will require the construction contractor to comply with the MBTA and provide the USFWS recommended time-period to avoid vegetation clearing (May 1-July 15) as a method of compliance. Ground disturbance will occur while the ground is still frozen, and geotextile will be placed to deter nesting during the subsequent breeding season.
- To minimize the introduction of additional invasive species to the area, the contractor will comply with Executive Order 13112 to mitigate invasive species by; 1) ensuring that ground disturbing activities are minimized, and disturbed areas are re-vegetated with seed recommended for the region by Alaska Department of Natural Resources (ADNR)'s A Revegetation Manual for Alaska; 2) construction equipment will be inspected and cleaned prior to enter and exiting the construction site to minimize spread of vegetative materials; and 3) erosion and sediment control materials will be locally produced products to minimize potential importation of new propagules from outside Alaska.
- Prior to construction, the contractor will develop a Best Management Practice (BMP)-based Solid Waste and Hazardous Material Control Plan to address hazardous materials management, including storage, handing, and cleanup of potential fuel and lubricant spills.
- Once the airport is relocated, that portion of the existing airport property will revert to Federal ownership. Existing avigation easements will be reverted to NANA.
- The contractor will be required to protect utilities, repair any damage caused by their activities, and maintain community roads associated with the haul route.
- Excavation will occur during winter months when the ground is frozen, and water is at a low-flow level.
- Haul activities will also occur during the winter months using ice or snow roads.
- Air quality impacts will be controlled by BMPs.
- An Erosion and Sediment Control Plan and Storm Water Pollution Prevention Plan (SWPPP) will be completed prior to construction.
- Post-construction stabilization will include seeding/stabilizing embankment fill and other disturbed areas.

The following environmental mitigations would be included as part of the proposed action to mitigate environmental impacts:

- As the FAA cannot reasonably foresee what use the existing airport land and non-FAA infrastructure, or anticipate the landfill relocation decision by the community, the FAA will assess the need for further environmental impact analysis upon the ultimate land disposal determination and the Noatak community's landfill relocation decision. If further environmental impact analysis is determined to be required, this EA will be supplemented or re-evaluated as necessary.
- As the FAA cannot reasonably foresee what use the existing airport land and non-FAA infrastructure will have following disposal, the contamination at the existing airport property and non-FAA infrastructure will be addressed as part of the ultimate land disposal determination to prevent a release of hazardous material into the environment.
- Transfer of existing airport property may require remediation of onsite REC's that will be determined through further site investigation. Mitigation will be completed through required remediation actions according to an approved ADEC plan, such as a Contaminated Materials Management Plan.

9.14 Permits and Authorizations

9.14.1 Proposed Action

The permits and authorizations listed in the following table, unless otherwise noted, will be obtained for the Proposed Action prior to construction to comply with applicable federal, state, and local regulations:

Table 5. Permits and Authorizations

#	Permit/Authorization; Agency	Why Permit/Authorization is Required
Federal Permits and Authorizations		
1	Section 404 Clean Water Act Wetland Fill Permit; USACE	Project elements were designed to avoid and minimize wetland impacts to the maximum extent practicable. A Section 404 individual permit will be obtained prior to construction for the placement of fill within jurisdictional wetlands and waters of the U.S.
2	Migratory Bird Treaty Act compliance; USFWS	USFWS recommendations will be followed by the construction contractor to avoid migratory bird take during vegetation clearing.
3	Magnuson-Stevens Fishery Conservation and Management Act EFH consultation and assessment; NMFS	DOT&PF prepared an EFH Assessment to describe potential EFH impacts and propose conservation measures to reduce impacts. Based on EFH consultation with NMFS, the proposed project actions are not likely to adversely affect threatened or endangered species or critical habitat (Appendix D).

#	Permit/Authorization; Agency	Why Permit/Authorization is Required
4	ESA Section 7; USFWS	Section 7 consultation with USFWS covers potential impacts to Spectacled and Steller's Eiders and Polar Bear Critical Habitat. USFWS has concurred with a finding of not likely to adversely affect listed species or critical habitat under USFWS jurisdiction (Appendix E).
5	MMPA Consultation; NMFS	Consultation with NMFS covers potential impacts to marine species that may be encountered along project specific barge routes (if required). NMFS has concurred with a finding of not likely to adversely affect marine species or critical habitat under NMFS jurisdiction (Appendix E).
6	Section 4(f) U.S. Department of Transportation Act; NPS and SHPO	There are no feasible and prudent alternatives that meet the project's purpose and need which avoid CKNHL use. A Section 4(f) *De Minimis* Finding and consultation with the NPS and SHPO was completed to verify the Proposed Action will not have adverse effects to the CKNHL.
7	Government to Government Consultation	Consultation in accordance with Executive Order 13175 was conducted with the Native Village of Noatak to obtain meaningful and timely input regarding proposed FAA actions and address relevant community concerns/issues.
State Permits and Authorizations		
8	Section 106 Consultation; SHPO, Tribes, and Consulting Parties	Section 106 compliance is required as part of NEPA and provides for the identification and protection of cultural and historic resources that are listed or eligible for listing in the National Register of Historic Places. Consultation has been completed with SHPO, Tribes, and other consulting parties, with mitigation measures and agreements amongst stakeholders completed. The SHPO concurred with FAA's finding of no historic properties adversely affected.
9	Section 401 Certification – Certificate of Reasonable Assurance; ADEC, Division of Water Quality	A 401-water quality certification would be issued prior to the USACE 404 permit and will notify compliance with state water quality administrative code. Measures to protect water quality in accordance with permit stipulations will include the use of BMPs to minimize potential for erosion and sedimentation of wetlands and waterbodies.
10	Material Site Designation; ADNR, Division of Mining Land and Water (DMLW)	To develop a new material site within state-owned lands, ADNR DMLW will need to designate those sites as material sites/sources which will require a decision that this is in the best interest of the State of Alaska.
11	Alaska Pollutant Discharge Elimination System (APDES) Construction General Permit (CGP); ADEC, Division of Water Quality	For projects with disturbance of over 1 acre, compliance with the APDES CGP is required. A SWPPP and notice of intent to seek coverage under the CGP will be required prior to construction. The CGP requires implementation of BMPs to protect water quality during construction.
12	Title 16 Fish Habitat Permit; ADF&G	A Title 16 permit will be required for project activities occurring below ordinary high water of a fish bearing stream. Measures to maintain fish passage, and avoid and minimize impacts to fish and their habitats, within these waters will be implemented in consultation with ADF&G.
13	Temporary ROW interests; NANA, ADNR, and private landowners	All required temporary ROW interests for project activities will be obtained from the landowners.
Local Permits and Authorizations		

#	Permit/Authorization; Agency	Why Permit/Authorization is Required
14	Title 9 Land Use Permit; NAB, Planning Department	The Proposed Action is within the NAB and will require a Title 9 Permit.

9.14.1.1 No Action Alternative

No permits or clearances would be needed under the No Action Alternative.

10.0 PUBLIC INVOLVEMENT AND AGENCY COORDINATION

The public, numerous agencies, the Native Village of Noatak, and various local entities were consulted throughout project planning and design. Public and agency involvement for this project has been ongoing since the 2004 formal request for assistance from the Native Village of Noatak IRA Council. Public involvement has been used to inform the purpose and need and alternatives analysis within this EA. Table 6 summarizes the tasks and activities undertaken to ensure involvement and coordination. Project scoping correspondence, materials, and available meeting notes are included in Appendix E.

Table 6. Public Involvement and Agency Consultation Activity

Date	Activity	Description
11/2/2004	Tribal Resolution 04-08	The Native Village of Noatak IRA Council (Noatak IRA) formally requested DOT&PF and FAA assistance with planning, design, and construction of a new airport.
11/18/2004	Public Meeting	DOT&PF held a public meeting in Noatak to discuss airport relocation options.
12/10/2004	Public Questionnaire	Tribal members of the Noatak IRA were interviewed about the airport relocation.
3/6/2006	Agency Scoping Letters	DOT&PF issued letters to local governments, Tribal entities, Federal and State agencies, and staff describing the project and soliciting comments. Comments were received from ADNR, USACE, USFWS, and DOT&PF.
3/7/2006	Government to Government Consultation Initiation	FAA issued a letter to the Noatak IRA describing the project and requesting comments and input on future coordination.

Date	Activity	Description
7/24/2006	Public Meeting	DOT&PF held a public meeting in Noatak to update residents on the airport relocation project.
8/10/2006	Public Service Announcement	DOT&PF issued a public service announcement concerning the upcoming public meeting.
8/14/2006	Newsletter	DOT&PF issued a newsletter to Noatak residents concerning the upcoming public meeting.
8/17/2006	Public Meeting	DOT&PF held a public meeting in Noatak to update residents on the airport relocation project.
10/22/2007	Meeting	DOT&PF held a meeting with NANA on the airport relocation project.
10/31/2007	Section 106 Initiation of Consultation Letter	DOT&PF issued a letter to the SHPO requesting concurrence that cultural resources would not be impacted by the project.
11/7/2007	EFH Letter	DOT&PF issued a letter to NMFS requesting concurrence that EFH would not be impacted by the project.
9/24/2009	Public Meeting	DOT&PF held a public meeting in Noatak to update residents on the airport relocation project.
3/25/2015	Public Meeting	DOT&PF held a public meeting in Noatak to update residents on the airport relocation project.
04/28/2016	Meeting	DOT&PF held a meeting with NAB and Noatak IRA to update them on the airport relocation project.
11/22/2017	Agency Scoping Letters	DOT&PF, on behalf of FAA, issued letters to local governments, Tribal entities, Federal and State agencies, and staff describing the project and soliciting comments.
11/27/2017-12/22/2017	Agency Comments	Agency comments were received from agency scoping letters and DOT&PF responses.

Date	Activity	Description
1/23/2018	Meeting	DOT&PF held a meeting with NANA to provide an update to the organization on the airport relocation project.
02/20/2018	Section 7 Consultation	DOT&PF, on behalf of FAA, issued letters to NMFS and USFWS requesting determinations on Section 7 Consultation.
03/07/2018	Meeting	DOT&PF, FAA, and Stantec held a teleconference with NPS and BLM to discuss overland haul route alternatives.
03/22/2018	USFWS Letter to FAA	Section 7 Consultation
03/26/2018	FAA Scoping Response	FAA responded to DOT&PF regarding the scoping comments solicitation.
10/10/2018	Meeting	DOT&PF held a meeting with Noatak IRA officials to gather input on the updated Proposed Action elements including the overland haul route to DMTS.
10/12/2018	Meeting	DOT&PF held a meeting with USFWS to discuss updated Proposed Action elements and gather USFWS input.
10/12/2018	Meeting	DOT&PF held a meeting with ADF&G to discuss updated Proposed Action elements and gather ADF&G input.
10/30/2018	Meeting	DOT&PF held a meeting with NPS to discuss updated Proposed Action elements and gather NPS input.
02/21/2019	Section 106 Initiation Letters	DOT&PF, on behalf of FAA, issued letters to SHPO and other consulting parties to confirm concurrence that no historic properties would be affected by the Proposed Action.
02/21/2019	Government-to-Government Consultation Initiation	FAA issued a letter to the Noatak IRA describing the project and requesting comments and input on future coordination.

Date	Activity	Description
02/22/2019	MMPA Letter	FAA issued a letter to NMFS requesting determinations on ESA Section 7 Consultation.
08/26/2021	Section 106 Findings Letters	DOT&PF, on behalf of FAA, issued letters to SHPO and other consulting parties to confirm concurrence that no historic properties would be affected by the Proposed Action.
09/22/2021	Section 106 Finding Concurrence	SHPO concurred with the finding of No Historic Properties Adversely Affected and requested an inadvertent discovery plan distributed to NPS and the AK State Medical Examiner.
10/06/2021	Section 106 Finding Concurrence	NPS concurred with the finding of No Historic Properties Adversely Affected.
02/08/2022	Tribal Resolution 20-23	The Noatak IRA signed a resolution supporting the draft environmental document Proposed Action elements.
06/16/2022	Section 4(f) *De Minimis* Determinations	FAA issued a letter to the NPS with the Section 4(f) *de minimis* determination and requested NPS concurrence.
07/21/2022	Section 4(f) *De Minimis* Determinations Concurrence	NPS concurred with FAA's Section 4(f) *de minimis* determinations and *de minimis* impact finding that the project will not adversely impact the CKNHL.

11.0 LIST OF PREPARERS

The following individuals were primarily responsible for the content of this EA, or for providing senior management leadership during the development and production of this document:

Preparer	Title and/or Role
Christopher Johnston, P.E.	DOT&PF, Project Manager
Lindsey Webb, P.E.	DOT&PF, Designer
Melanie Bray	DOT&PF, Designer

Melissa Jensen	DOT&PF, Environmental Impact Analyst
Paul Karczmarczyk	DOT&PF, Environmental Impact Analyst (Retired)
Sara Lindberg	Stantec, Environmental Resources Manager
Kacy Hillman, PWS	Stantec, Environmental Scientist
Victor Ross	Stantec, Principal Regulatory Specialist
Kristi Warden	FAA, Alaska, Region, Airports Division, Director
Rodney Clark	FAA, Alaska Region, Airports Division, Deputy Director
Laura Sample	FAA, Alaska Region, Airports Division, Environmental Protection Specialist

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APPENDIX A

FAA AND DOT&PF CORRESPONDENCE

Page

Federal Aviation Administration

Memorandum

Date: MAR 07 2018

To: Carl Lapray, Acting Manager, Technical Operations, Anchorage District, AJW-WQ

From: TN FOR CHRIS
Christine Chesak, Manager, Requirements Team, Planning and Requirements Group, Service Area Decommissioning Committee Chairperson, Western Service Center, AJV-W38

Prepared by: Kevin Frisby, NISC Contract Support, Requirements Specialist, Requirements North Team, Planning and Requirements Group, Western Service Center, AJV-W38

Subject: Approval of the Discontinuance of the Noatak Non-Directional Beacon and Distance Measuring Equipment at Noatak, Alaska

The Service Area Decommissioning Committee (SADC) has reviewed the request for removal of the Noatak Non-Directional Beacon (OQK NDB) and Distance Measuring Equipment (DME) at Noatak Airport (WTK) near Noatak, Alaska.

A comprehensive study of decommissioning the OQK NDB and DME was accomplished. The Noatak Airport is being relocated and decommissioning will spare the relocation costs of the NDB. The WSA SADC has approved decommissioning. The effective date is To Be Determined upon completion of the airway redesign, Rulemaking, and Safety Risk Management review.

a. State – Alaska
b. City – Noatak
c. Airport – Noatak Airport
d. Airport Identifier – WTK
e. Facility –Noatak NDB and DME
f. Identifier – OQK
g. Discontinuance Date – TBD

For more information, please contact Jeremy Cook, Requirements Specialist, Requirements North Team, Planning and Requirements Group, SADC Co-Chairperson, Western Service Center, at 425-203-4689.

cc:

WWQ!-FAI (N Alaska Group)
AJW-W15 (Operations Engineering)
AJW-3343 (FICO)
AJV-W2 (Western OSG)
AJV-W34 (NPI)
AJV-W43 (FSEP)
WWQ16-ANC (NW Alaska SSC)
AJV-W3 (PRG)
AJV-W24 (Western FPT)
AJW-W2 (Tech Services)
AJV-W13 (QCG)

Federal Aviation Administration

Memorandum

Date: March 21, 2023

To: Kristi Warden, AAL-600

From: Evelyn Martinez, APP-1 (Acting)

Michael Hines, APP-400

Dave Cushing, APP-500

Prepared by: Benjamin Mello and Kent Duffy, APP-400

Subject: Noatak Airport Replacement Airport Runway Length Justification

Purpose

The existing Noatak Airport (WTK) needs to be relocated as the current location of the airport sits on the banks of Noatak River, which is experiencing bank erosion due to permafrost thaw[1]. Noatak is not connected by a road system, so its airport provides the sole transportation method for fuel, groceries, and all other commodities for the community. The replacement airport seeks a similar runway length to the existing airport of 4,000 feet, in order to support continued operation of cargo aircraft that deliver vital supplies to the community. The requested runway length exceeds the normal runway length calculated for the critical aircraft of 3200 feet, via application of FAA Order 5100.38 *AIP Handbook*, AC 150/5000-17 *Critical Aircraft and Regular Use*, and AC 150/5325-4B, *Runway Length for Airport Design*. For this reason, a specific determination is required by APP-1 for construction of the requested runway length of 4000 feet using AIP funds, since it exceeds the length of the critical aircraft.[2] AAL RO, APP-400 and APP-500 support this determination.

Background

Noatak is located in the Northwest Arctic Borough with a population of 570 according to the 2020 Census. It is the only settlement on the 400-mile long Noatak River. Climate change is altering the Noatak River by reducing water levels in the summer; this causes permafrost subsistence and erosion year round. Since Noatak is isolated, is only

[1] Climate Change in Noatak, Alaska, ANTHC -- https://anthc.org/wp-content/uploads/2016/01/CCH_AR_062011_Climate-Change-in-Noatak.pdf

[2] Section 3-11. The Use of Critical Aircraft for Justification.

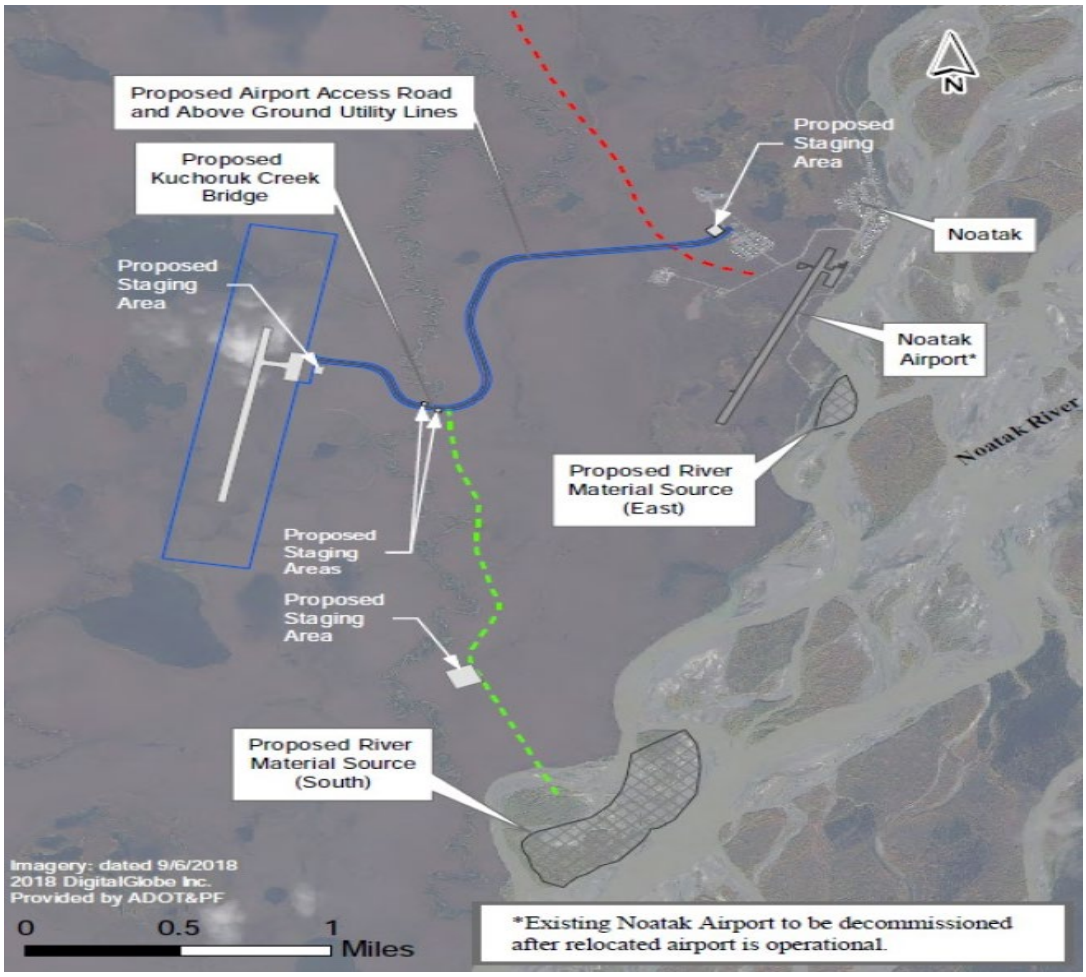
connected to the regional ice road system seasonally, and the river no longer provides barge service due to shallow depths, its airport plays a vital role in providing access to food, fuel, and other commodities for the community.

The existing Noatak Airport (WTK) is classified as a non-hub commercial service airport under NPIAS criteria. WTK is owned and operated by the Alaska Department of Transportation (ADOT). The airport has one gravel runway, Runway 1/19, 3,992' x 60' with Medium Intensity Runway Lightss. RNAV approaches are available to both runway ends. The critical aircraft is a Cessna 208B Grand Caravan (C208), an A-II small turboprop, which provides scheduled service several times a week to/from the village.

The attached documentation from ADOT describes how the airport is vital to the continued existence of the Noatak community.

Replacement Airport Runway Length Needs

As shown on the figure below, the replacement airport (+099) will be constructed approximately 1.5 miles west of the existing airport. It is anticipated that the existing critical aircraft (C208) will continue to be the critical aircraft. Using AC 150/5325-4B, ADOT has calculated a runway length of 2,800' for use by small aircraft. APP-410 calculates a runway length of 1900' for the C208 using the aircraft's flight manual. However, a minimum runway length of 3200-feet is normally needed for RNAV approaches per FAA Order 8260, TERPS. Accordingly, a runway length of 3200-feet would be justified for AIP funding using the typical parameters.



Based on communication between the ADOT, Everts Air Cargo, and Lynden Air Cargo (the cargo operators who service the Noatak village), the operator's preferred minimum runway length is 5,000' for their DC-6 and the C-130 aircraft. Everts Air Cargo delivers most of the community's fuel by DC-6 aircraft. On a fuel delivery day, Everts flies round trips from Kotzebue 50 miles to the south to Noatak, transporting fuel from Kotzebue's bulk fuel facility. Other large freight is often transported by Lynden Air Cargo C-130s. The C-130 is used to transport large and heavy building materials that will not fit in the smaller aircraft. The DC-6 and C-130 aircraft also operate for on-demand cargo and yearly for the seasonal construction of the Ice Road to Kotzebue (AK). Using FAA TFMSC data, the AAL RO indicates there are about 24 annual operations of these aircraft types at WTK.

At WTK, the cargo aircraft are typically landing with significant payload (and then departing with less weight after offloading), and have demonstrated the ability to operate safely on the existing runway of about 4000-feet. ADOT concurs that a runway

length of 4000-feet has historically proven adequate to support the occasional yet vital air services needed to transport cargo to roadless communities. Effectively, construction of a 4000-foot runway at the replacement airport is maintaining the same essential minimum capability that exists at the current airport.

Determination

APP concurs that a runway length of 4,000-feet is essential for continuation of vital air cargo service to the community of Noatak at its replacement airport. A shorter runway length would jeopardize the occasional cargo service provided by larger aircraft to transport vital supplies to the community. This would likely result in increased cost of goods and transportation in a location that already is hindered by high cost of living. The additional runway length needed is a modest 800-feet longer than AIP's normal parameters under AC 150/5000-17 and AC 150/5325-4B. AIP participation to construct a 4,000-foot runway is justified to meet the public need.

Attachments:
Email from Jonathan Linquist, dated 01/12/23, to submit AAL RO request
ADOT correspondence on runway length rational at WTK

CC:
APP file for WTK and replacement airport
Lisa Holden, APP-2 (acting)
Luis Loarte, APP-410

From:	Linquist, Jonathan (FAA)
To:	Hines, Michael (FAA); Reinhardt, William (FAA); Duffy, Kent (FAA)
Cc:	Warden, Kristi (FAA); Clark, Rodney (FAA); Moss, Katrina (FAA); Zettler, Patrick (FAA); Sanches, David J (FAA); Mamrol, Peter J (FAA)
Subject:	Request for APP-400 Concurrence - Runway length at Noatak (WTK) Replacement Airport
Date:	Thursday, January 12, 2023 11:26:59 AM
Attachments:	Noatak Runway Length.pdf

Good morning Mike and all,

The Alaska Region requests concurrence from APP-400 on the subject of runway length justification at the Noatak Airport (WTK) in remote northwest Alaska.

Airport relocation is being planned in the near-term at Noatak due to the vulnerabilities of existing airport infrastructure to riverbank erosion [replacement airport approved by APP-1 on 1/31/2008]. As part of the relocated airport planning, the sponsor will be requesting AIP-participation in the construction of a similar-length runway for the new airport as exists at the current airport. This runway length appears to be in excess of that required for the regular-use critical aircraft as evaluated per AC 150-5325-4B *Runway Length Requirements for Airport Design*.

The airport sponsor has presented a compelling argument for the investment in a runway length that's needed to support aircraft with fewer than 500 annual operations. The Alaskan Region Airports Division has received this argument as valid and compelling. As such, the division is seeking concurrence from APP-400 for unique justification of the requested runway length at Noatak. A document containing the information submitted from Alaska DOT&PF (the airport sponsor) is attached to this email. A brief summary of the main points is presented below:

- The existing airport at Noatak is 4,000 feet in length and receives passenger/mail service on close to a daily schedule, a route predominately flown by small category A-II aircraft, which the sponsor has calculated requires a 2,800' runway.
- The Native Village of Noatak is not connected to any road system, and no barge service is available to support the delivery of essential fuel and supplies – leaving air service as the only viable transportation option.
- All fuel and material needed to support the community is currently flown into the existing airport on large cargo aircraft (C-130 and DC-6). These operations are relatively few (estimating an average of 24 per year based on IFR traffic counts between 2002-2022) but are critical to the viability of Noatak.
- These large cargo aircraft typical of regional freight deliveries require longer minimum runway length to operate, and generally do not operate at airports with runway lengths shorter than 4,000 even with weight restrictions.

Construction of a minimum 4000-foot runway at Noatak is justified for AIP participation, as this will allow for the relocated airport to continue to support critical public need that is met by these cargo aircraft operations.

Thanks,

//Signed//
JONATHAN LINQUIST
Lead Community Planner
FAA Alaskan Region Airports Division
Tel: 907-271-5040

FAA comment: Based on AC150/5325, the critical aircraft assumed for Noatak does not appear to justify the construction of a 4,000-foot runway. Provide analysis to support this runway length, or provide documentation on why this runway length would be justified for AIP participation.

DOT response:

The public need at Noatak demonstrates that Federal investment is justified for airport facilities beyond the AIP-defined Critical Aircraft.

The FAA NPIAS lists Noatak as a commercial service, local non-primary airport. The existing 3992' gravel-surfaced runway serves as the sole transportation method for fuel, groceries, and all other commodities for the community. Noatak is isolated and not connected by a road system to the surrounding communities. Although Noatak is located long a river it has no barge service due to the shallow river depth. The 2020 census indicates 570 people live in Noatak.

Scheduled air service is provided several times a week for mail and passengers using a Cessna 208B Grand Caravan, which meets the threshold for critical aircraft* by exceeding 500 annual operations (per Advisory Circular 50/5000-17). The Grand Caravan is classified as an A-II small aircraft. Following guidelines of AC 150/5325-4, the recommended runway length for this aircraft is 2,800' (following Figure 2-1, considering "95% of fleet" at a mean daily maximum temperature of approximately 64°F, while not accounting for the gravel surface of the runway).

Noatak has one of the highest costs of living for an Alaskan community, primarily due to the reliance on expensive air transport for all essential goods and services. Disruptions in air service have led to shortages in the past, particularly fuel. Based on reporting by the Washington Post and Anchorage Daily News**, the community's 24,000 gallon fuel tanks ran dry at least twice in 2022. One account indicates a resident traveled by boat 70 miles downstream to Kotzebue to purchase and retrieve a 55-gallon drum of fuel, an undertaking that used upwards of 36 gallons of fuel to complete. The article reported the price of fuel reached $17.99 per gallon of unleaded gasoline and $12.99 per gallon of diesel in 2022. Extreme fuel prices and supply disruptions result in reduced food security as traditional subsistence activities are disrupted, possible damage to infrastructure as residents are unable to heat homes, and the threat of becoming unaffordable to live in the community. **Maintaining the level of air service is critical to meeting the public needs.**

In remote Alaskan communities runway length limits the aircraft fleet that can transport cargo. The Alaska aviation industry has developed around "bush" planes to meet the needs of these remote communities, embracing aircraft that are capable of operating on shorter, gravel-surfaced runways. Everts Air Cargo delivers most of the community's fuel by DC-6 aircraft. On a fuel delivery day, Everts flies from Fairbanks to Kotzebue and then flies round trips from Kotzebue to Noatak, transporting fuel from Kotzebue's bulk fuel facility. Other large freight is often transported by Lynden Air Cargo C-130s. The C-130 is used to transport large and heavy building materials that will not fit in the smaller regional aircraft that operate out of Kotzebue. For example, in 2007 the

* Source: FAA Traffic Flow Management System Counts (TFMSC) for calendar year 2022.
** Press articles: https://www.washingtonpost.com/nation/2022/09/23/noatak-alaska/ and https://www.adn.com/alaska-news/rural-alaska/2022/05/18/fuel-in-the-alaska-village-of-noatak-was-16-a-gallon-the-costs-are-more-than-just-money/

community built a new school building where all the construction materials had to be flown in, which resulted in thirty-five C-130 flights.

A fully loaded DC-6 requires a runway longer than 4000'. According to the August 2021 operation manual for the DC-6, the minimum landing runway length is 4150' for the maximum landing weight with flaps in full down landing position. With flaps in 40 degree landing position the minimum runway length is 5300'. The minimum runway length for max takeoff weight is also 5300'. Airport planning manuals were not available to calculate the runway length of the C-130.

Aircraft already operate at reduced capacity to transport fuel and materials to Noatak. Based on communication with Everts Air Cargo and Lynden Air Cargo, the preferred minimum runway length is 5,000' for the DC-6 and the C-130 aircraft. This preferred runway length is documented in the attached Brush Clearance memo from Lynden Air Cargo. Lynden also requested additional clearing and approach path requirements for the shorter runway length to ensure the safety of their aircraft. The existing Noatak runway length limits the takeoff weight for C-130 aircraft, requiring contractors to either dismantle equipment into smaller/lighter loads or transport items by building an ice road to Kotzebue, during the winter. The preferred minimum 5,000' runway is unavailable at many remote Alaska airports where on-demand air cargo deliveries are still needed. Runway lengths of 4,000-feet represent a compromise, and are found at many airports in Alaska for similar communities that are not connected to the road system, or have limited/no barge access. A runway length of 4,000' has historically proven adequate to support the infrequent, yet critical air services (although still leaving small margins of error for these pilots of larger aircraft).

A shortened runway length would have significant impacts on Noatak, jeopardizing the regional cargo aircraft service currently available to the community. This would cause increased cost of goods and transportation in a location that already is hindered by high cost of living. Therefore, federal investment through the AIP program should allow an exception to the FAA policy of AIP Handbook paragraph 3-11, *The Use of Critical Aircraft for Justification,* at the Noatak Airport. AIP participation for funding the modest runway length in excess of the regular-use aircraft runway length to reinstall a 4,000-foot runway is justified to meet the critical public need.

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Transportation and Public Facilities

NORTHERN REGION
Design & Engineering Services
Right of Way

2301 Peger Road
Fairbanks, AK 99709-5388
Main: 907-451-2273
Fax: 907-451-5411
TDD: 907-451-2363
dot.alaska.go

November 27, 2023

Molly Fierro
FAA Compliance Manager, Alaska Region
222 W 7th Ave, 3rd Floor
Anchorage, AK 99513-7587

Re: Noatak Airport Relocation
Z614780000
DOT Release & Reinvestment Request

Dear Molly:

General Information

DOT proposes to acquire control of approximately 323 acres of lands from NANA Regional Corporation in order to relocate the existing airport in Noatak Alaska. NANA Regional Corporation has requested that disposal of the existing airport lands be required as part of any agreement to convey any new land interests to DOT in Noatak. DOT feels that this request is reasonable and benefits FAA, DOT, and the community of Noatak as further explained below.

Title Information

Tract I-A: Owned by DOT in fee via Patent 1229347, containing 116.43 acres (Lot 2, USS 3778). Currently includes a requirement for reversion to the United States if the lands "…cease to be used, for public airport purposes…" In addition to the approval of the land disposal, DOT is requesting that FAA use its discretion to waive this reversionary requirement.

Tracts I-B, I-C & I-D: Owned by DOT as an easement and restrictive covenant (surface estate) and perpetual subsurface easement and restrictive covenant (subsurface estate) containing a total of 9.60 acres. Both the easement and subsurface easement include requirements for reversion to NANA Regional Corporation "…in the event the land herein described ceases to be used for public airport purposes."

Benefits

The existing Noatak airport is immediately adjacent to the community of Noatak and upon completion of the new airport would represent a significant development opportunity for the community. There is no intention on the part of DOT to maintain any airport services in this location upon completion of the new airport. There are no apparent military uses of the property available.

FAA requires that fair market value be obtained for any disposal of lands as well as the reinvestment of those funds into the existing airport system. Disposal of airport property in rural Alaskan communities has proven to be difficult to accomplish in many cases. These communities frequently do not possess the resources to buy these lands at fair market value, and/or have strong opinions about any requirement to do so, nor are there any other realistic buyers for these lands.

There is effectively nothing like a typical real estate market in rural Alaskan communities for lands which are not known to contain underground resources. Lands in these communities are most commonly exchanged within families or to those directly associated with the local community. The consideration for these exchanges frequently do not represent arm's length transactions and are rarely, if ever, reported publicly in any manner. It is extremely difficult to value rural Alaskan lands because of the lack of market data available for comparison analysis.

Any lands disposed by DOT as part of any agreement to purchase new land interests in rural Alaska represents the best, and potentially only, opportunity that may be available for DOT to obtain full fair market value for them. Additionally, those funds would immediately be reinvested in the airport system by reducing the costs of acquiring the property interests required to construct the new airport.

DOT frequently enters into perpetual lease agreements with local government entities in compliance with FAA "good title" requirements as is expected to be the final result for acquisition of the new Noatak airport property. While these agreements may or may not lack a value within a real estate market, DOT retains the authority to dictate any terms for disposal of the property interest at the time of any proposed disposal by possessing the unilateral ability to determine what constitutes discontinued use.

Anticipated DOT Process for Acquisition and Disposal

1. Obtain approval from FAA to dispose of Noatak Airport Tracts I-A, I-B, I-C & I-D.
2. Perform internal disposal review and receive appropriate approvals.
3. Obtain approval from FAA to waive Section 16 reversionary requirement present in the patent for Tract I-A.
4. Obtain title reports for both the property to be acquired and the property to be disposed.
5. Obtain appraisals for both the property to be acquired and the property to be disposed.
6. Make a fair market value offer to NANA for a fee interest in the new airport lands.
7. Expected counter offer from NANA to include the following conditions;
    a. NANA conveys the surface estate in the subject lands to a public entity for the purpose of that entity entering into a perpetual lease agreement with DOT in satisfaction of FAA rules regarding "good title".
    b. DOT agrees to dispose of all of its existing interest in the old airport properties at the time that the new airport becomes operational.
    c. NANA agrees to reduce the offer amount by the amount of the fair market value appraisal for the properties to be disposed, or other agreed upon amount.
8. Upon first operation of the new airport, as stipulated in the signed agreement, DOT records a commissioner's quitclaim deed finalizing the disposal of the old airport property.

Sincerely,

Daniel Pistor
Right of Way Agent III

Enclosure

Noatak Tract I-A Patent
Noatak Tract I-B, I-C & I-D Surface Easement
Noatak Tract I-B, I-C & I-D Subsurface Easement
Noatak Property Plan

6.05b-1L
Fairbanks 022505

BOOK 26 PAGE 23
Noatak - Kobuk Recording District

NOATAK - KOBUK
Serial No. 62-403

PATENT

THE UNITED STATES OF AMERICA, acting through the Secretary of the Interior, pursuant to the authority contained in section 16 of the Federal Airport Act, approved May 13, 1946 (60 Stat. 179; 49 U.S.C. 1115), as amended by section 1402 (b) of the Federal Aviation Act of 1958 (72 Stat. 806), and in conformity with Executive Order No. 10536 of June 9, 1954, hereby gives and grants a patent to the State of Alaska, and to its successors in function, for the following described lands:

> Lot 2 of United States Survey Number 3778, Alaska, containing 116.43 acres, according to the official plat of the survey of the lands on file in the Bureau of Land Management, Department of the Interior.

There are excepted from this patent and reserved to the United States all minerals in the lands, together with the right of the United States through its authorized agents, representatives, or lessees at any time to enter upon the lands and prospect for, mine, and remove such minerals, insofar as such right does not interfere with the development, operation, and maintenance of the airport to be constructed upon the lands by the State of Alaska, as determined by the Secretary of the Interior and the Administrator of the Federal Aviation Agency.

TO HAVE AND TO HOLD the lands included in this patent, together with all rights, privileges, immunities, and appurtenances of whatsoever nature, thereunto belonging unto the State of Alaska, and to its successors in function forever; subject, however, to (1) any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights, as may be recognized and acknowledged by the local customs, laws, or decisions of the courts; (2) a right-of-way for ditches or canals constructed under the authority of the United States, as authorized by the act of August 30, 1890 (26 Stat. 391; 43 U.S.C. 945); and (3) a right-of-way for the construction of railroads, telegraph and telephone lines, in accordance with the act of March 12, 1914 (38 Stat. 305; 48 U.S.C. 301-308).

State of Alaska
SERIAL NO.
ADA 10147
Dept. of Public Works
Division of Aviation

1229347

The property interest hereby conveyed shall automatically revert to the United States pursuant to section 16 of the Federal Airport Act, in the event that the lands in question are not developed, or cease to be used, for public airport purposes; and a determination by the Administrator of the Federal Aviation Agency, or his successor in function, that the lands have not been developed, or have ceased to be used, for public airport purposes shall be conclusive of such fact.

The State of Alaska does by the acceptance of this patent covenant and agree for itself, and its successors in function, forever, as follows:

1. The State of Alaska will use the land herein conveyed for airport development.

2. The airport to which such development relates, together with its appurtenant areas, buildings, and facilities, whether or not on the land herein conveyed, will be operated as a public airport upon fair and reasonable terms, without discrimination on the basis of race, color, creed, or national origin, as to airport employment practices, and as to accommodations, services, facilities, and other public uses of said airport.

3. Any subsequent transfer of the property interest conveyed hereby will be made subject to all the covenants, conditions and limitations contained in this instrument.

4. In the event of a breach of any condition or covenant herein imposed, the Administrator of the Federal Aviation Agency, or his successor in function, may immediately enter and possess himself of title to the herein conveyed lands for and on behalf of the United States of America.

5. In the event of a breach of any condition or covenant herein imposed, the State of Alaska, or its successors in function, will, upon demand of the Administrator of the Federal Aviation Agency, or his successor in function, take such action, including the prosecution

Book 26 page 25

6.05b-1L
Fairbanks 022505

of suit, or execute such instruments, as may be necessary or required to evidence transfer of title to the herein-conveyed lands to the United States of America.

IN TESTIMONY WHEREOF, the UNITED STATES OF AMERICA, by its Secretary of the Interior, has hereunto subscribed its name and affixed the seal of the United States Department of the Interior this 1st day of March, 1962

UNITED STATES OF AMERICA

Secretary of the Interior

APPROVED this 24th day of October, 1962

Ass't Attorney General, United States of America
Pursuant to Order No. 273-62 issued by the Attorney General on June 14, 1962 (27 Fed. Reg. 5795; 28 C.F.R. 0.67)

Recorded: Patent No. 1229347

RECORDED - FILED
Noatak-Kobuk REC. DIST.
DATE December 1, 1962
TIME 7:05 P.M.
Requested by United States of America
Address Division of Aviation
Anchorage, Alaska

State of Alaska
SERIAL NO.
ADA 10147
Dept. of Public Works
Division of Aviation

Filed & Recorded
By: Fletcher J. Grey
Deputy Magistrate & Recorder
P.O. Box 259
Kotzebue, Alaska

BOOK 42 PAGE 548
Kotzebue Recording District

EASEMENT AND RESTRICTIVE COVENANT

This indenture is entered into this 14th day of February, 1994 by and between NANA Regional Corporation, Inc., as successor in interest to Noatak Napaaktukmeut Corporation, an Alaskan Regional Corporation (hereinafter referred to as the GRANTOR), and the STATE OF ALASKA, DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES (hereinafter referred to as the GRANTEE). The mailing address of the GRANTEE is 2301 Peger Road, Fairbanks, Alaska 99709-5399. The mailing address of the GRANTOR is 1001 East Benson, Anchorage, Alaska 99508.

In consideration of Five thousand eight hundred and 00/100 dollars DOLLARS ($ 5,800.00) and other good and valuable consideration, the sufficiency of which is hereby acknowledged, the GRANTOR, its successors or assigns, does hereby grant, convey and set-over unto the GRANTEE, its successors in function or assigns, for the use and benefit of the public, a perpetual EASEMENT AND RESTRICTIVE COVENANT, appurtenant to the Noatak Airport, for the unobstructed passage of all aircraft by whomsoever owned and operated, in the airspace in, over and upon those certain lands designated as Tract I, Parcels C and D of the Noatak Airport lying and being within Sections 16, 17, 20 and 21, Township 25 North, Range 19 West, Kateel River Meridian located in the Kotzebue Recording District, Second Judicial District at Noatak, Alaska and more particularly described in the Exhibits A and B attached hereto and made a part hereof.

The GRANTEE, its successors and assigns, shall have the right to clear and keep clear the land and property described herein from any and all obstructions and permanent structures. The right to clear and keep clear includes, but is not limited to, the right to cut and remove trees, underbrush, soil, berms, hills, irregularities in the topography, stockpiles and rocks and to demolish or remove buildings or any other structures or obstructions of every description, the right to prohibit use on and remove from the land described herein any installation or object which would create electrical interference with radio communication between the airport and aircraft, and anything which may make it difficult for pilots to distinguish between airport lights and other lights, result in glare in the eyes of pilots using the airport, impair visibility in the vicinity of the airport, or otherwise endanger the landing, taking off or maneuvering of aircraft. The GRANTEE shall have sole authority and discretion to make all decisions to clear and keep clear land and property, and said decisions shall be final, and may not be subject to dispute by the GRANTOR.

The GRANTEE, its successors and assigns shall have the right to install navigational aids on the lands described herein for the safe operations of the Noatak Airport.

Without waving compliance with applicable Federal and State laws and regulations concerning air and water quality, or any rights it may have under applicable law, the GRANTOR covenants that it is aware of the fact that the operations and maintenance of aircraft is inherently noisy, dusty, and frequently accompanied by fumes. These premises considered and understood, the GRANTOR recognizes that such noise, dust and fumes are inherent in the operation of this airport.

The GRANTOR reserves the right of access through the real property described herein.

The GRANTOR, covenants on its own behalf, and for its successors and assigns, that the surface estate of the real property described herein shall not be developed for any purpose other than public access through the property. The location and design of said access must be approved in writing by the GRANTEE prior to any construction. Public access through the property may be relocated by the GRANTEE to meet airport design, safety and security criteria.

The GRANTOR warrants that there are no liens, encumbrances, charges or claims affecting the surface estate of the land conveyed herein which were created by or are a result of any action taken by the GRANTOR. GRANTOR further warrants there are no liens, encumbrances, charges or claims, present or future, affecting the surface estate conveyed herein which pertain to Section 14(c)(1) or 14(c)(2) of the Alaska Native Claims Settlement Act (ANCSA). The GRANTOR makes no further warranties as to the estate subject to this conveyance or other claims arising under ANSCA.

The GRANTEE, its successors or assigns shall have the right of reasonable ingress and egress for the purpose of affecting and maintaining the rights granted in this easement.

This easement shall run with the land and the GRANTOR will assist the GRANTEE in defending the Easement and Restrictive Covenant granted therein to the GRANTEE, its successors and assigns against the claims of any and all persons regardless of the nature or merits of the claim.

TO HAVE AND TO HOLD unto the GRANTEE, its successors and assigns, as a perpetual Easement and Restrictive Covenant, for the uses and purposes set forth herein and for so long as said airport is designated as a public airport. The real property interest hereby conveyed shall revert to the GRANTOR, its successors or assigns in the event the land herein described ceases to be used for public airport purposes. The GRANTOR agreeing that a sole determination by the GRANTEE or its successors in function that the land has ceased to be used for public airport purposes, shall be conclusive of the facts.

FURTHER, that at such a time as it is determined the land is no longer to be used as a public airport the Easement and Restrictive Covenant shall terminate and forfeit and the GRANTEE agrees to execute any documents reasonably necessary to effectuate or perfect the revisionary interest of the GRANTOR, its successor in interest or assigns.

IN WITNESS WHEREOF, the GRANTOR, acting in accordance with the terms and conditions of that certain NANA Regional Corporation Board Resolution No. 94-05, dated the 14th day of January, 1994, and by and through its President who has affixed his name and seal hereto, has caused this Easement and Restrictive Covenant to be executed on its behalf on this 14th day of January, 1994.

NANA REGIONAL CORPORATION

By: _____

ACKNOWLEDGEMENT

State of Alaska)
)ss
Third Judicial District)

THIS IS TO CERTIFY that on this 14th day of January, 1994, before me the undersigned, a Notary Public in and for the State of Alaska, personally appeared Charlie R Curtis, to me known to be the President of NANA REGIONAL CORPORATION, INC., the Native Corporation named in the foregoing instrument, and he acknowledged to me that he had in his official capacities aforesaid executed the foregoing instrument as the free act and deed of the said Corporation for the uses and purposes therein stated.

WITNESS my hand and notarial seal on the day and year in this certificate first above written.

Notary Public in and for Alaska
My commission expires:

CERTIFICATE OF ACCEPTANCE

The above described property interest is hereby accepted by the STATE OF ALASKA, DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES for public purposes.

Date: 2/14/94

By:
Regional Chief Right of Way Agent

N/C State Business
Department of Transportation
and Public Facilities
2301 Peger Road, MS 2553
Fairbanks, Alaska 99709-5399

Project No. 65979

EXHIBIT A
NOATAK AIRPORT

That certain real property lying and being within Sections 16, 17, 20 and 21, Township 25 North, Range 19 West Kateel River Meridian, Kotzebue Recording District, Second Judicial District, at Noatak, Alaska and more particularly described as follows:

Tract I, Parcel B

COMMENCING at Corner No. 6 of U.S. Survey 3778, a recovered BLM monument, said corner being common to the northwest corner of Lot 4, U.S.S. 3778;

THENCE proceed S 22°14'00" W along said easterly boundary a distance of 719.40 feet to Corner No. 9 of U.S. Survey 3778, a BLM monument of record, said corner being common to the southwest corner of Lot 4, U.S.S. 3778;

THENCE continue S 22°14'00" W, along said boundary, a distance of 297.00 feet to Corner No. 10 of U.S. Survey 3778, a BLM monument of record, and the TRUE POINT OF BEGINNING;

THENCE S 22°14'00" W, a distance of 165.66 feet to a point on the meanders of the ordinary high water line of an unnamed lake;

THENCE proceed southwesterly along the meanders of the ordinary high water line of said unnamed lake, said meander being described by the following predominant courses and distances from the last described point;

S 83°10'10" W a distance of 215.11 feet;
S 43°47'38" W a distance of 180.89 feet;
S 88°43'36" W a distance of 187.29 feet;

THENCE departing said meanders N 67°53'19" W a distance of 400.00 feet to a point;

THENCE N 30°38'32" E a distance of 178.52 feet to a point;

THENCE N 22°14'00" E a distance of 337.34 feet to Corner No. 11 of U.S. Survey 3778, a BLM monument of record;

THENCE S 67°46'00" E a distance of 800.14 feet to the TRUE POINT OF BEGINNING.

Said parcel contains 7.82 acres, more or less, and is depicted as Tract I, Parcel B on the Exhibit B attached hereto and made a part hereof.

-AND-

Tract I, Parcel C

COMMENCING at Corner No. 6 of U.S. Survey 3778, a recovered BLM monument, said corner being common to the northwest corner of Lot 4, U.S.S. 3778 and the easterly boundary of Lot 2, U.S.S. 3778;

THENCE proceed S 22°14'00" W along said easterly boundary a distance of 719.40 feet to Corner No. 9 of U.S. Survey 3778, a BLM monument of record, said corner being common to the southwest corner of Lot 4, U.S.S. 3778;

THENCE continue S 22°14'00" W, along said boundary, a distance of 297.00 feet to Corner No. 10 of U.S. Survey 3778, a BLM monument of record;

THENCE S 22°14'00" W, a distance of 165.66 feet to a point on the meanders of the ordinary high water line of an unnamed lake and the TRUE POINT OF BEGINNING;

THENCE continuing S 22°14'00" W a distance of 346.53 feet to a point;

THENCE N 67°53'19" W a distance of 426.25 feet to a point on the ordinary high water line of said unnamed lake;

THENCE proceed along the meanders of the ordinary high water line being described by the following predominant courses and distances from the last described point:

N 83°10'10" E a distance of 215.11 feet;
N 43°47'38" E a distance of 180.89 feet;
N 88°43'36" E a distance of 187.29 feet;

to the TRUE POINT OF BEGINNING.

Said parcel contains 1.66 acres, more or less, and is depicted as Tract I, Parcel C on the Exhibit B attached hereto and made a part hereof.

Tract I, Parcels B and C aggregate 9.48 acres, more or less.

EXHIBIT A
NOATAK AIRPORT

That certain real property lying and being within Sections 16 and 17, Township 25 North, Range 19 West, Kateel River Meridian, Kotzebue Recording District, Second Judicial District at Noatak, Alaska, and more particularly described as follows:

Tract I, Parcel D

COMMENCING at Corner No. 12, U.S. Survey 3778, a recovered BLM monument said corner being common to Corner No. 10, Tract A, U.S. Survey 4486;

THENCE proceed S 22°14'00" W, along the western boundary of Lot 2, U.S. Survey 3778, a distance of 512.57 feet to the TRUE POINT OF BEGINNING;

THENCE continue S 22°14'00" W, along said boundary, a distance of 261.16 feet to a point;

THENCE N 13°34'50" E a distance of 264.08 feet to a point;

THENCE S 67°53'19" E a distance of 39.73 and the TRUE POINT OF BEGINNING.

Said parcel contains 0.12 acres, more or less, and is depicted as Tract I, Parcel D on the Exhibit B attached hereto and made a part hereof.

BOOK 42 PAGE 554
Kotzebue Recording District

RESOLUTION OF THE BOARD OF DIRECTORS
OF
NANA REGIONAL CORPORATION, INC.
Resolution 94- 05

WHEREAS, the Alaska Department of Transportation and Public Facilities (DOT/PF) is presently undertaking an airport improvement project in the community of Noatak; and

WHEREAS, the land upon which the approach zones are located is owned by NANA Regional Corporation, Inc.(NANA); and

WHEREAS, DOT/PF requires adequate site control documentation in order to be eligible for receipt of federal funding for the airport construction project: and

WHEREAS, such site control is acquired by DOT/PF through an Easement and Restrictive Covenant for the surface estate and a Perpetual Subsurface Easement and Restrictive Covenant for the subsurface estate; and

WHEREAS, NANA has executed similar site control documents for other airports in the region; now therefore

BE IT RESOLVED, the President of NANA Regional Corporation is hereby authorized to sign on behalf of NANA the Easement and Restrictive Covenant and a Perpetual Subsurface Easement and Restrictive Covenant for the Noatak airport.

Adopted this 14th day of January, 1994 at a duly called meeting for which a quorum was established held in Kotzebue, Alaska, by a vote of 21 for, -0- against and 2 not voting.

Christina Westlake, Chairperson

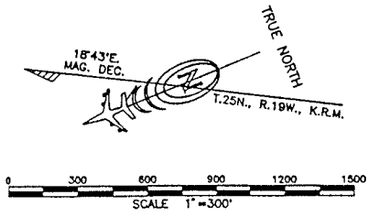
Levi Cleveland, Secretary

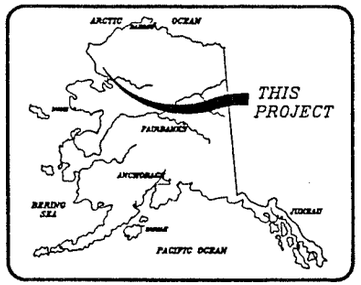
BOOK 42 PAGE 555
Kotzebue Recording District

PROPERTY STATUS

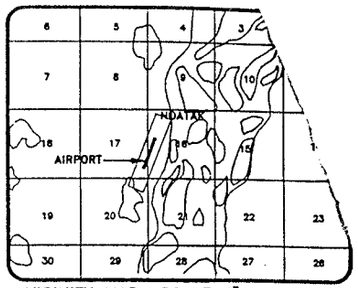
TR	PCL	AREA (acr)	REMAIN	LARGER PARCEL	GRANTOR	INTEREST	DATE ACQD	FAA PROJ #
I	A	116.45			U.S.A.	PATENT	10/24/62	
I	B	7.82	LARGE	LARGE	*NANA/NANA			
I	C	1.66	LARGE	LARGE	*NANA/NANA			
I	D	0.12	LARGE	LARGE	*NANA/NANA			

* DENOTES NANA REGIONAL CORPORATION, INC.; SUBSURFACE ESTATE AND NANA REGIONAL CORPORATION, INC., SUCCESSOR IN INTEREST TO NOATAK NAPAAKTUKMEUT CORPORATION; SURFACE ESTATE.



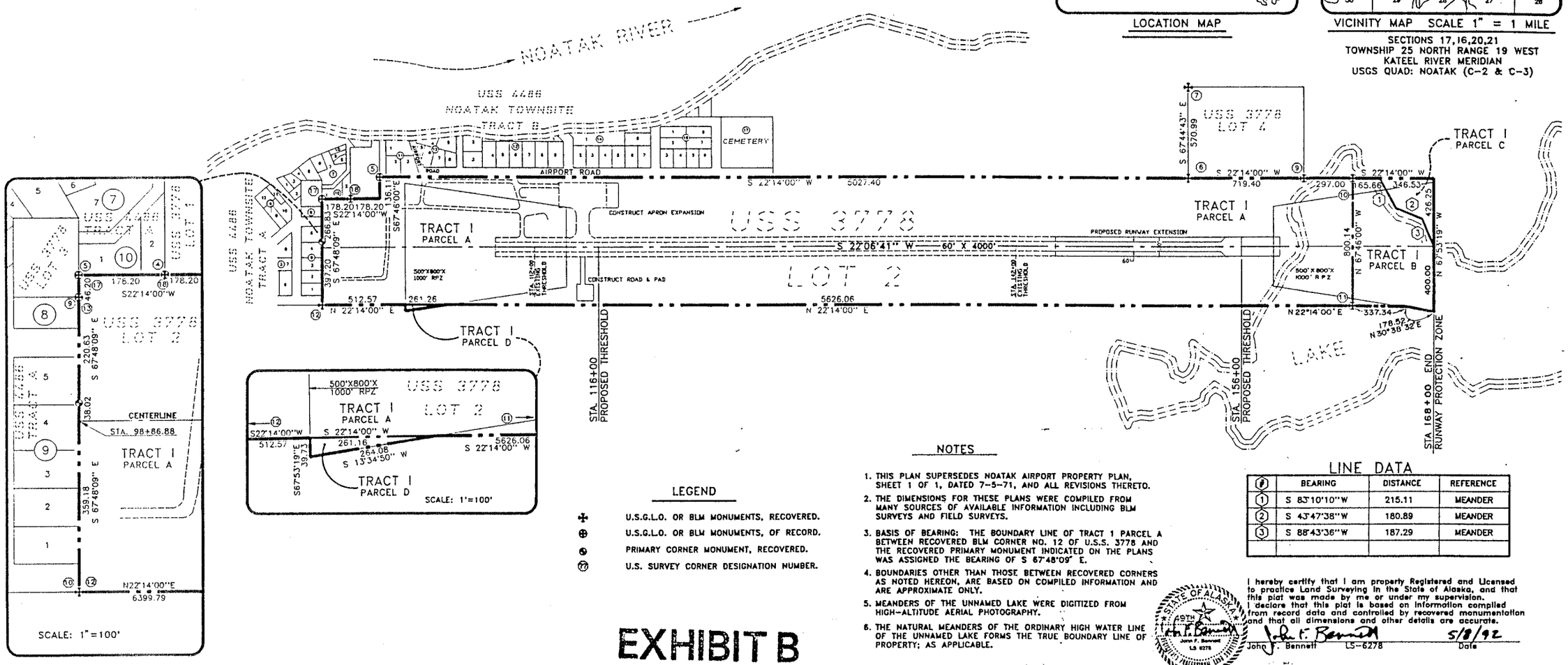


LOCATION MAP



VICINITY MAP SCALE 1" = 1 MILE

SECTIONS 17,16,20,21
TOWNSHIP 25 NORTH RANGE 19 WEST
KATEEL RIVER MERIDIAN
USGS QUAD: NOATAK (C-2 & C-3)



LEGEND

- ✣ U.S.G.L.O. OR BLM MONUMENTS, RECOVERED.
- ⊕ U.S.G.L.O. OR BLM MONUMENTS, OF RECORD.
- ● PRIMARY CORNER MONUMENT, RECOVERED.
- (17) U.S. SURVEY CORNER DESIGNATION NUMBER.

NOTES

1. THIS PLAN SUPERSEDES NOATAK AIRPORT PROPERTY PLAN, SHEET 1 OF 1, DATED 7-5-71, AND ALL REVISIONS THERETO.
2. THE DIMENSIONS FOR THESE PLANS WERE COMPILED FROM MANY SOURCES OF AVAILABLE INFORMATION INCLUDING BLM SURVEYS AND FIELD SURVEYS.
3. BASIS OF BEARING: THE BOUNDARY LINE OF TRACT 1 PARCEL A BETWEEN RECOVERED BLM CORNER NO. 12 OF U.S.S. 3778 AND THE RECOVERED PRIMARY MONUMENT INDICATED ON THE PLANS WAS ASSIGNED THE BEARING OF S 67°48'09" E.
4. BOUNDARIES OTHER THAN THOSE BETWEEN RECOVERED CORNERS AS NOTED HEREON, ARE BASED ON COMPILED INFORMATION AND ARE APPROXIMATE ONLY.
5. MEANDERS OF THE UNNAMED LAKE WERE DIGITIZED FROM HIGH-ALTITUDE AERIAL PHOTOGRAPHY.
6. THE NATURAL MEANDERS OF THE ORDINARY HIGH WATER LINE OF THE UNNAMED LAKE FORMS THE TRUE BOUNDARY LINE OF PROPERTY; AS APPLICABLE.

LINE DATA

(#)	BEARING	DISTANCE	REFERENCE
(1)	S 83°10'10"W	215.11	MEANDER
(2)	S 43°47'38"W	180.89	MEANDER
(3)	S 88°43'36"W	187.29	MEANDER

EXHIBIT B

I hereby certify that I am properly Registered and Licensed to practice Land Surveying in the State of Alaska, and that this plat was made by me or under my supervision. I declare that this plat is based on information compiled from record data and controlled by recovered monumentation and that all dimensions and other details are accurate.

John F. Bennett LS-6278 5/8/92
John F. Bennett LS-6278 Date

DESIGN
DRAWN
CHECK

BY	DATE	REVISIONS
LLL	9/28/92	REVISED TRACT I, PARCEL B.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION-DESIGN AND CONSTRUCTION-AVIATION
APPROVED Daniel D. Urbach DATE 5-11-92
DANIEL D. URBACH, P.E. CHIEF AVIATION DESIGN GROUP

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION-DESIGN AND CONSTRUCTION-AVIATION
APPROVED J.A. MILLER DATE 5/11/92
JOHN A. MILLER, P.E. CHIEF RIGHT OF WAY AGENT

NOATAK AIRPORT
PROPERTY PLAN
SCALE: 1"=300'

SHEET 1 OF 1

BOOK 42 PAGE 556
Kotzebue Recording District

AFTER RECORDING HOLD FOR:
DOT & PF
RIGHT OF WAY SECTION
2301 PEGER ROAD, MS 2553
FAIRBANKS, AK 99709-5316
ATTN: [signature]

SEAL OF THE DISTRICT RECORDER OF THE STATE OF ALASKA FOURTH JUDICIAL DISTRICT

United States of America)
State of Alaska) ss

THIS IS TO CERTIFY that the foregoing is a full, true and correct copy of the document as it appears in the records and files of my office.

IN THE WITNESS WHEREOF, I have hereunto set my hand and have affixed my official seal at Fbks., Alaska this 14th day of Feb. 19 94.
District Recorder s/ Jane M. Blevins
by: Elizabeth M. Miller

94-67
RECORDED - ~~FILED~~ N/C
Kotzebue REC. DIST.
DATE 2/14, 19 94
TIME 3:50 P M
Requested by AS/DOT
Address ____

PERPETUAL SUBSURFACE EASEMENT AND RESTRICTIVE COVENANT

THIS SUBSURFACE EASEMENT AND RESTRICTIVE COVENANT ("INSTRUMENT"), dated the 14th day of January, 19 94, by and between NANA REGIONAL CORPORATION, INCORPORATED ("GRANTOR"), an Alaska Regional Native Corporation, the address of which is 4706 Harding Drive, Anchorage, Alaska 99517, and STATE OF ALASKA, DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES ("GRANTEE"), the address of which is 2301 Peger Road, Fairbanks, Alaska 99709-5399,

WITNESSETH:

WHEREAS, GRANTOR is the owner of the subsurface estate of land lying and being within Protracted Sections 16, 17, 20, and 21, Township 25 North, Range 19 West, Kateel River Meridian, located in the Kotzebue Recording District, Second Judicial District at Noatak, Alaska and more particularly described in the Exhibits A and B attached hereto and incorporated herein by reference (these lands are hereinafter referred to as the "Lands").

WHEREAS, the GRANTEE expects to construct improvements to the Noatak Airport and to continue to maintain and operate the Noatak Airport and its related facilities in perpetuity for public purposes; and

WHEREAS, GRANTEE cannot construct improvements, or operate and maintain a public airport and related facilities on the Lands unless GRANTOR grants the rights and agrees to the restrictions set forth herein; and

WHEREAS, GRANTOR is willing to grant the rights and to agree to the restrictions set forth herein in order to allow GRANTEE to construct, operate, and maintain a public airport and related facilities on the Lands in perpetuity;

NOW, THEREFORE, in consideration of the payment of Five thousand eight hundred Dollars ($5800.00), as a non-refundable sum, the mutual promises of the parties, and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, GRANTOR and GRANTEE hereby agree as follows:

1. Grant of Easement

GRANTOR hereby grants to GRANTEE and its successors and assigns the following exclusive rights in and to GRANTOR'S subsurface estate in the Lands, to have and to hold such rights unto itself and its successors and assigns in perpetuity:

(a) The right to enter GRANTOR'S subsurface estate in the Lands, to a depth of no more than 350 feet below current ground level, for the purpose of extracting without payment therefore, all subsurface material for use in constructing, operating, and maintaining an airport and airport facilities;

(b) The right to construct, install, operate, and maintain, on and within GRANTOR'S subsurface estate in the Lands, to a depth of no more than 350 feet below current ground level, electric power lines and other electric power generating and transmitting facilities, telecommunications lines and other telecommunications facilities, sewer lines and other waste disposal facilities including, without limitation, septic tanks, water supply lines and other water storage and transmitting facilities, fuel tank and supply lines and other fuel storage and transmitting facilities, and other similar facilities, used in connection with the surface uses;

(c) The right to drill one or more water wells into and through GRANTOR'S subsurface estate in the Lands for the purpose of producing a sufficient and adequate supply of water for use in connection with the surface uses on the Lands;

(d) The right to excavate, extract, move, redeposit, and use on the Lands, without cost to the GRANTEE or authorization from the GRANTOR, any and all soil, sand, gravel, stone, rock, and similar construction materials constituting a part of GRANTOR'S subsurface estate in the Lands, to a depth of no more than 350 feet below current ground level, on the surface of the Lands and any access roads thereto. Nothing herein shall permit GRANTEE to sell from the Lands for any non-aviation purpose any soil, sand, gravel, stone, rock, or similar construction materials situated therein, thereon, or thereunder.

Prior to exercising any rights granted by paragraph 1(d) above, GRANTEE and its successors and assigns need not take any actions either:

(1) to determine whether any of the soil, sand, gravel, stone, rock, and similar construction materials referred to in Paragraph 1(d) above contain valuable minerals (including without limitation gold, silver, tin, copper, uranium, and similar precious, non-precious, and fissionable minerals; oil, natural gas, and other liquid and gaseous hydrocarbons; and coal) belonging to GRANTOR or its successors or assigns; or

(2) to extract said valuable minerals from said soil, sand, gravel, stone, rock and similar construction materials for the benefit of GRANTOR or its successors or assigns.

2. Restrictive Covenant

GRANTOR, on behalf of itself and its successors and assigns, hereby agrees not to use or develop, for as long as GRANTEE or its successors or assigns have any rights under Paragraph 1 above, its subsurface estate in the Lands in a manner which interferes with the construction, operation, or maintenance by GRANTEE or its successors or assigns of a public airport and related facilities on the Lands, except as set forth in Paragraphs 3 and 4 below.

3. Activities That Do Not Materially Interfere

If GRANTOR desires to enter the Lands for the purpose of exploring for, developing, producing, processing, or marketing valuable minerals in a manner which will

not materially interfere with the construction, operation, maintenance, or future expansion or development by GRANTEE of a public airport and related facilities on the Lands, GRANTOR may do so only after (1) delivering to GRANTEE at least 60 days prior to commencing any activities in, on, or under the Lands a written notice describing the proposed activities, and (2) receiving written permission from GRANTEE to do so. GRANTEE shall use its best efforts to act on each such request for written permission within 30 days after receiving the notice described above. As used herein the term "valuable minerals" includes gold, silver, tin, copper, uranium, and similar precious, non-precious, and fissionable minerals; oil, natural gas, and other liquid and gaseous hydrocarbons, and coal, but excludes gravel, stone, rock and similar construction materials.

GRANTEE may deny GRANTOR written permission to enter the Lands for any of the purposes described above if the proposed activities of GRANTOR will materially interfere with the construction, operation, maintenance, or future airport or airport facility expansion and/or development on the Lands, such permission not to be unreasonably withheld.

If the proposed activities of GRANTOR will materially interfere with the construction, operation, maintenance, or future expansion or development by GRANTEE of a public airport and related facilities on the Lands, then the provisions of Paragraph 4 below shall apply.

Unless GRANTEE is required by law, by the terms of any relevant Federal or State grant, or by the Federal Aviation Administration to require GRANTOR (1) to apply for and obtain a surface permit or surface lease to conduct its proposed activities or (2) to pay any more than nominal application fees, rents, or other consideration for such a permit or lease, GRANTEE shall not require GRANTOR to purchase, lease, or otherwise pay any consideration in order to use or occupy the unimproved surface of any of the lands for any of the purposes described above in a manner which will not materially interfere with the construction, operation, maintenance, or future expansion or development by GRANTEE of a public airport and related facilities on the Lands.

If GRANTOR is required by law, by the terms of any relevant Federal or State grant, or by the Federal Aviation Administration to purchase, lease, or otherwise pay any consideration in order to use or occupy the unimproved surface of any of the Lands, or if GRANTOR desires to use the improved surface of any of the Lands, GRANTOR shall apply for and obtain such surface permits and surface leases as GRANTEE normally requires from other persons desiring to use and occupy the surface of any of the Lands before using or occupying the surface of desired Lands. The terms and conditions contained in any such permits and leases issued to GRANTOR shall be the same as the terms and conditions contained in similar permits and leases to other persons.

4. Activities That Do Materially Interfere

If GRANTOR desires to enter the Lands for the purpose of exploring for, developing, producing, processing, or marketing valuable minerals in a manner which will materially interfere with the construction, operation, maintenance, or future expansion or development by GRANTEE of a public airport and related facilities on the Lands, GRANTOR may do so only after doing the following at its sole cost and expense:

(a) securing an alternative location for the airport and related facilities situated on the Lands;

(b) providing GRANTEE with the same property rights in said alternative location as GRANTEE holds in the Lands as of the date of this INSTRUMENT;

(c) constructing in conformance with FAA criteria a new airport and related facilities of the same class as the airport and related facilities situated on the Lands; and

(d) relocating to the new airport, prior to the closure of the airport and related facilities situated on the Lands, all owners of improvements to the surface estate of the Lands in conformance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Pub. L. No. 91-646, 42 U.S.C. Sub. 4601 et seq., and the implementing regulations, 49 C.F.R. Part 25, unless GRANTEE allows such activity to occur pursuant to other terms and conditions acceptable to GRANTEE.

As used herein the term "valuable minerals" includes gold, silver, tin, copper, uranium, and similar precious, non-precious, and fissionable mineral; oil, natural gas, and other liquid and gaseous hydrocarbons, and coal, but excludes gravel, stone, rock and similar construction materials.

Upon relocation to other lands pursuant to this Paragraph 4 of the airport and related facilities situated on the Lands, the GRANTEE shall execute, acknowledge, and deliver (1) a quitclaim deed to the Native Village of Noatak for the surface interests held by the GRANTEE and (2) a statutory quitclaim deed to the GRANTOR to all rights granted to GRANTEE by this instrument.

5. Binding Effect

GRANTOR and GRANTEE intend that (1) the rights granted pursuant to Paragraph 1 above shall constitute an easement appurtenant to the surface estate in the Lands, (2) the restrictions set forth in Paragraph 2 above shall constitute a restrictive covenant running with the subsurface estate of the Lands, and (3) the rights granted pursuant to Paragraph 1 above and the restrictions set forth in Paragraph 2 above shall be binding upon and inure to the benefit of the respective successors and assigns of GRANTOR and GRANTEE.

6. Title Warranty

GRANTOR hereby represents and warrants that it is the owner of the subsurface estate in the Lands as and to the extent conveyed to it by Interim Conveyance No. 850 dated May 21, 1984, free and clear of any liens, encumbrances, charges, or other interests or claims of third parties arising by, through, or under GRANTOR.

7. Right of Reverter

This easement is for a perpetual term and will not be cancelled or terminated unless GRANTEE, its successors or assigns, officially abandons the airport in writing, pursuant to the provisions of the Alaska Statutes or the Alaska Administrative Code. Upon the official abandonment of said airport, the GRANTEE, its successors or assigns, shall deliver to the GRANTOR a Statutory Quitclaim deed to all the rights granted to the GRANTEE by this instrument.

IN WITNESS WHEREOF the parties hereto have executed this INSTRUMENT as of the date first hereinabove set forth.

NANA REGIONAL CORPORATION, INC.

By: Charlie A. Curtis
~~Willie Hensley~~ Charlie A. Curtis
President

STATE OF ALASKA, DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

By: _____
John A. Miller
Chief Right of Way Agent

ACKNOWLEDGEMENT

STATE OF ALASKA)
)ss
2nd JUDICIAL DISTRICT)

Charlie A. Curtis

THIS IS TO CERTIFY that on the 14th day of January, 1994, before me, a Notary Public in and for the State of Alaska, personally appeared ~~Willie Hensley~~ to me known and known to me to be the President of NANA REGIONAL CORPORATION, INCORPORATED named in the foregoing instrument and he acknowledged to me that he had in his official capacity aforesaid, executed the foregoing Instrument as the free act and deed of the said Corporation for the uses and purposes therein stated.

WITNESS my hand and official seal the day and year in this certificate above first written.

Notary Public in and for Alaska
My Commission expires: 7-7-95

ACKNOWLEDGEMENT

STATE OF ALASKA)
)ss
FOURTH JUDICIAL DISTRICT)

THIS IS TO CERTIFY that on the 14th day of January, 1994, before me, a Notary Public in and for the State of Alaska, personally appeared John A. Miller to me known and known to me to be the Chief Right of Way Agent for the State of Alaska, Department of Transportation and Public Facilities, Northern Region, named in the foregoing instrument and he acknowledged to me that he had in his official capacity aforesaid, executed the foregoing Instrument on behalf of the State and the said Department for the uses and purposes therein stated.

WITNESS my hand and official seal the day and year in this certificate above first written.

Rosemarie C. Martell-Greenblatt
Notary Public in and for Alaska
My Commission expires: 6/29/96

SCHEDULE A: The Lands

SCHEDULE B: Noatak Airport Property Plan

Project No. 65979

Please record in the Kotzebue Recording District. After recording, please return to Rose Martell-Greenblatt, Right of Way Agent, Department of Transportation and Public Facilities, Right of Way Section, 2301 Peger Road, MS 2553, Fairbanks, Alaska 99709-5399

EXHIBIT A
NOATAK AIRPORT

That certain real property lying and being within Sections 16, 17, 20 and 21, Township 25 North, Range 19 West Kateel River Meridian, Kotzebue Recording District, Second Judicial District, at Noatak, Alaska and more particularly described as follows:

Tract I, Parcel B

COMMENCING at Corner No. 6 of U.S. Survey 3778, a recovered BLM monument, said corner being common to the northwest corner of Lot 4, U.S.S. 3778;

THENCE proceed S 22°14'00" W along said easterly boundary a distance of 719.40 feet to Corner No. 9 of U.S. Survey 3778, a BLM monument of record, said corner being common to the southwest corner of Lot 4, U.S.S. 3778;

THENCE continue S 22°14'00" W, along said boundary, a distance of 297.00 feet to Corner No. 10 of U.S. Survey 3778, a BLM monument of record, and the TRUE POINT OF BEGINNING;

THENCE S 22°14'00" W, a distance of 165.66 feet to a point on the meanders of the ordinary high water line of an unnamed lake;

THENCE proceed southwesterly along the meanders of the ordinary high water line of said unnamed lake, said meander being described by the following predominant courses and distances from the last described point;

S 83°10'10" W a distance of 215.11 feet;
S 43°47'38" W a distance of 180.89 feet;
S 88°43'36" W a distance of 187.29 feet;

THENCE departing said meanders N 67°53'19" W a distance of 400.00 feet to a point;

THENCE N 30°38'32" E a distance of 178.52 feet to a point;

THENCE N 22°14'00" E a distance of 337.34 feet to Corner No. 11 of U.S. Survey 3778, a BLM monument of record;

THENCE S 67°46'00" E a distance of 800.14 feet to the TRUE POINT OF BEGINNING.

Said parcel contains 7.82 acres, more or less, and is depicted as Tract I, Parcel B on the Exhibit B attached hereto and made a part hereof.

-AND-

Tract I, Parcel C

COMMENCING at Corner No. 6 of U.S. Survey 3778, a recovered BLM monument, said corner being common to the northwest corner of Lot 4, U.S.S. 3778 and the easterly boundary of Lot 2, U.S.S. 3778;

THENCE proceed S 22°14'00" W along said easterly boundary a distance of 719.40 feet to Corner No. 9 of U.S. Survey 3778, a BLM monument of record, said corner being common to the southwest corner of Lot 4, U.S.S. 3778;

THENCE continue S 22°14'00" W, along said boundary, a distance of 297.00 feet to Corner No. 10 of U.S. Survey 3778, a BLM monument of record;

THENCE S 22°14'00" W, a distance of 165.66 feet to a point on the meanders of the ordinary high water line of an unnamed lake and the TRUE POINT OF BEGINNING;

THENCE continuing S 22°14'00" W a distance of 346.53 feet to a point;

THENCE N 67°53'19" W a distance of 426.25 feet to a point on the ordinary high water line of said unnamed lake;

THENCE proceed along the meanders of the ordinary high water line being described by the following predominant courses and distances from the last described point:

N 83°10'10" E a distance of 215.11 feet;
N 43°47'38" E a distance of 180.89 feet;
N 88°43'36" E a distance of 187.29 feet;

to the TRUE POINT OF BEGINNING.

Said parcel contains 1.66 acres, more or less, and is depicted as Tract I, Parcel C on the Exhibit B attached hereto and made a part hereof.

Tract I, Parcels B and C aggregate 9.48 acres, more or less.

EXHIBIT A
NOATAK AIRPORT

That certain real property lying and being within Sections 16 and 17, Township 25 North, Range 19 West, Kateel River Meridian, Kotzebue Recording District, Second Judicial District at Noatak, Alaska, and more particularly described as follows:

Tract I, Parcel D

COMMENCING at Corner No. 12, U.S. Survey 3778, a recovered BLM monument said corner being common to Corner No. 10, Tract A, U.S. Survey 4486;

THENCE proceed S 22°14'00" W, along the western boundary of Lot 2, U.S. Survey 3778, a distance of 512.57 feet to the TRUE POINT OF BEGINNING;

THENCE continue S 22°14'00" W, along said boundary, a distance of 261.16 feet to a point;

THENCE N 13°34'50" E a distance of 264.08 feet to a point;

THENCE S 67°53'19" E a distance of 39.73 and the TRUE POINT OF BEGINNING.

Said parcel contains 0.12 acres, more or less, and is depicted as Tract I, Parcel D on the Exhibit B attached hereto and made a part hereof.

BOOK 42 PAGE 545
Kotzebue Recording District

RESOLUTION OF THE BOARD OF DIRECTORS
OF
NANA REGIONAL CORPORATION, INC.
Resolution 94- 05

WHEREAS, the Alaska Department of Transportation and Public Facilities (DOT/PF) is presently undertaking an airport improvement project in the community of Noatak; and

WHEREAS, the land upon which the approach zones are located is owned by NANA Regional Corporation, Inc.(NANA); and

WHEREAS, DOT/PF requires adequate site control documentation in order to be eligible for receipt of federal funding for the airport construction project: and

WHEREAS, such site control is acquired by DOT/PF through an Easement and Restrictive Covenant for the surface estate and a Perpetual Subsurface Easement and Restrictive Covenant for the subsurface estate; and

WHEREAS, NANA has executed similar site control documents for other airports in the region; now therefore

BE IT RESOLVED, the President of NANA Regional Corporation is hereby authorized to sign on behalf of NANA the Easement and Restrictive Covenant and a Perpetual Subsurface Easement and Restrictive Covenant for the Noatak airport.

Adopted this 14th day of January, 1994 at a duly called meeting for which a quorum was established held in Kotzebue, Alaska, by a vote of 21 for, -0- against and 2 not voting.

Christina Westlake, Chairperson

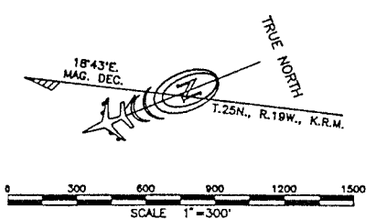
Levi Cleveland, Secretary

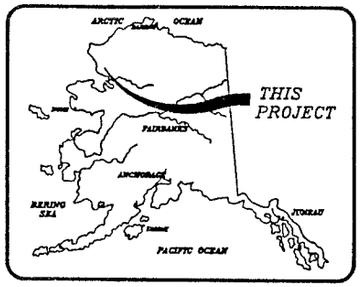
BOOK 42 PAGE 546
Kotzebue Recording District

PROPERTY STATUS

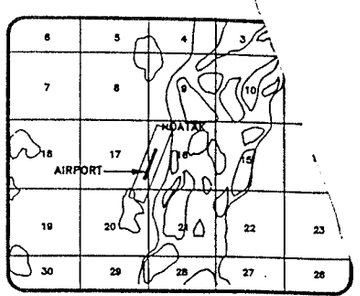
TR	PCL	AREA (acr)	REMAIN	LARGER PARCEL	GRANTOR	INTEREST	DATE ACQD	FAA PROJ #
1	A	116.45			U.S.A.	PATENT	10/24/62	
1	B	7.82	LARGE	LARGE	*NANA/NANA			
1	C	1.66	LARGE	LARGE	*NANA/NANA			
1	D	0.12	LARGE	LARGE	*NANA/NANA			

* DENOTES NANA REGIONAL CORPORATION, INC.; SUBSURFACE ESTATE AND NANA REGIONAL CORPORATION, INC., SUCCESSOR IN INTEREST TO NOATAK NAPAAKTUKMEUT CORPORATION; SURFACE ESTATE.



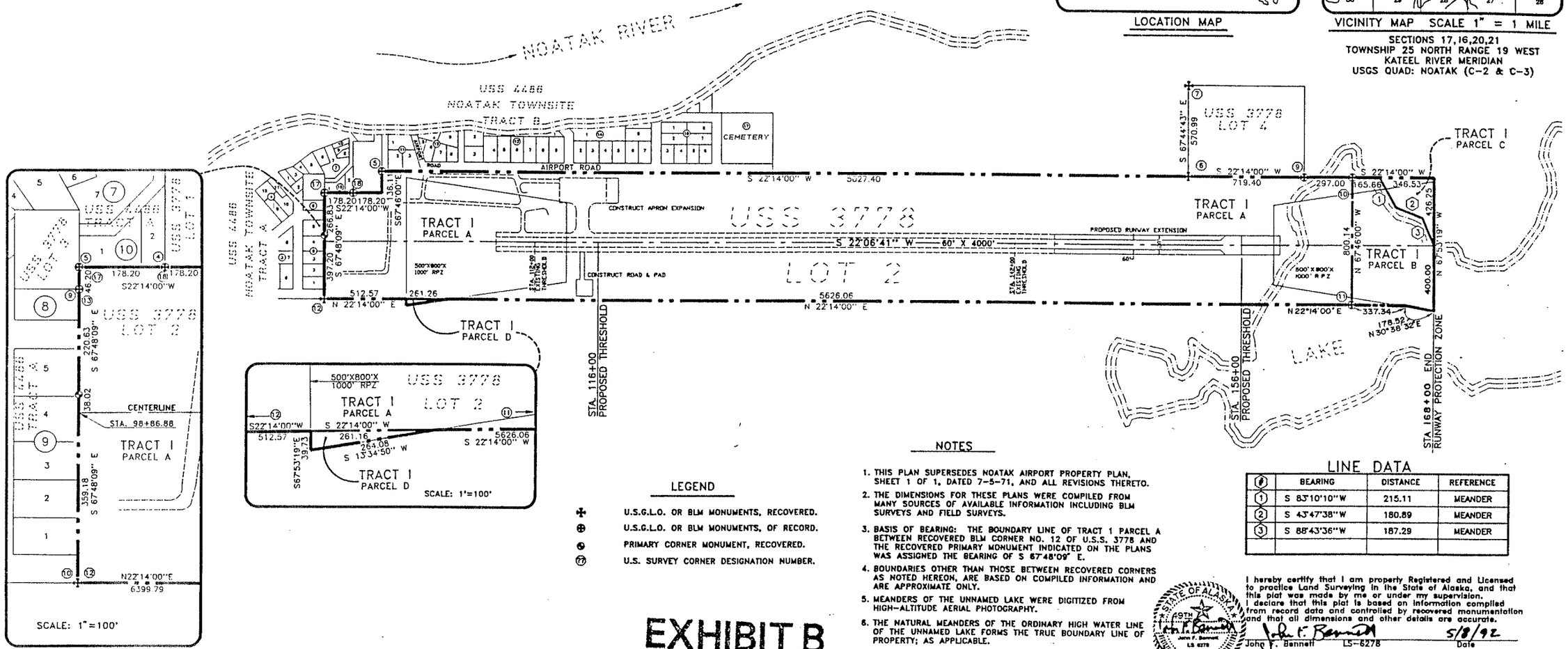


LOCATION MAP



VICINITY MAP SCALE 1" = 1 MILE

SECTIONS 17,16,20,21
TOWNSHIP 25 NORTH RANGE 19 WEST
KATEEL RIVER MERIDIAN
USGS QUAD: NOATAK (C-2 & C-3)



LEGEND

- ✣ U.S.G.L.O. OR BLM MONUMENTS, RECOVERED.
- ⊕ U.S.G.L.O. OR BLM MONUMENTS, OF RECORD.
- ◉ PRIMARY CORNER MONUMENT, RECOVERED.
- (17) U.S. SURVEY CORNER DESIGNATION NUMBER.

EXHIBIT B

NOTES

1. THIS PLAN SUPERSEDES NOATAK AIRPORT PROPERTY PLAN, SHEET 1 OF 1, DATED 7-5-71, AND ALL REVISIONS THERETO.
2. THE DIMENSIONS FOR THESE PLANS WERE COMPILED FROM MANY SOURCES OF AVAILABLE INFORMATION INCLUDING BLM SURVEYS AND FIELD SURVEYS.
3. BASIS OF BEARING: THE BOUNDARY LINE OF TRACT 1 PARCEL A BETWEEN RECOVERED BLM CORNER NO. 12 OF U.S.S. 3778 AND THE RECOVERED PRIMARY MONUMENT INDICATED ON THE PLANS WAS ASSIGNED THE BEARING OF S 67°48'09" E.
4. BOUNDARIES OTHER THAN THOSE BETWEEN RECOVERED CORNERS AS NOTED HEREON, ARE BASED ON COMPILED INFORMATION AND ARE APPROXIMATE ONLY.
5. MEANDERS OF THE UNNAMED LAKE WERE DIGITIZED FROM HIGH-ALTITUDE AERIAL PHOTOGRAPHY.
6. THE NATURAL MEANDERS OF THE ORDINARY HIGH WATER LINE OF THE UNNAMED LAKE FORMS THE TRUE BOUNDARY LINE OF PROPERTY; AS APPLICABLE.

LINE DATA

#	BEARING	DISTANCE	REFERENCE
1	S 83°10'10"W	215.11	MEANDER
2	S 43°47'38"W	180.89	MEANDER
3	S 88°43'36"W	187.29	MEANDER

I hereby certify that I am properly Registered and Licensed to practice Land Surveying in the State of Alaska, and that this plat was made by me or under my supervision. I declare that this plat is based on information compiled from record data and controlled by recovered monumentation and that all dimensions and other details are accurate.

John J. Bennett LS-6278 5/8/92
John J. Bennett Date

DESIGN
DRAWN
CHECK

BY	DATE	REVISIONS
LLL	9/28/92	REVISED TRACT I, PARCEL B.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION-DESIGN AND CONSTRUCTION-AVIATION
APPROVED Daniel D. Urbach DATE 5-11-92
DANIEL D. URBACH, P.E. CHIEF AVIATION DESIGN GROUP

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION-DESIGN AND CONSTRUCTION-AVIATION
APPROVED J.A. Miller DATE 5/11/92
JOHN A. MILLER, P.E. CHIEF RIGHT OF WAY AGENT

NOATAK AIRPORT
PROPERTY PLAN

SCALE: 1"=300'

SHEET 1 OF 1

BOOK 42 PAGE 547
Kotzebue Recording District

AFTER RECORDING HOLD FOR:
DOT & PF
RIGHT OF WAY SECTION
2301 PEGER ROAD, MS 2553
FAIRBANKS, AK 99709-5316
ATTN: Rose Mariebe L Watt

SEAL OF THE DISTRICT RECORDER OF THE STATE OF ALASKA FOURTH JUDICIAL DISTRICT

United States of America)
State of Alaska) ss

THIS IS TO CERTIFY that the foregoing is a full, true and correct copy of the document as it appears in the records and files of my office.

IN THE WITNESS WHEREOF, I have hereunto set my hand and have affixed my official seal at Nuka, Alaska, this 14th day of Feb. 1994.
District Recorder /s/ Jane M. Blevins
by: Elizabeth M. Miller

94-060
RECORDED - ~~FILED~~ N/C
Kotzebue REC. DIST.
DATE 2/14, 1994
TIME 3:50 PM
Requested by AS/DOT
Address

APPENDIX B

NOATAK RIVER BANK EROSION STUDIES

Page

FINAL SUBMITTAL

NOATAK RIVER BANK EROSION STUDY AT NOATAK, ALASKA

ANTHC Project No. AN01-Q55

Prepared For:

PDC, INC.
1028 Aurora Drive
Fairbanks, Alaska 99709

And:

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM
Department of Environmental Health and Engineering
1901 Bragaw, Suite 200
Anchorage, Alaska 99508

Prepared By:

R&M CONSULTANTS, INC.
9101 Vanguard Drive
Anchorage, Alaska 99507

February, 2003

NOATAK RIVER BANK EROSION STUDY AT NOATAK, ALASKA

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NOATAK RIVER BANK EROSION STUDY AT NOATAK, ALASKA

EXECUTIVE SUMMARY

The Noatak IRA Council and the Alaska Native Tribal Health Consortium (ANTHC) are currently in the process of updating water and sewer plans for the Village of Noatak, Alaska. The bank of the Noatak River adjacent to the village has undergone significant erosion over the past 50 years. Short-term erosion threatens to destroy the three existing water wells in the village. Long-term erosion may threaten the water treatment facilities building. As part of this water and sewer plan update, R&M Consultants, Inc. has performed an erosion study for PDC, Inc., who is under contract to ANTHC. The purpose of this study is to estimate the extent of future erosion at five locations, estimate how long the existing water wells may survive, and evaluate a location for new water wells.

The methods of investigation and analysis for this study consisted of collecting existing data, interpretation of aerial photos, and field reconnaissance. Existing reports and other pertinent data are summarized in this report. As part of the study, 12 sets of aerial photos taken between 1952 and 2000 were analyzed. Past erosion rates were determined and used to predict future erosion limits. A field trip was conducted in August, 2002 to observe existing conditions.

Noatak lies on the west bank of the Noatak River, approximately 55 miles northwest of Kotzebue. There is no road access and year-round access is by air. The village lies within the Mission Lowland, a broad tundra flat crossed by a forested floodplain. The river is interpreted to be a split-channel river, and the part of the river flowing by the village is split into a west and east channel.

Discharge in the Noatak River channels has shifted between the east and west channels several times over the past 50 years. A small, apparently gradual shift in one channel about a mile upriver of the village occurred during the 1960s and 1970s and appeared to have lead to a major shift in the pattern and an increase in the rate of erosion along the bank in the village. Several erosion control projects have been constructed and ultimately failed over the years, including a 1,900-foot long wood retaining wall constructed in the 1960s. A large 1,500-foot long concrete structure built in the 1980s and is still in place today. A large erosion control project was planned in the 1990s, but was never funded. At present, the East Channel has the maximum discharge rate and the West Channel has become a high-water channel. The West Channel split upriver from the village into two channels referred to as Channel A and Channel B. Changes in the direction and relative discharge in these two channels are interpreted to be one of the causes of the changing pattern of bank erosion at the village.

Location A (Drawing A-03) consists of the section of river bank lying downriver of the concrete erosion control structure. The increase in erosion rates along this stretch of the river bank appears to be due to gravel mining and the shifting of flow from Channel A to Channel B. The recent diversion of flow from the West Channel to the East Channel may reduce short-term

erosion rates. However, much of the erosion at Noatak appears to occur during floods when there is still significant flow through the West Channel.

Location B (Drawing A-04) consists of the section of river bank protected by a concrete erosion control structure. The banks behind the structure are vegetated and appear to have been relatively stable since it was constructed in the early 1980s. Channel A flowed along the bank, which showed evidence of active erosion prior to construction. Parts of the downriver structure have failed and other parts may fail in the near future. This study indicates the structure will fail completely sometime after 2020.

Location C (Drawing A-05) consisted of the island (gravel bar) adjacent to the north side of the village. Photos showed that the vegetation had increased, thus indicating a period of increasing stability. This appeared to be primarily due to the shifting of the flow of the river from Channel A to Channel B. Water Wells 1 and 2 were located on the island. Water Well 1 was lost in 1990 and Well 2 is now threatened. Channel A appeared to be deflecting Channel B away from the island, at least during periods of low water. As long as this deflection continues, it appears that the island will remain stable.

Location D (Drawing A-06) consists of the section of river bank upriver of the concrete erosion control structure. The banks along the southern part were observed to be vegetated during the field reconnaissance and appeared to be stable with only minor erosion occurring. The northern part consisted of banks along two islands and the river at the upriver end of Location D. Prior to flow shifting from Channel A to Channel B, significant erosion was occurring at this location.

Location E (Drawing A-0-7) consists of a vegetated island upriver from the village. Photo analysis showed that the island has been eroding since 1986, as a meander bend in Channel B moved downriver.

Between 1952 and 1978 it appeared that a series of small overflow channels coalesced into Channel B and began flowing into the West Channel of the River. After 1978, the flow increased in Channel B and it became the main channel.

Water Wells 3 and 4 (Figure 15) were located immediately behind a part of the concrete mat that is failing and may fail completely in less than 5 years. The remaining water well (2), on the gravel bar at Location C was located on the edge of the island, with only a few feet separating it from the active channel (Figure 11). The river has reportedly overtopped it more than once and it is likely to be destroyed during the next period of high water. The proposed new water wells at Location C have a design life of 20 years and lie on a portion of the island estimated to last at least that long.

The reliability of the projections made during this study depend upon the river regime remaining basically the same for the next 50 years. Major changes to the channel configuration may change the projected erosion limits. Due to the uncertainties in these types of studies we recommend that erosion monitoring be performed. Monitoring would provide information for evaluating the rates of erosion projected in this report.

NOATAK RIVER BANK EROSION STUDY AT NOATAK, ALASKA

1.0 INTRODUCTION

1.1 Background

The Noatak IRA council is currently completing an update to their March, 1992 Water and Sewer Facilities Plan. The Facilities Plan update is being completed as a cooperative effort between the Noatak IRA and the Alaska Native Tribal Health Consortium (ANTHC). The project is funded by the State of Alaska Village Safe Water Program (VSW). As part of the update, this erosion study has been performed by R&M Consultants, Inc. (R&M) for PDC, Inc. who is under contract to ANTHC. The purpose of the study is to determine if the location of proposed new facilities may fall within areas subject to erosion during their design life. A project location map is provided as Figure 1. For comparison purposes, both 1952 and 1978 aerial photographs are presented as Drawing A-01 of Appendix A.

The bank of the Noatak River adjacent to the village of Noatak has undergone significant erosion over the past 50 years. Various structures, including the school and AVEC tank farm are planned to be relocated north of the landfill near the recently constructed Kuutchauraq Subdivision. The same area is also identified for future housing and community expansion. The airport apron is planned to be relocated to the west of the runway due to on-going bank erosion. The airstrip may also need to be relocated at some future time. Erosion threatens to destroy the remaining water well on the island (Location C) at the north end of the village in addition to two on-shore wells located behind a concrete erosion control structure.

The site description, interpretation of aerial photos, conclusions and recommendations presented herein are based on our current understanding of the study and locations as outlined herein and illustrated on the drawings included in the appendices of this report.

1.2 Contract Authorization

This study has been conducted under the terms of Agreement No. ANTHC-00-C-0205, between the Alaska Native Tribal Health Consortium, and PDC, Inc. This report is in specific fulfillment of Notice to Proceed No. 0161 of the contract. R&M's study has been conducted for PDC under their Notice to Proceed from ANTHC dated June 25, 2002.

1.3 Purpose and Scope-of-Work

The intent of this study was to estimate the projected 10, 20 and 50-year extent of erosion along the west bank of the Noatak River floodplain at Noatak. The study also considered the impact of upriver and downriver changes in river channel morphology. The study area was separated into six locations as shown on Drawing A-02 of Appendix A.

1. Location A - The river banks between the village borrow sources and the downriver end of the existing concrete erosion control structure.
2. Location B - The section presently protected by the concrete erosion control structure.
3. Location C - The island off the upriver end of the village.
4. Location D - The west banks of the river floodplain upriver of the concrete erosion control structure.
5. Location E - The west banks of a large island upriver of the village.
6. Upriver changes in the channel morphology that may affect erosion at the village.

The project has been divided into the following tasks:

1. Review and summarize available previous river erosion or floodplain studies for Noatak.
2. Analyze the past rate of erosion using aerial photos, and based on that rate, estimate the future rate and limits of erosion.
3. A field reconnaissance to Noatak to inspect the river bank, inspect the island, and solicit local knowledge from the IRA Council.
4. Prepare a report including:

    a. An evaluation of the existing concrete erosion control structure and an estimate of the amount of time until the on-shore wells will be destroyed.
    b. An evaluation of the log chevron protection structure used to protect the remaining island well and an estimate of the amount of time until the well will be destroyed.
    c. Review of the proposed design for the installation of two additional water wells on the island.
    d. A description of the analytic methods, estimated rates of erosion, and limitations of the study.
    e. Annotated color photography to illustrate site conditions.

2.0 METHODS

The methods of investigation and analysis used for this study can be divided into the following categories.

- Collection of Existing Data
- Aerial Photo Analysis
- Field Reconnaissance

Following is a brief description of each of these categories.

2.1 Collection of Existing Data

Much of the information concerning past events and conditions utilized in this report were derived from aerial photos, data from previous reports, and on personal recollections. Many of the documents from previous projects could not be located. There was notable disagreement about past events and information between the various information sources. For this report, we relied primarily on historical aerial photos, and secondarily on documents and oral communications.

Information was solicited from the following sources.

1. U.S. Army Corps of Engineers - Alaska District (USACE-AD), including:
   a. Civil Works Project Management Branch
   b. Regulatory Branch
   c. Floodplain Management Services
2. United States Geological Survey (USGS)
3. U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)
4. Federal Aviation Administration (FAA)
5. State of Alaska Department of Transportation and Public Facilities (DOT&PF)
6. State of Alaska Department of Community & Economic Development (DCED)
7. Interagency Hydrology Committee for Alaska
8. Alaska Native Tribal Health Consortium (ANTHC)
9. Noatak IRA Council

2.2 Aerial Photo Analysis

Historical erosion along the west bank of the Noatak River, adjacent to and upriver of the village of Noatak, was analyzed by scanning aerial photos taken over a 48-year period, scaling them using a community map with an orthophoto base, and then digitizing the top of the river bank. The following aerial photos were utilized during this project:

TABLE 1

AERIAL PHOTOS UTILIZED FOR THIS PROJECT

DATE PHOTO TAKEN	B&W/ COLOR	APPROX. SCALE	FLIGHT NO.	FRAME NO(S).	SOURCE
Aug. 15, 1952	B&W	1:42,000	15	0080 to 82	US Geol. Survey
Aug. 18, 1962	B&W	1:3,000	ALT 1500	1 to 8	BLM
Sept. 15, 1966	B&W	1:4,800	AMT 2100	3 & 4	ANTHC (COE ?)
June 12, 1972	B&W	1:4,800	Noatak 1	1 to 5	ANTHC/Aeromap
Aug. 11, 1975	B&W	1:3,600	Roll 16	7 to 13	BLM
July, 1978	Color Infra red	1:63,360	—	5903	NASA/Aeromap
Sept. 22, 1984	Color	1:4,800	Noatak 207	5 to 11	ANTHC/Aeromap
June 15, 1986	B&W	1:6,000	NOA. 1	1 to 5 & 7	Aeromap
June 15, 1986	B&W	1:12,000	NOATAK 1	1 to 3	ANTHC
July 23, 1990	B&W	1:6,000	Noatak 15	2	ANTHC
July 23, 1990	B&W	1:6,000	90-12	CF07-63/64	Aeromap
Aug. 26, 2000	Color	1:12,000	Noatak 1	1 to 3	Aeromap

The community map was prepared by McClintock Land Associates, Inc. in 1999(?) and was based on a digital orthophoto prepared by National Map Accuracy Standards from August 17, 1999 photography. The orthophoto was corrected, by rectification to ground control stations, to remove distortion and warpage due to ground topography and aircraft tilt and trim (McClintock, 1999). Starting with the 2000 aerial photos, the features on the photos were registered in AutoCAD to the structures and topographic features on the map. Then photos taken in 1990 were registered to the 2000 photos and 1984 photos to the 1990 photos and so on going back to the 1952 photos. For each year the top of the river bank was then digitized and placed into AutoCAD. Graphs showing past erosion rates and projected future erosion rates were then prepared. Aerial photos showing the river upstream of Noatak in both 1952 and 1978 are shown on Drawing A-01. An overall view of the estimated extent of future erosion is included as Drawing A-02. Maps of the digitized top of bank for each year and estimated erosion limits at each location are shown on Drawings A-03 through A-07. Plots of time versus erosion are included in Appendix B as Drawings B-01 through B-06.

Location C, which consists of an island (gravel bar) along the north side of the village does not have a readily definable top of bank or other feature that can be tracked over time. Additionally, water levels vary too much in the photos to use as a defining feature. The primary items of interest on the island are the changes to the island's size and the growth of vegetation which may indicate increasing stability. To illustrate these changes, photographs of the island for each year

are shown on Drawing A-05. Location E, which consists of an island upriver of Location C has only limited or partial photo coverage. Thus, the results may not be as reliable as those from areas where more coverage is available.

Methods used for this type of study assume a relatively uniform environment, both in the past and the future. The soils that will be eroded in the future are assumed to be similar to those eroded in the past. The channel morphology is assumed to be the same with minor changes both before and after the study. It should be noted that the changes in channel morphology observed during this study complicate the possible estimate of future erosion rates and may reduce the accuracy of these projections. To the extent possible, we have adjusted the estimated rate and direction of erosion to reflect the conditions expected to occur. Discussions of some possible alternative scenarios are included in the description for each location.

The presence of an erosion control structure within the study area that will apparently fail within the time line of this study creates an additional complication for the analysis. This creates a situation where no erosion will occur at this location until the structure fails. The failure will be dependant upon the height and frequency of floods and construction projects impacting the bank, among other things. Thus, a projection of future limits of erosion will be dependent upon when the structure fails and wether the structure fails in stages or in one event. Additionally, the rate of projected erosion after failure will depend upon the channel configuration at the time it fails.

Due to these changes in the channel configuration and the presence of an erosion control structure, there appears to be only limited areas along the bank of the floodplain where a simple 50-year projection can be made. Elsewhere, the 50-year projection will involve factoring in the failure of this structure and shifts in channel configurations that are occurring. Due to these complications, the 50-year projection may be less reliable than would be the case with a simpler scenario. We don't expect all of the structure to fail within the next 20 years and the 10 and 20-year projections can be made with a greater expectation of reliability, barring unexpected shifts in river channel configurations.

The plots of time versus erosion, shown in the graphics in Appendix B, are average rates. Actual rates will vary from year to year and detailed measurements taken over time may produce a more "jagged" line than shown. Erosion may even cease temporarily in some locations.

2.3 Field Reconnaissance

Mr. Robert M. Pintner, P.E., of R&M Consultants, Inc., accompanied Mr. Andy Meltzer, P.E. of ANTHC on a field trip to Noatak on August 13 and 14, 2002. The purpose of the trip was to inspect the river bank and island (Location C) and solicit historical local knowledge from the Noatak IRA Council members.

The river bank inspection was performed by ATV, and on foot. The water level was low enough that all of the areas of concern could be accessed without using a boat, including the area approximately 2 miles upriver where the main channel had recently diverted to the east. The existing concrete erosion control structure was viewed from a gravel bar in the river, as well as

up close. The river bank erosion in Location A was viewed by ATV from a gravel bar in the river, and the island (Location C) was inspected on foot.

Interviews of village elders and Noatak IRA Council members were limited because many of the intended contacts were attending a funeral in Kivalina on August 14. The people that were available for interviews included Mr. Herbert Walton, IRA Administrator, and Mr. Ivan Booth a village Elder, and lifetime resident of Noatak. Conversations were also held with the water plant operator, and assistant operator as well as a few additional people who were encountered during the river bank inspection.

2.4 Public Meeting

Mr. Peter K. Hardcastle, R&M Consultants, Inc. accompanied Mr. Andy Meltzer, P.E., of ANTHC, to a public meeting in Noatak on January 22, 2003. The purpose of the trip was to present the study to the village and answer questions.

3.0 REGIONAL SETTING AND GENERAL PROJECT CONDITIONS

3.1 Regional Setting

3.1.1 Location

Noatak is located on the west bank of the Noatak River, approximately 55 miles northwest of Kotzebue, Alaska and 70 miles north of the Arctic Circle (Figure 1). It is the only village on the Noatak River, and lies between Cape Krusenstern National Monument and Noatak National Preserve. Noatak was originally established as a fishing and hunting camp in the 1800s, and subsequently developed into a permanent settlement. Subsistence activities are the primary focus of the village and fisheries are an important part of the harvest.

There is no road access to Noatak and year-round access is by air, typically via Kotzebue. There is a 4,000-foot lighted gravel runway. Small boats are used during summer months and winter travel is by ATV or snowmachine. All forms of travel are dependent on weather conditions.

The Noatak River originates in the Endicott Mountains and flows west between the Baird and De Long Mountains, then turns south and empties into Kotzebue Sound, just north of the City of Kotzebue. The river has a length of 396 miles, a drainage basin of 12,597 square miles and an estimated annual flow of 10,000 cubic feet per second (AIDEA, 1976).

3.1.2 General Geology

Noatak lies within the Mission Lowland, which is the lower part of the Noatak Lowland (Wahrhaftig, 1965). The Mission Lowland consists of broad tundra flats containing thaw lakes and pingos, crossed by a forested floodplain, and surrounded by rolling hills. The area is considered to be underlain by thick permafrost (Ferrains, 1965). Glaciers probably covered the Mission Lowland during the early Pleistocene but not during later glaciations. Outburst floods from proglacial lakes in the upper part of the Noatak Valley reportedly occurred during the late Pleistocene (Hamilton and Van Etten, 1984). Soils in the lowlands typically consist of fine-grained soils overlying alluvial gravels. There is no evidence of shallow bedrock near the village of Noatak.

Regional geology of northern Alaska is discussed in Moore et al. (1993). Although quite dated, Smith and Mertie (1930) present information on the geology and mineral resources of northwest Alaska.

3.1.3 General Hydrology

Noatak is located on a flat lying segment of the river floodplain at about an elevation of 55 feet. It has a gradient of less than one foot per mile at the village and the floodplain ranges from one to one and a half miles in width (USACE-AD, 2002).

The Noatak River at Noatak is interpreted to be a split-channel river. A split-channel river is defined as "a river having numerous islands dividing the flow into two channels. The islands and banks are usually heavily vegetated and stable. The channels tend to be narrower and deeper and the floodplain narrower than a braided system" (USFWS, 1980). It can be thought of as a river transitional between a braided river and a meandering river. The channels are generally more stable than would be expected on a braided river. For instance, one can find many of the channels on the aerial photos in 1952 in the same location as the present. However, shifting flow in a split-channel river is more typical of that found in a braided river. Ten to 15 miles downriver of Noatak the river becomes a meandering river, generally confined to a single sinuous channel.

The aerial photos indicate that the segment of the river flowing past the village is split into an eastern and western channel. Between about 1970 and 1990 the photos indicate that the west channel was split into two channels upriver of the village. The relative amount of flow through these channels has apparently varied over time. The flow appeared to switch back and forth between the east and west channels, depending on naturally occurring diversions upriver of the village. These diversions can be caused by ice jams or erosion of gravel bars.

The aerial photos indicate that the aerial extent of vegetation has been increasing on the floodplain since 1952. This may indicate a more stable channel morphology in the river since 1952, or it may be caused by lower flow in the river due to climatic changes, or it may be part of the natural evolution of the river.

3.1.4 Flooding

The U. S. Army Corps of Engineers Flood Plain Management Service notes that the Noatak River floods seasonally with a 15-foot rise recorded at five to 20-year frequencies. With this flood level, 10 percent of the village would be flooded. The 20 to 100-year frequency ranges will flood up to 25 feet above the normal river level. There is low to no flood hazard above the 25-foot level. The most probable causes of flooding are ice jamming downriver during breakup, or heavy rains during the late summer. According to IRA Council members, one of the largest floods occurred during 1987, which brought flood waters to the top of the remaining island water well casing.

3.1.5 Climate

The Noatak area has a transitional climate typical of the coastal regions of the Chukchi Sea. Weather generally fluctuates between maritime and continental and a combination of

both. Long, cold winters and cool summers characterize the climate. The Alaska Department of Community and Economic Development, Alaska Community Database (www.dced.state.ak.us/cbd/commdb/CF_BLOCK.cfm) reported that winter temperatures averaged about -21° to 15° F and summer temperatures about 40° to 60° F. Extreme temperatures were recorded from -59° to 75°. The mean annual precipitation was about 10 to 13 inches (including equivalent snow fall), with about 48 inches of snow.

A summary of climatological data obtained from Kotzebue, approximately 55 miles to the south, is presented in Table 2. Kotzebue is the closest weather station with a significant weather record.

TABLE 2

CLIMATOLOGICAL DATA
for KOTZEBUE, ALASKA

LOCATION (STATION)	KOTZEBUE WSO*
Period of Record (yrs.)	1949-2001
Elevation (ft.)	10
Mean Annual Temperature (°F)	21.6
Mean Max. Daily Temperature (°F)	27.9
Mean Min. Daily Temperature (°F)	15.3
Record High Temperature (°F)	85
Record Low Temperature (°F)	-52
Mean Annual Precipitation (in)	9.5
Maximum Daily Precipitation (in)	1.6 (Sept. '78)
Mean Annual Snowfall (in)	50.2
Maximum Recorded Depth (in)	53.0 (Apr. '73)

* From the Western Regional Climate Center Web Page on 8/12/2002, at www.wrcc.dri.edu/summary/climsmak.html.

3.2 Summary of Past Erosion and Erosion Control Efforts

The following is a historical summary of the erosion that has occurred at Noatak and the efforts to control it. The items are a synopsis of information gathered during this study. Inconsistences were found between information provided from various sources. In areas of disagreement, the aerial photos were considered to be the most reliable source of information.

1. The 1952 aerial photos show the Noatak River splitting into an eastern and western channel about a mile upriver of the village. The West Channel flowed adjacent to the village. In 1952, the West Channel was a single channel flowing in what we have referred to in this report as Channel A (see Drawing A-01). Portions of the East Channel above the village later become part of West Channel that we refer to as Channel B.

2. The airport was constructed in the early 1960s. The 1962 aerial photos show large gravel pits on a vegetated island adjacent to the north end of the airport with access roads leading to the airport (see Figure 4). It is not known how much material was taken out of the floodplain. Within a few years of mining, significant erosion began to occur along the island and adjacent bank.

3. Prior to 1978, most of the erosion appeared to be occurring along the upriver edge of the village. It was apparently caused by Channel A (at that time the main part of the West Channel) flowing along that edge of the village.

4. A wooden crib retaining wall was built sometime between 1962 and 1966. It consisted of wooden piles with logs laid horizontally behind them. The wall was about 1,900 feet long and stretched from above the village downriver to about where the existing concrete erosion control structure ends (see Figure 2). Most of this wall appeared to have been swept away by the river by 1972.

5. The 1962 through 1975 aerial photos show what appeared to be the coalescing of small overflow channels to form the present Channel B. The 1978 aerial photo showed Channel B to be connected to the West Channel and it appeared to be the main channel on the western side of the floodplain. There appeared to be more flow in the West Channel at this time than the East Channel.

6. 1970's - The Scope-of-Work (ANTHC, 2002) mentions a 160-foot long, 10-foot high retaining wall built near the original water treatment plant and the AVEC power plant. The wall was reportedly built in the early 1970's and was destroyed by a flood in 1974.

7. After 1978, Channel B became the main channel on the west side of the floodplain and Channel A became a high water channel. During the late 1970s through the present day extensive, rapidly occurring erosion was noted along the river bank adjacent to the airport. This was apparently caused by Channel B flowing directly into the bank. As flow decreased in Channel A, erosion decreased along the northern part of the village.

8. A concrete erosion control structure was built in the early 1980s. It is still in place today. However, some parts of the structure have failed and other parts are beginning to fail. The project was reportedly designed by the Physical Facilities Division of the Alaska Department of Transportation & Public Facilities and funded by the Alaska Department of Community and Economic Development

(USACE-AD, 2002). The State of Alaska Legislature made appropriations of about 3.4 million dollars for erosion control at Noatak in 1980 and 1981 (personal communication, Christy Miller (DCED), July 29, 2002).

9. Barge traffic to Noatak ended in 1992 when a Crowley Marine tug and barge grounded about one-half mile down river of the village. It was reported that the gravel bar was in the same location in 2001. Prior to that date, fuel transported by barge to the village ended in 1989 or 1990 because of inadequate channel depth (USACE-AD, 2002).

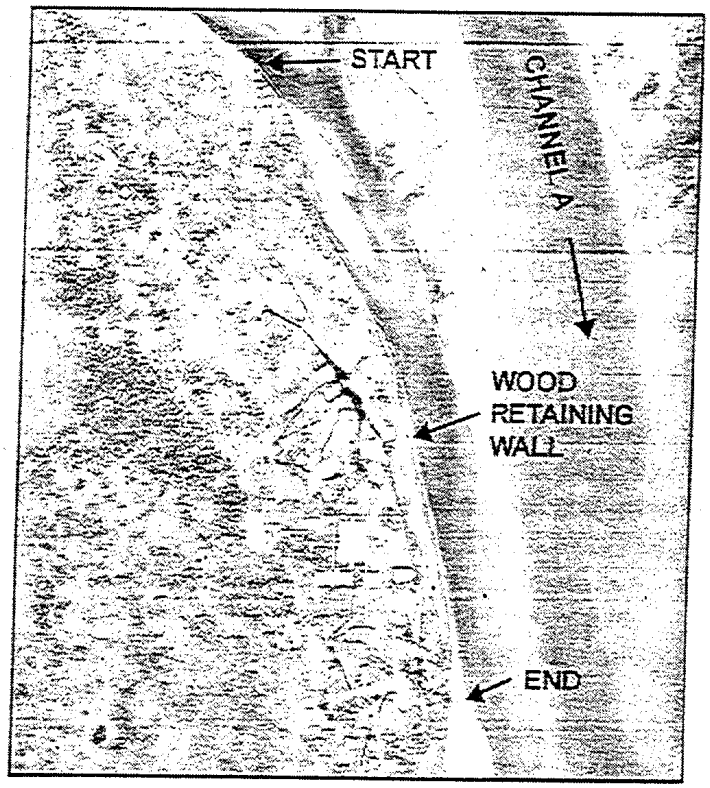
10. The National Resources Conservation Service constructed a small erosion control wall near Noatak in the fall of 1993, reportedly to protect the cemetery and the road to the landfill. It was swept away the next spring (personnel communication, Laurie Richter (NRCS), August 20, 2002).

11. A large erosion control project was planned during 1994 and 1995. The project would have dredged 600,000 cubic yards of material from gravel bars and river channels upriver of the village and placed the material along the river bank at Location A. Diversion structures consisting of gravel-filled geotextile bags were planned in front of the village. All the necessary permits were approved, however, the project was not funded (USACE-AD).

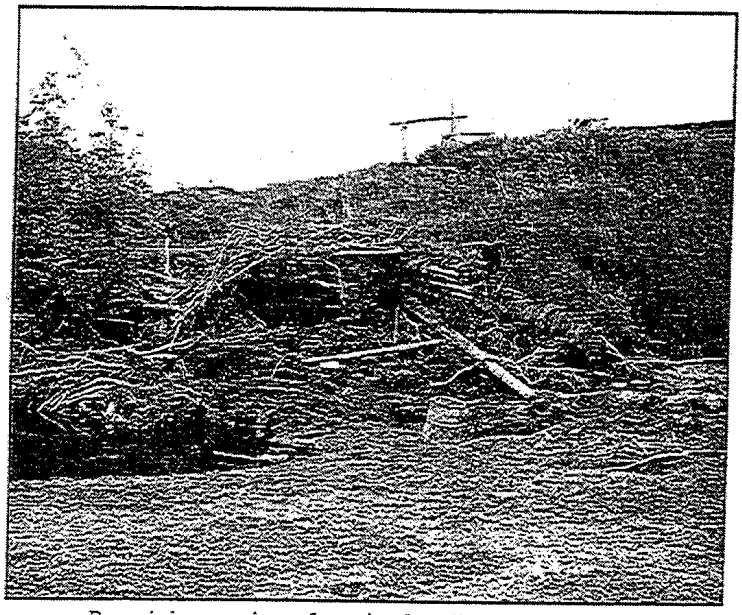
12. 2002 - A field reconnaissance conducted as part of this study found that a channel diversion had occurred upriver of the village that diverted most of the river flow into the East Channel (see Drawing A-01). Residents of Noatak indicated that this diversion had occurred withing the previous two or three years.

FIGURE 2

WOOD RETAINING WALL



1966



Remaining section of a ruined wall at the north end of the Village - August, 2002.

3.3 Existing Information

A small number of related technical projects have been performed in this area. Detailed information from these prior investigations has not been repeated herein. The reader is referred to the previous reports for specific data (see References).

3.3.1 DOT&PF - Noatak/Kobuk Area Erosion Control Study - 1978

An extensive search has been made for this document but at the time of publication of this report we have been unable to find a copy. It is reportedly the study used in the design of the existing concrete erosion control structure built in the early 1980's.

3.3.2 USGS - Water Resources of the Noatak River Basin - 1979

Two hydrological surveys were made during April and August, 1978 to collect data along the Noatak River. The April trip was made to provide data during late winter, a period of low water and maximum ice accumulation. Many springs and open leads were noted along the main course of the river and a large open lead was noted at Noatak Village. As much as 2.5 meters of ice was observed on the river and it was frozen to the bottom in places. The discharge increased from about $4m^3$/sec. in April to about $280m^3$/sec. in August. Pools from 300 to 1500 meters long with gravel and cobble beds, separated by gravel riffles as much as 100 meters long were noted. Most maximum evident flood marks were found near the base of mature willows. The Noatak River channel was noted as being quite stable except for some bank erosion through the Mission Lowlands. Other data collected, but not reported, included spot depth and estimates of maximum evident flood peak and bankfull channel discharges at selected stream sites (Childers, 1979).

3.3.3 USACE - Permits for Noatak Bank Stabilization - 1995

A large erosion control project was planned during 1994 and 1995 but was never constructed. The project would have dredged up to 600,000 cubic yards of material from exposed gravel bars (up to 146 acres) and approximately 500,000 cubic yards from river channels (up to 30 acres) below the ordinary high water mark of the river. The mining would have taken place along the east side of Channel B, immediately upriver and alongside the village. Most of the material would have been placed along the river bank at the downriver end of the village to stabilize the bank in this area, protect gravel bag diversion structures, and to fill approximately 30 acres of the eroding channel of the river adjacent to the townsite. Some of the material would have been used for 2-ton gravel filled, geotextile bags and placed in river channels to create 1,500 feet of diversion structures. A permit was approved, although the project funding was canceled. We were unable to find any hydrologic or erosion studies for this project.

3.3.4 USACE - Navigation Improvements Initial Evaluation Study - 2002

Tetra Tech, Inc. prepared a study for the USACE-Alaska District looking at navigational improvements for the village of Noatak. The purpose of the study was to identify navigation and other water related problems and needs in the study area and conduct preliminary assessments of the engineering and economic feasibility of various alternatives. The report contains a summary of conditions at Noatak and along the river. It reports that the problem started when the river became too shallow for barge traffic. The study considered alternatives including dredging, road construction, and river forecasting (the barge companies would be notified when there was sufficient water to reach the village). The study came to the conclusion that none of the alternatives appeared to be economically feasible.

3.3.5 State of Alaska Administrative Order No. 175 - 1998

The order signed by Governor Knowles orders all state agencies, to the extent possible, to encourage an effort to reduce the risk of flood and erosion losses on state projects. State agencies will consider the potential of flood and erosion hazards on construction projects administered or funded by the State. The complete text of this order can be found at www.gov.state.ak.us/admin-orders/175.html.

3.3.6 State of Alaska Erosion Management Policy

This policy concerns state-funded and state pass-through funded construction. The policy outlines recommended guidelines for considering erosion control during design and construction of a project. It recommends that new structures be located where no erosion control is necessary, the cause of the erosion problem should be identified, and erosion control projects should be sited and designed using appropriate engineering principles. Consideration should be given to the design life of the project, performing an analysis to determine rate of erosion and providing erosion protection as part of the project. The complete text of this policy can be found at www.dced.state.ak.us/cbd/nfip/pub/NFIP_Policy.pdf.

4.0 EROSION CONDITIONS

4.1 General

There is limited aerial photographic coverage of the river floodplain both up and downriver of the village. Therefore, only general conclusions can be drawn about how major changes in the floodplain, channel morphology and discharge in these areas may have affected the river bank at Noatak. Inspection of aerial photographs taken over the last 50 years indicated that the major characteristics of the Noatak River were unchanged and stable during this time period. The river was interpreted to be a split-channel river, in which the river is sometimes split into two channels. One channel typically is the main channel and the other is a highwater channel. Near the village, the main flow appeared to have switched from one side to the other and then back again. In the early 1950s, the East Channel appeared to be the main channel, but by 1978 the maximum discharge had apparently shifted into the West Channel (see Drawing A-01). During our field reconnaissance in August, 2002, it was observed that much of the flow had diverted into the East Channel again. The East Channel does not directly impact the village.

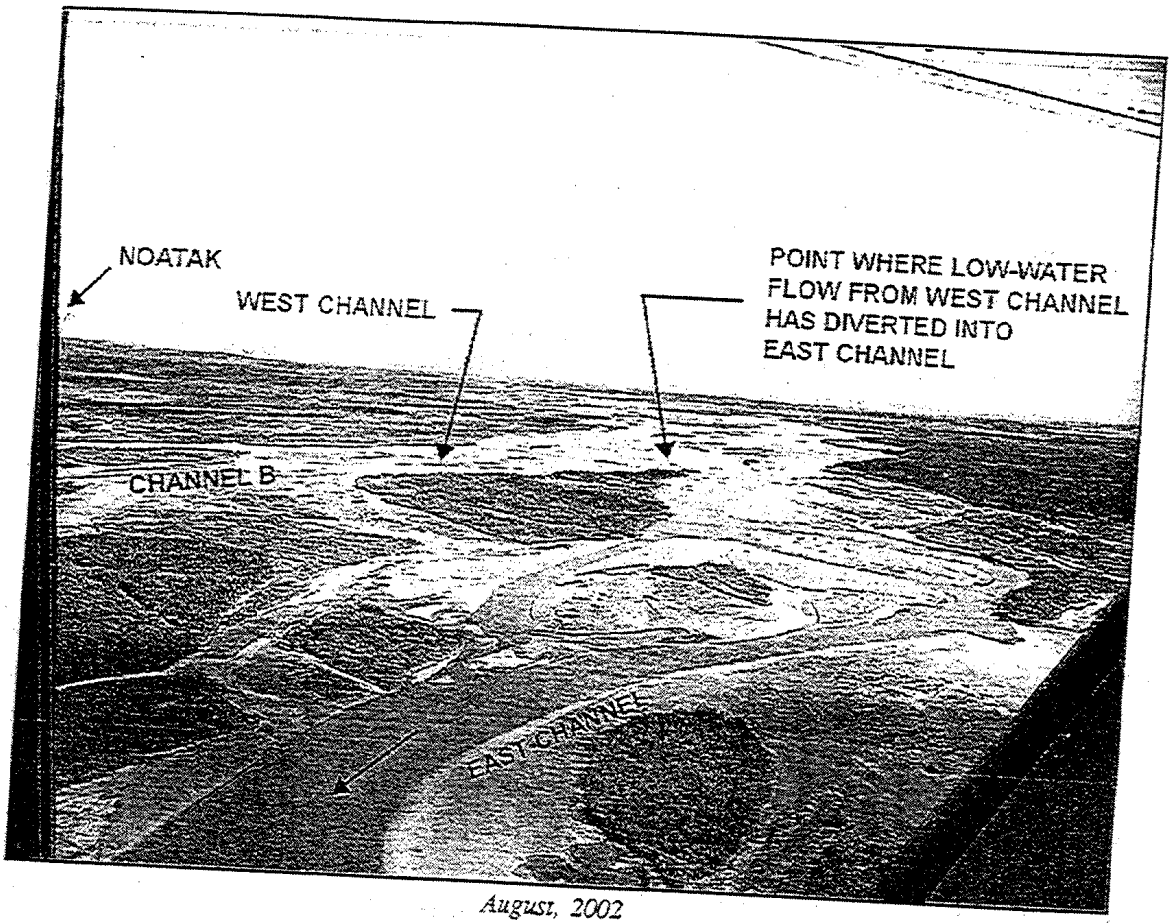
The aerial photographs indicated an increasing aerial extent of vegetation on the floodplain with more and larger areas of vegetation being observed in recent photos. This may indicate a more stable channel configuration at present. This apparent increase in stability may continue for the next 50 years, or the factors that created it may change and the configuration may become more unstable. A less stable channel configuration would make the erosion projections included in this report less reliable.

Since 1952, the discharge in the West Channel has shifted channels up river from the village. In 1952, it flowed by the north side of the village after deflecting away from the bank in a channel referred to as Channel A in this report. Between 1962 and 1978, the discharge in the West Channel appeared to shift gradually into a new channel formed by the coalescing of small over flow channels, referred to here as Channel B. This shift caused the flow from the West Channel to flow more directly toward the village than before. Since 1978, Channel B became the principal channel of the West Channel and Channel A essentially became a high water channel into which several small tributaries of the Noatak River flowed. Changes in the direction and relative discharge in these two channels are interpreted to be the cause of the changing pattern of bank erosion at the village.

The length of the West Channel shortened significantly as the discharge shifted to Channel B and will likely adjust its course to regain the length in the future, by either becoming more sinuous (meandering) or by cutting into the river bank and lengthening the channel downriver near the airport. If it begins to form a more sinuous channel, then rates of erosion may increase in some places and decrease in others.

FIGURE 3

PHOTO OF RIVER FLOODPLAIN



August, 2002

4.2 Location A

Location A consists of the section of river bank lying downriver of the concrete erosion control structure and is shown on Drawing A-03. It parallels the airport and cuts through the old cemetery and sewage lagoon. The soils in the bank consist of ice-rich silt overlying frozen gravel. Much of the recent erosion at Noatak has occurred along this part of the river bank.

Following is a brief summary of the history for Location A, as shown on the aerial photos, along this section of the river bank:

- 1952 - The West Channel of the river was being deflected away from the bank by a large vegetated island.

- 1962 - Gravel had been mined from the vegetated island for airport construction.

- 1972 - A significant portion of the island had eroded away. The river had begun to erode the bank near the old sewage lagoon.

- 1984 - Only the downriver tip of the island remained. The river bank had breached the edge of the old sewage lagoon, which had apparently been partitioned to allow continued use of the western part.

- 1990 - A significant increase in the rate of erosion was noted. The bank had eroded approximately 200 feet since 1984 at the old sewage lagoon and the partition had been breached. The island was completely gone.

- 2000 - The rate of erosion appeared to be similar to that observed on the 1990 photos. However, the point of maximum erosion had moved downriver and erosion had slowed at the old sewage lagoon.

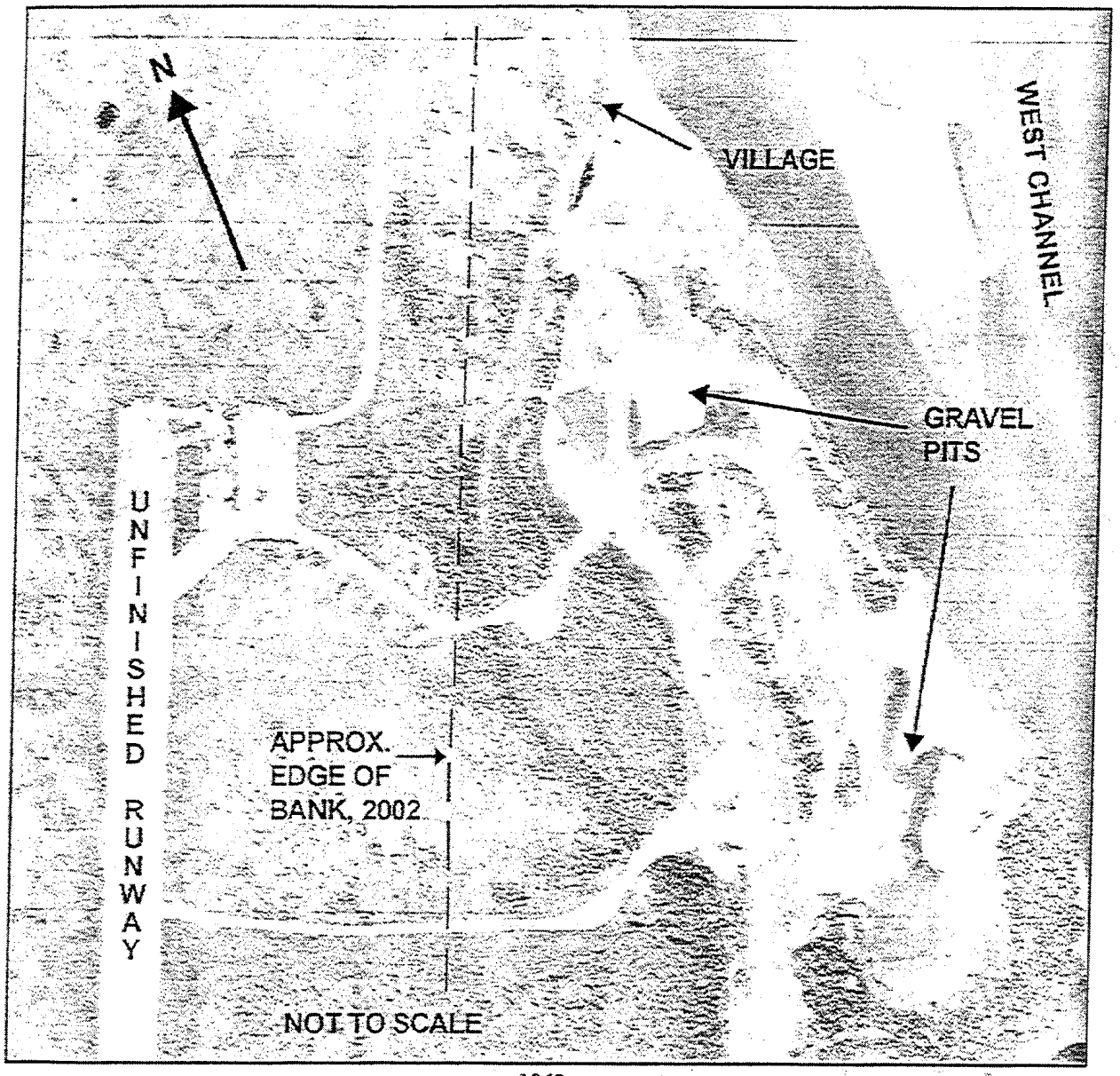
- 2002 - During our field reconnaissance, approximately 75 to 100 feet of erosion was noted at the old sewage lagoon since the 2000 photos were taken.

The mechanism for erosion along Location A appears to consist of thawing of exposed perennially frozen soils which slide down the slope onto the river floodplain. The water then washes the material away exposing more material to erode down the slope. In places where the river is not removing material from the bottom of the slope (such as behind the concrete mat at Location B), the slopes appeared to have stabilized and are vegetated.

The increase in erosion rates along this stretch of the river bank appears to be due to the shifting of flow from Channel A to Channel B. This shift brought the flow in the West Channel more directly to bear against the bank. In 1952, a vegetated island protected this part of the bank. After gravel mining in the early 1960s the island eroded rapidly. The gravel removal may not have caused the erosion, but it likely increased the rate of erosion. Evidence gathered during the field reconnaissance indicates the river may be starting to form a meander bend at Location A. The projected 10 and 20-year erosion limits have been adjusted to show this on Drawing A-03. The recent diversion of flow from the West Channel to the East Channel may reduce short-term erosion rates. However, much of the erosion at Noatak appears to occur during floods when there is still significant flow through the West Channel. The time and sequence of the erosion control structure failure will also have a significant effect on the projected erosion limits. If the structure lasts longer than the approximately 20 to 25 years we have anticipated, then it may slow the rate of erosion toward the airport runway. Its early failure may increase erosion rates if the West Channel can flow more directly into the bank. The failure may also cause a channel shift that will direct the flow away from or into the bank, decreasing or increasing flow accordingly.

FIGURE 4

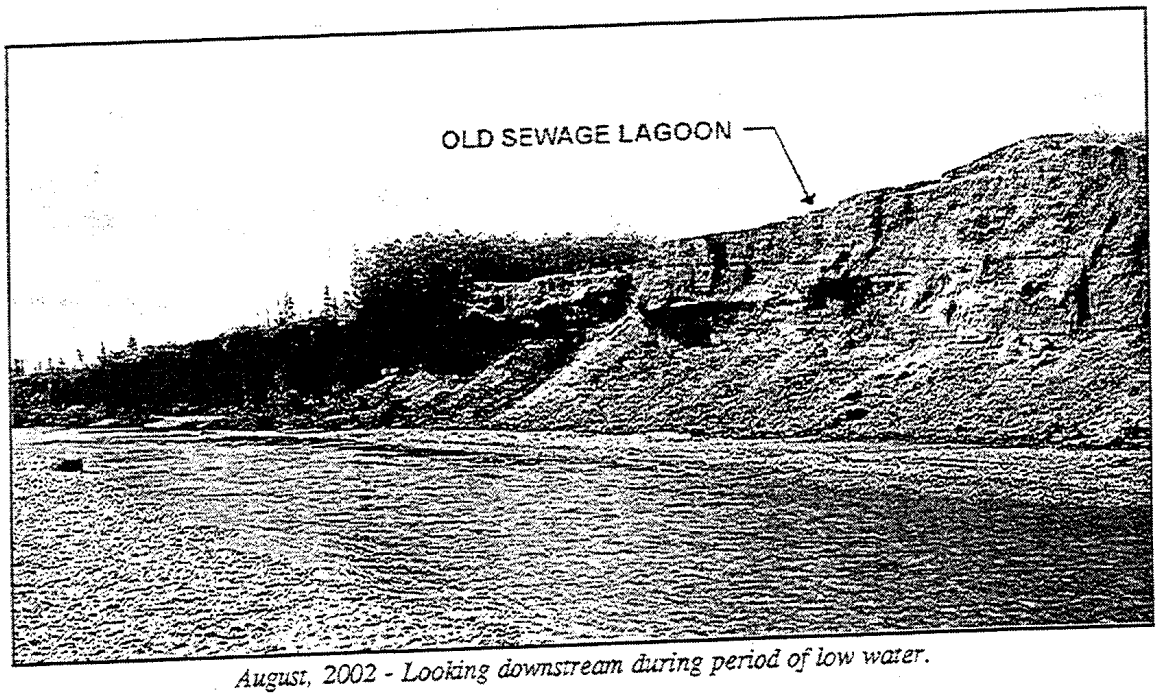
GRAVEL PITS USED TO CONSTRUCT AIRPORT



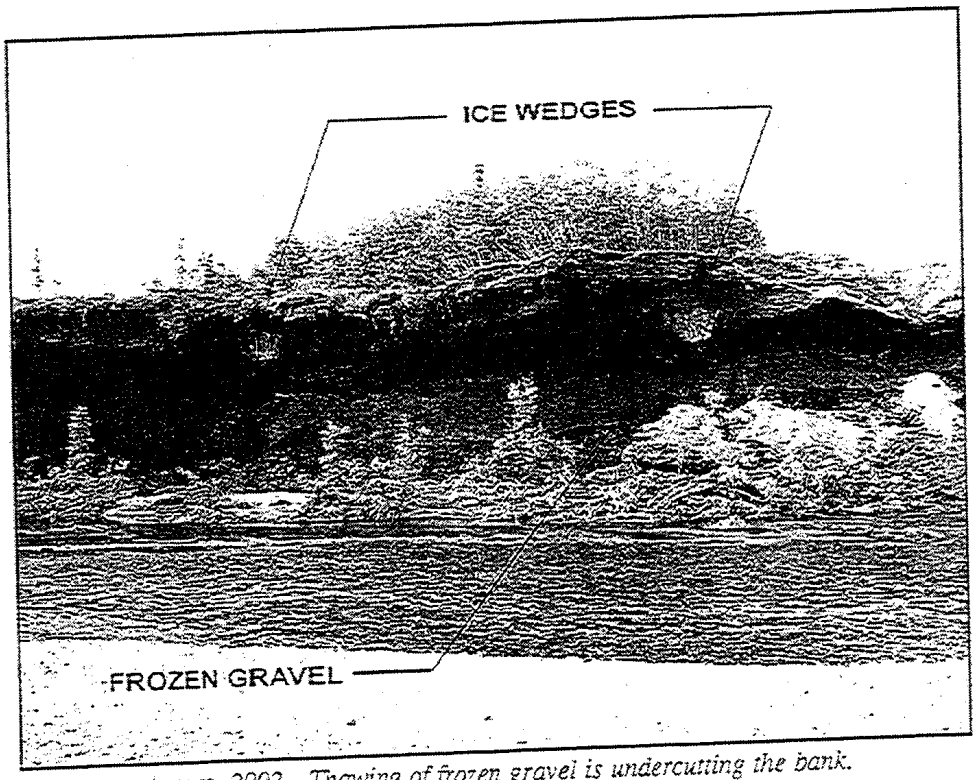
1962.

FIGURE 5

PHOTOS OF RIVER BANK AT LOCATION A



August, 2002 - Looking downstream during period of low water.



August, 2002 - Thawing of frozen gravel is undercutting the bank.

4.3 Location B

Location B consists of the section of river bank protected by a concrete erosion control structure and is shown on Drawing A-04. An oblique aerial photo of Location B is shown in Figure 6. It starts at the north end of the airport and continues upriver to the AVEC tank farm at the upriver end of the village. The banks behind the structure are vegetated and appear to have been relatively stable since it was constructed in the early 1980s.

The following is a brief summary of the erosion history for Location B along this section of the river bank, as shown on the aerial photos and observed during the field reconnaissance:

- 1952 to 1972 - Channel A flowed along the bank, which showed evidence of active erosion (exposed soil in bank). Erosion was occurring at a rate of about 10 feet per year along the bank by the school. Upriver between the school and the present day location of the AVEC tanks there was little noticeable erosion occurring. However, significant erosion had occurred in the 1950s upriver of the AVEC tanks. A wooden crib retaining wall had been built along this location during the 1960s but it had failed soon thereafter.

- 1984 and 1986 - A 1,500-foot long erosion control structure, consisting of bags of concrete wired together and anchored on the shore by piles or by helical anchors had been built. These photos were taken soon after the structure was reportedly built and they show no evidence of failures in the concrete matting.

- 1990 - The photos show evidence of failure along the southern 300 feet of the structure.

- 2000 and 2002 - Photos show that the structure in a concave area along the bank near the school has been covered by gravel.

Prior to construction of the concrete structure, approximately 100 feet of erosion (approximately 5 feet per year) had occurred along the downriver half of the bank protected by the structure. Prior to 1962, there had also been approximately 100 feet of erosion (approximately 10 feet per year) at the upriver end of the structure. Since the structure was built there has been no notable erosion.

The concrete structure was apparently built on a gravel berm placed against the river bank. Bags of concrete were cabled together and anchored to the bank using piles and helical anchors. The upriver half of the structure is apparently still in good shape, with minor areas showing evidence of concrete degradation. The river appeared to have undercut the downriver end of the mat and it was falling apart (see Figure 7). The area of the structure near Water Wells 3 and 4 appears to have started to be undercut by the river and the matting is starting to break apart. Figures 7

through 9 show the condition of the concrete erosion control structure as observed during our August, 2002 site visit.

Information collected and analyzed for this study indicate that the concrete structure will fail completely sometime after 2020. Parts of the downriver section of the structure have already failed and other parts may well fail prior to 2020. It appeared to be designed primarily to prevent erosion caused by flow in Channel A. Failure appears to be likely if and when Channel B cuts through the upriver island at Location E and flows directly into the structure. The resultant scour may rapidly undermine the structure. Once the complete failure of the structure occurs erosion of the bank behind the structure is likely to be rapid. The 50-year erosion limit assumes that a complete failure will occur.

FIGURE 6

PHOTO OF RIVER BANK AT LOCATION B

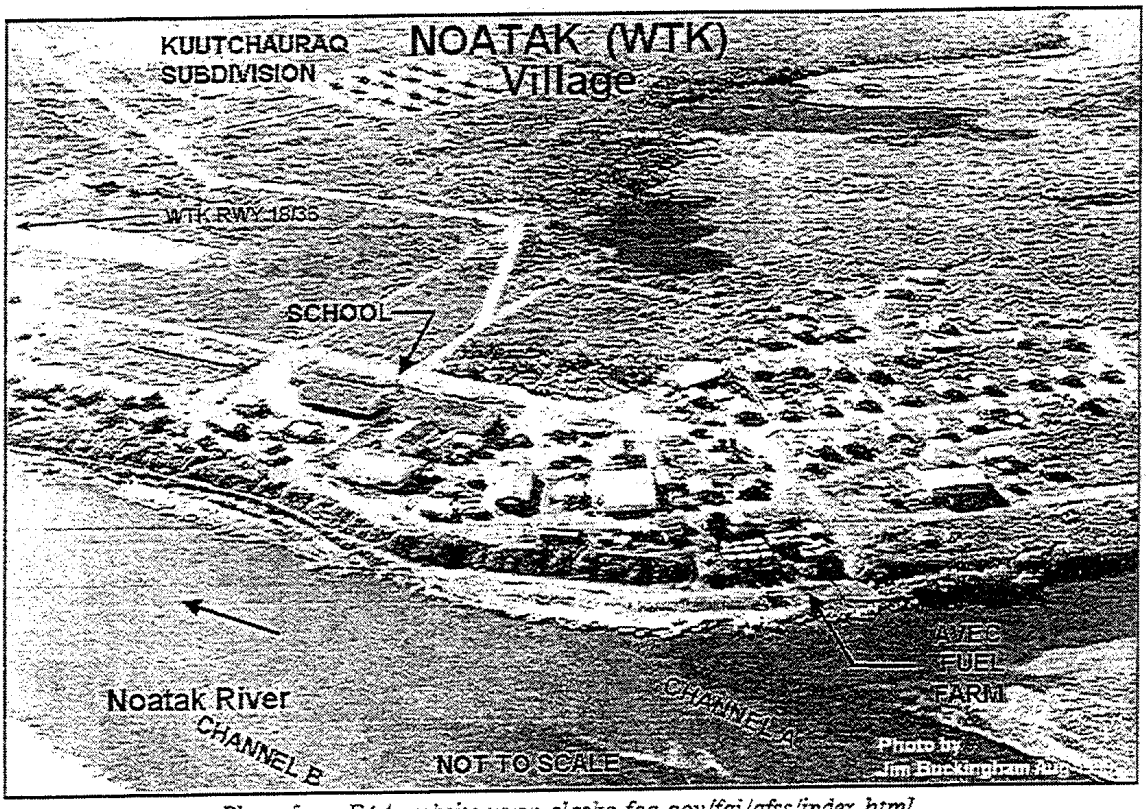
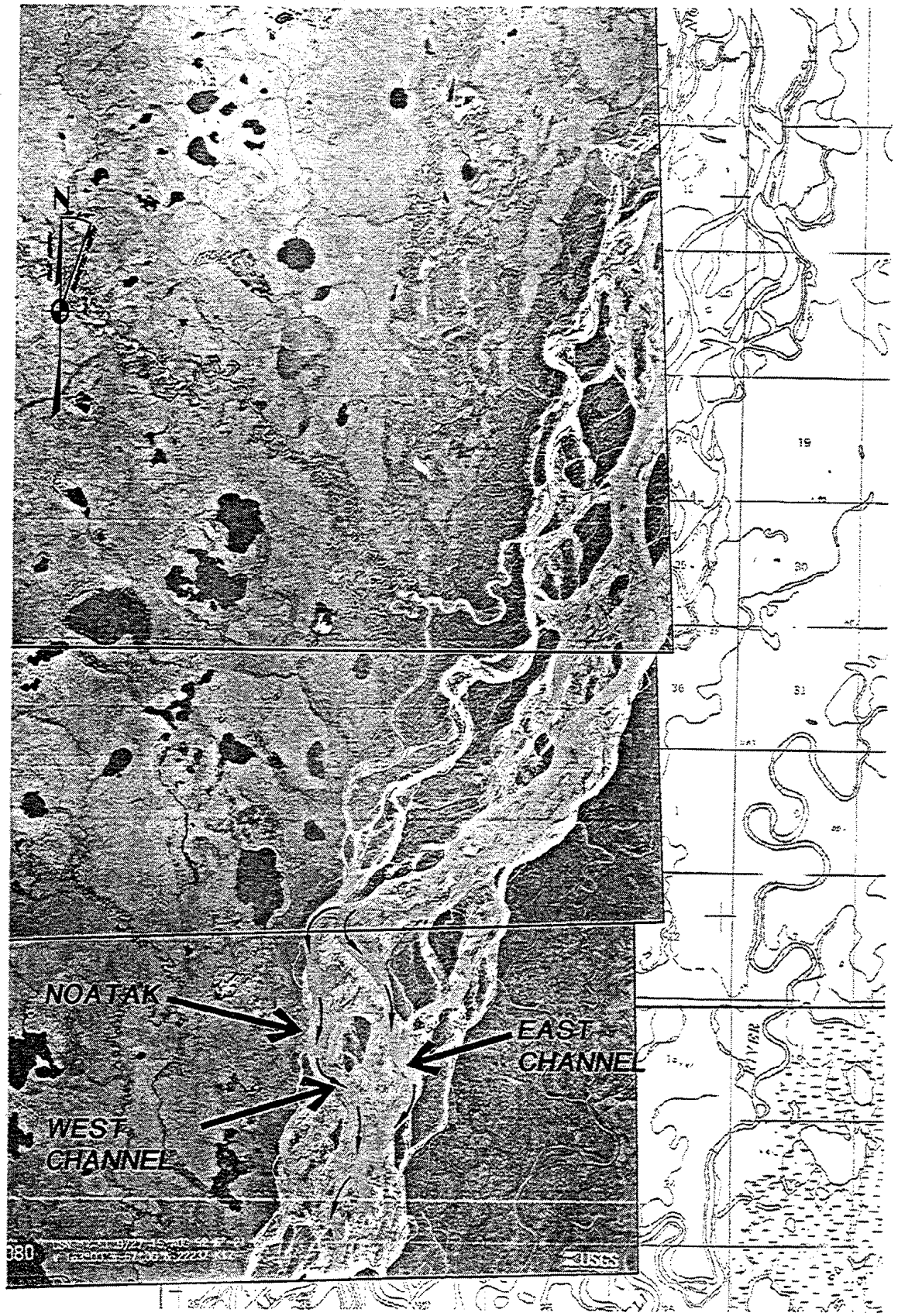


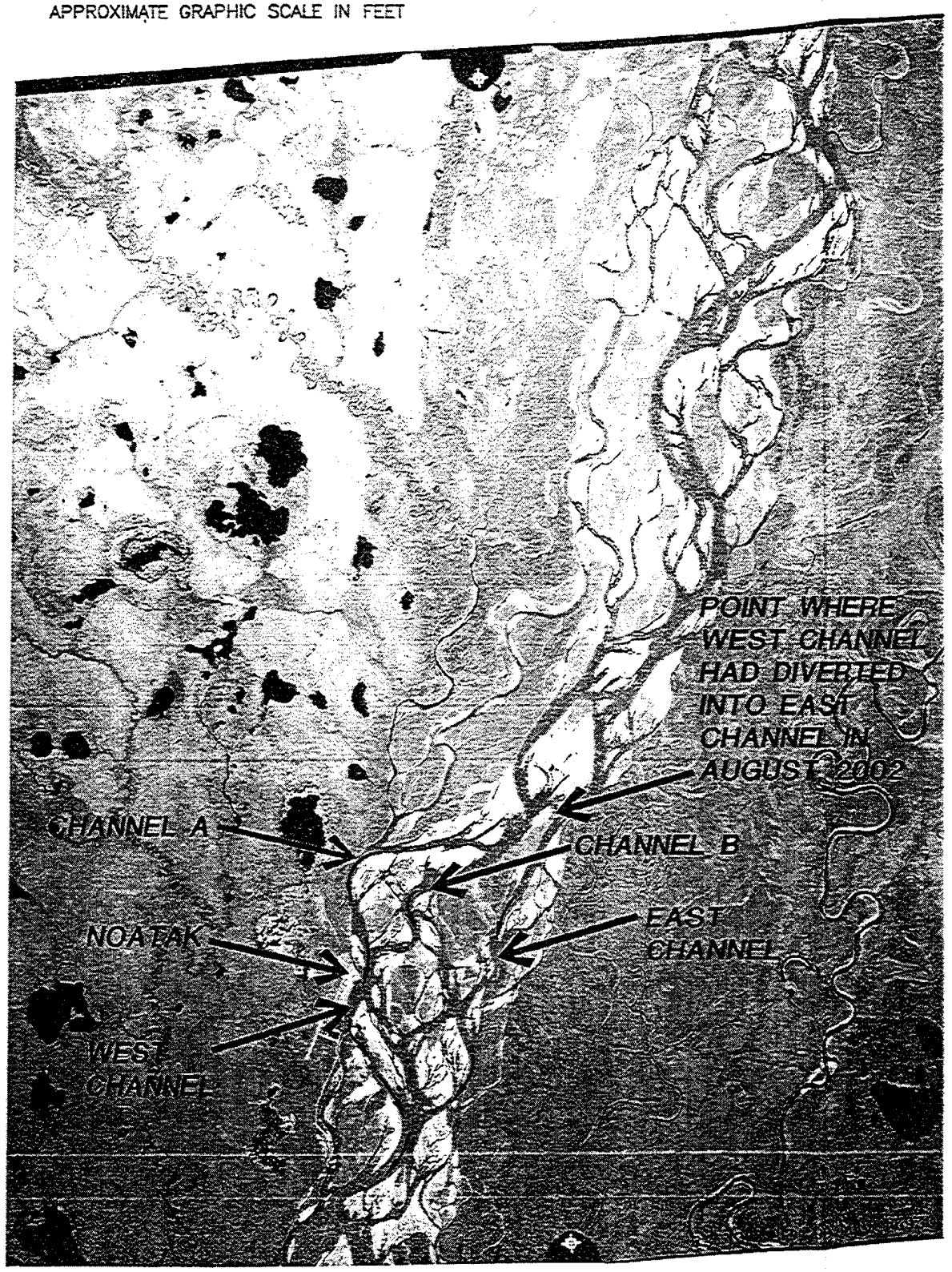
Photo from FAA website www.alaska.faa.gov/fai/afss/index.html.



1952

0 5,000 10,000 15,000

APPROXIMATE GRAPHIC SCALE IN FEET



1978

ALASKA NATIVE HEALTH CONSORTIUM
MULTI-DISCIPLINE A&E SERVICES
ANTHC Project No. AN01-Q55

NOATAK RIVER BANK EROSION STUDY
NOATAK, ALASKA

GREATER NOATAK AREA

R&M CONSULTANTS, INC.
9101 Vanguard Drive, Anchorage, Alaska 99507

1 RECOMMENDED LOCATIONS FOR EROSION MONITORING LINES.

PROJECTED EROSION LIMITS
- 2050
- 2020
- 2010

NOTES:
THE PROJECTED EROSION LIMITS OUTLINE AREAS THAT MAY BE IMPACTED BY EROSION. DEPENDING ON FUTURE CHANGES TO CHANNEL CONFIGURATION AND DISCHARGE, ALL OR PART OF THESE AREAS MAY BE ERODED INTO THE RIVER. THE PURPOSE OF THESE LIMITS IS TO PROVIDE INFORMATION FOR PLANNING FUTURE CONSTRUCTION PROJECTS.

LANDFILL

KUUTCHAURAQ SUBDIVISION

SEWAGE LAGOON

2050

2020

2010

2020

2020 AND 2010

OLD CEMETARY

OLD SEWAGE LAGOON

NOATAK RIVER

WEST CHANNEL

APPROX. LOCATIONS OF WATER WELLS 3 AND 4

LOCATION A

LOCATION B

LOCATION C

APPROX. AREA FOR NEW WATER WELLS

APPROX. LOCATIONS OF WATER WELLS 1 AND 2

CHANNEL A

CHANNEL B

0 200 400 800 1200
APPROXIMATE GRAPHIC SCALE IN FEET

Aerial Photograph Taken on Aug 26, 2000

Technical Memorandum

Date:	February 1, 2013	**W.O.#:**	879301
To:	Bill Cole, DOT&PF (NR)	**cc:**	Raymond Plummer Sara Lindberg
From:	Mel Langdon		
Project:	Noatak Airport		
Subject:	Noatak Riverbank Erosion Assessment		

1 INTRODUCTION

Cumulative riverbank erosion in the vicinity of the Noatak Airport and apron over the past 60 years has caused the loss of approximately 430 horizontal feet, leaving only approximately 160 horizontal feet between the top of bank and the southeast edge of the apron. An erosion study conducted in 2003 by R&M Consultants, Inc. ("R&M study"), prepared for the Alaska Native Health Consortium (ANTHC) (R&M, 2003), projected maximum erosion extent that would impact the apron by 2010, and by 2020, extend into the runway. Active erosion has been observed since 2003, but the full extent of the R&M study projection has not been realized.

The Alaska Department of Transportation and Public Facilities (DOT&PF) is evaluating the need to relocate the Noatak Airport. This Noatak Riverbank Erosion Assessment Technical Memorandum is meant to supplement DOT&PF's evaluation by summarizing erosion issues using previous reports in the vicinity of the runway, evaluating the environmental factors that are still valid today, and highlighting erosion factors for consideration in the future. This memorandum also discusses road settling issues on Pit Road, the access road parallel to the runway, and how it may be related to riverbank erosion.

2 BACKGROUND

2.1 Overview

The airport and Village of Noatak are located on the west bank of the Noatak River (Figure 1), about 25 miles east of the Chukchi Sea coast, 55 miles north of Kotzebue and 70 miles north of the Arctic Circle. The Noatak River rises in the Brooks Range, and flows west for about 80 miles before turning south and entering the Mission Lowlands, a broad forested floodplain where the Village of Noatak is located.

In the vicinity of the Noatak Airport, the Noatak River is a split channel river, with two channels referred to as the East and West channels. The West Channel separates from the East Channel about 1 mile upstream of the airport (Figure 2). Local knowledge indicates that the main river channel migrated from the west to the east side of the river within the past three decades (Mobley, 2006). An appendix to the 1992 Environmental Assessment for runway extension and apron expansion includes a 1992 letter stating that water levels drop rapidly during the spring in the channel of the Noatak adjacent to the village, no longer allowing barge traffic. This may be reflective of the change in the dominant flow channel. The R&M study indicated that the change in the dominant flow channel, from the West Channel to the East Channel, occurred sometime between 1998 and 2002. The 2006 aerial imagery (Figure 2) indicates that the upstream bifurcation point between the East and West channels continues to exist and the East Channel is the dominant flow channel.

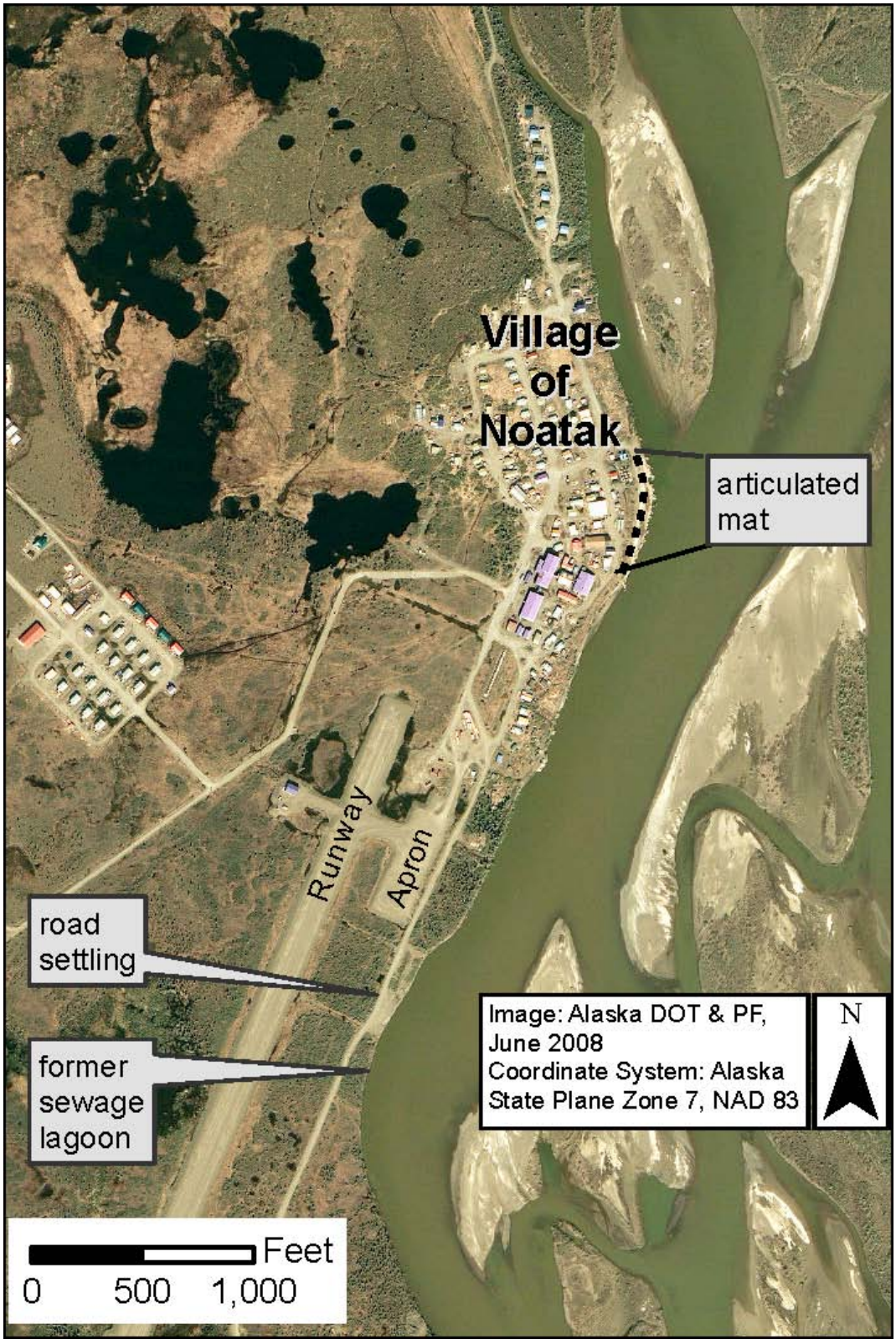


Figure 1: Study Area Features

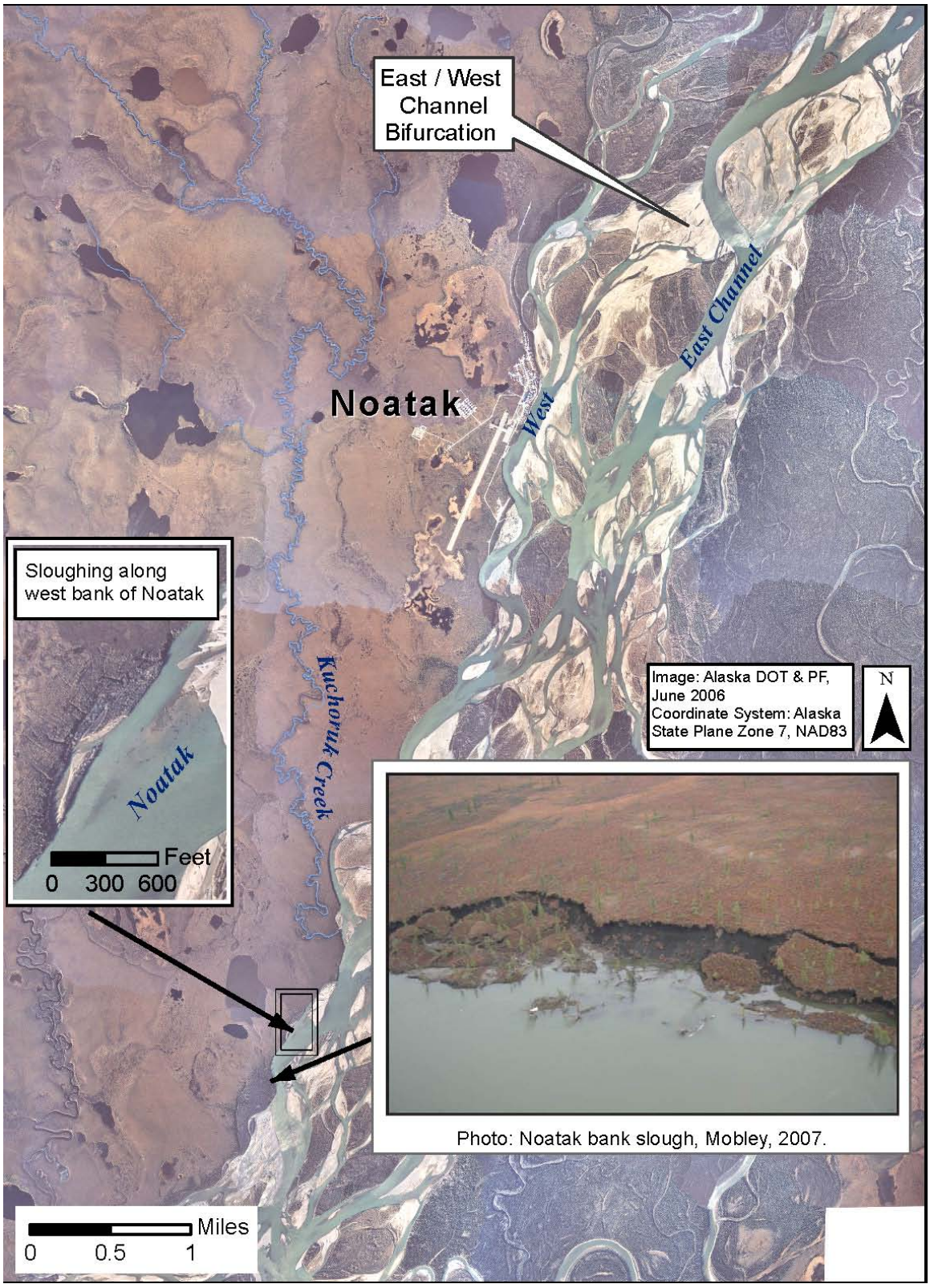


Figure 2: River Setting

Bank erosion has occurred along upstream and downstream portions of the Noatak River. Numerous incidents of erosion have been documented in the mountainous upper main stem of the Noatak River (Swanson, 2012). In the more lowland setting, within 15 miles upstream of the Village of Noatak, erosion has been observed on the west bank over the past 10 years (Kirk, 2013). In addition, approximately 75 to 100 horizontal feet of bank erosion on the west bank has been observed approximately 4 miles downriver from the airport (inset, Figure 2). The incidents of erosion on the west bank, even with the dominant flow not in this channel, are indicative of the westward migration of the river in general and may also reflect other erosion processes described in a following section.

2.2 Previous Studies

1. Erosion in the Vicinity of the Village. As early as 1976, *the "Environmental Considerations for Community Development"* prepared by the Alaska Department of Community and Economic Development Division of Community and Regional Affairs (DCRA) delineated active bank erosion starting about 400 feet upriver from the north end of the runway and extending approximately 800 lineal feet further up river. In 1981, 1,500 lineal feet of articulated concrete mat was installed in this area. This mat has been successful in stemming erosion of the bank above it, but portions of the mat have been undercut by the river and the mat is degrading in other areas.

2. Erosion in the Vicinity of the Airport. Based on aerial photo overlays for 1972 and 2000 in the R&M study, as much as 430 horizontal feet of erosion occurred along a 2,500-foot stretch of the west bank near the airport and former sewage lagoon. A DOT&PF Northern Region trip report dated September 21, 1978, included a photo that showed the sewage lagoon was intact. The R&M study indicated that the sewage lagoon was breached in 1984. The 1992 Environmental Assessment (EA) for runway extension and apron expansion describes westward migration of the river, facilitated by the presence of ice-rich silt that is eroded away more easily than gravel. An appendix to this EA includes a September 1991 memo indicating that the sewage lagoon had been washed out since a previous visit. These observations indicate progressive erosive activity over the 1978 to 2000 time period, averaging 20 feet per year.

3. Quantitative Documentation of Flow Regime. A 2002 U.S. Army Corps of Engineers (USACE) study (USACE, 2002) reported that the East Channel is the dominant low-flow channel (estimating that it carried about two-thirds of the river flow in September 2001, a relatively low-flow period) and probably is also the dominant high flow channel. This study indicates that the East Channel appears to be increasing in depth and capturing an increasing share of the flow and that the current planform favors this trend, because flow into the West Channel takes a perpendicular bend, increasing the potential that the West Channel will fill and have reduced capacity over time. The report observed that the West Channel does convey flow, particularly during high water events. This study estimated maximum bank erosion rates of up to 20 feet per year in some locations.

4. Erosion Rates Defined and Erosion Extents Projected. The R&M study discussed the relative flows in the East and West channels, as above. The study also evaluated potential erosion effects from further flow bifurcation just upstream of the village around an island that has experienced erosion. The R&M study identified historic bank locations from a series of aerial photos from 1952 through 2000 and for six discrete cross-sections, including two across the runway and apron areas of the airport. The study delineated potential maximum extents of erosion to occur by 2010, 2020, and 2050. By 2010, the projected maximum erosion would

extend into the apron and, by 2020, into the runway. For two cross sections in the airport area, the study estimated a maximum rate of erosion of 60 feet per year.

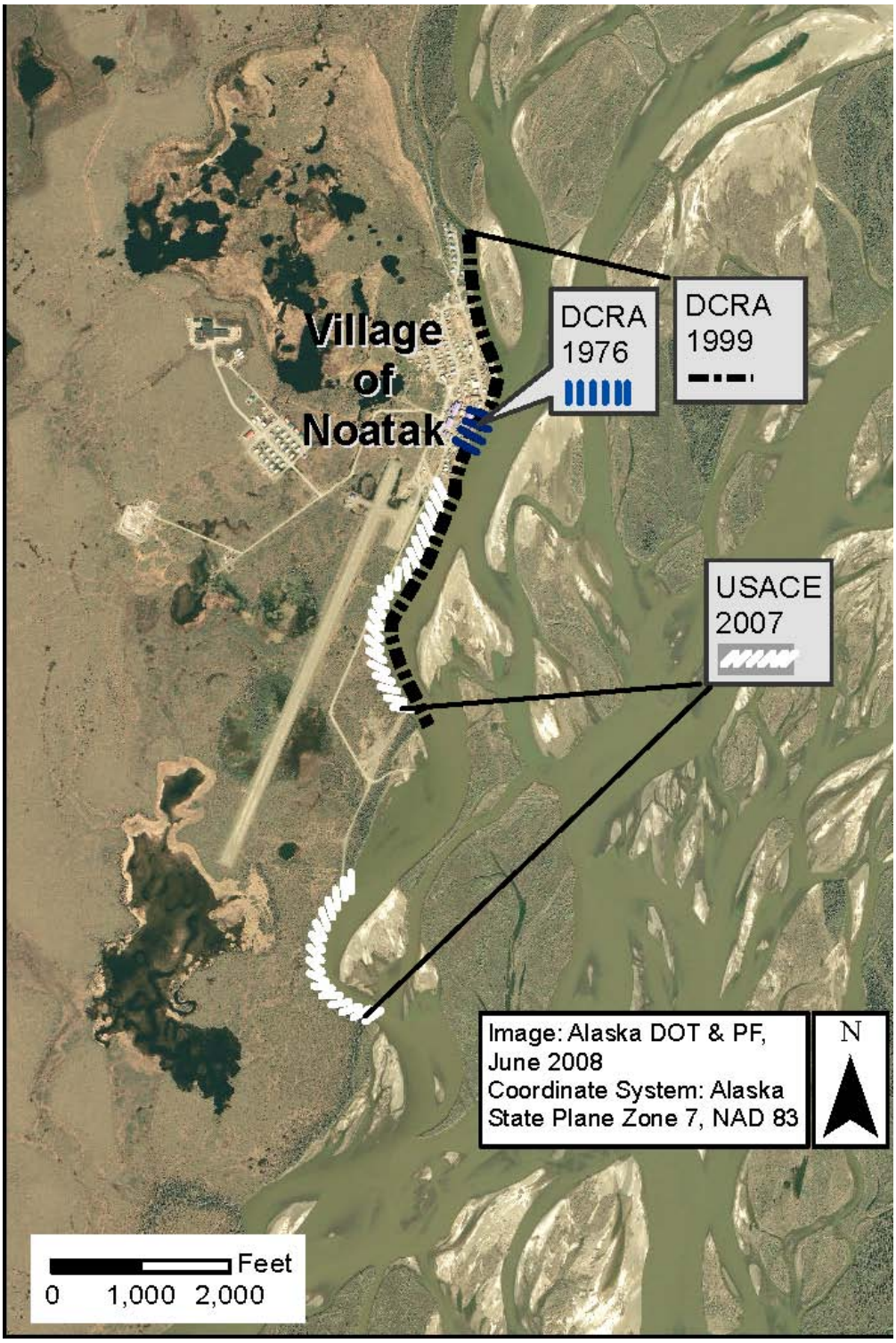


Figure 3: Areas of Erosion

5. Current Areas Subject to Erosion. Areas depicted on maps prepared by two agencies (DCRA, 1999 and USACE, 2007) in the past 13 years are shown on Figure 3. Erosion is more apparent in areas of high, steep banks, than along the area adjacent to the airport apron. The *Alaska Baseline Erosion Assessment* (USACE, 2009) rated Noatak as a "Monitor Conditions Community," having significant impacts related to erosion, in which taking action to prevent a problem from becoming worse would be prudent.

3 EROSION OBSERVATIONS AT NOATAK 2003 - 2012

1. Aerial photographs were obtained by DOT&PF for 2000, 2005, 2006, 2007, 2008, and 2011 and are shown in Figure 4. Because of varying water levels at the time of the photos, the absolute extent of erosion is not measurable at the level of detail in the aerial photos. However, between 2000 and 2005, it appears that about 80 horizontal feet have been lost, corresponding with erosion observed in May-June, 2004.

2. May-June 2004. Erosion was observed southeast of the airport apron during spring break-up. The environmental coordinator for the Village of Noatak notified DOT&PF that there was high water and active erosion on May 28, 2004. DOT&PF staff made a field visit on June 11th and estimated that the edge of Pit Road at the southeast corner of the apron was 125 feet from the riverbank.

3. August 2006. During a reconnaissance visit to assess gravel sources for a new runway (HDL, 2006), the hydrologist observed that significant permafrost was evident on the west mainland bank of the Noatak River, with active erosion present. The study *stated "The exposure of the massive ice at the cut bank and resulting erosion will likely continue whether or not the river geometry continues to direct energy toward the cut bank."*

Figure 4: Aerial Photography 2000 to 2011

4. August 2012. Significant erosion occurred southeast of the airport apron during a very rainy late summer period.

   - A DOT&PF sketch based on GPS coordinates collected on August 1, 2012, site visit and aerial imagery (Figure 6), indicates the distance from the southeast corner of the apron to the riverbank is now about 125 feet. Photos from that site visit (Figure 5) illustrate the bank height and the extent of erosion along the bank. DOT&PF personnel note that active erosion was occurring at Point C shown in Figure 6 and that erosion had occurred both up and downriver from Point C, as illustrated by the red line ("2012 anticipated shoreline") in Figure 6. The actual location of Point C may be somewhat closer to the river than shown on this figure, due to cloud cover interfering with the GPS satellite signal (Dianoski, 2013). Assuming Point C is only half the distance from the river edge than shown on Figure 3 and comparing this with the 2006 edge of bank, it appears that 20 to 30 horizontal feet had been lost.
   - DOT&PF's contract airport maintenance staff in Noatak described the erosion as occurring over several weeks, losing about a foot a day (Kirk, 2013). He described high water all summer and an eddy effect against the bank during the active erosion. The maintenance staff also observed sinkholes next to Pit Road, between the road and the runway. During the summer rain, runoff from the road entered the sinkholes but didn't fill them, apparently because water was seeping out. Seepage from the riverbank face on the other side of the Pit Road from the sinkholes was observed. This may indicate that there is direct seepage from the subsurface to the face of the riverbank.

Figure 5: Bank Erosion August 2012 Orange cones set along east side of Pit Road. (Left) looking upriver from Point C (Right) looking downriver from Point B

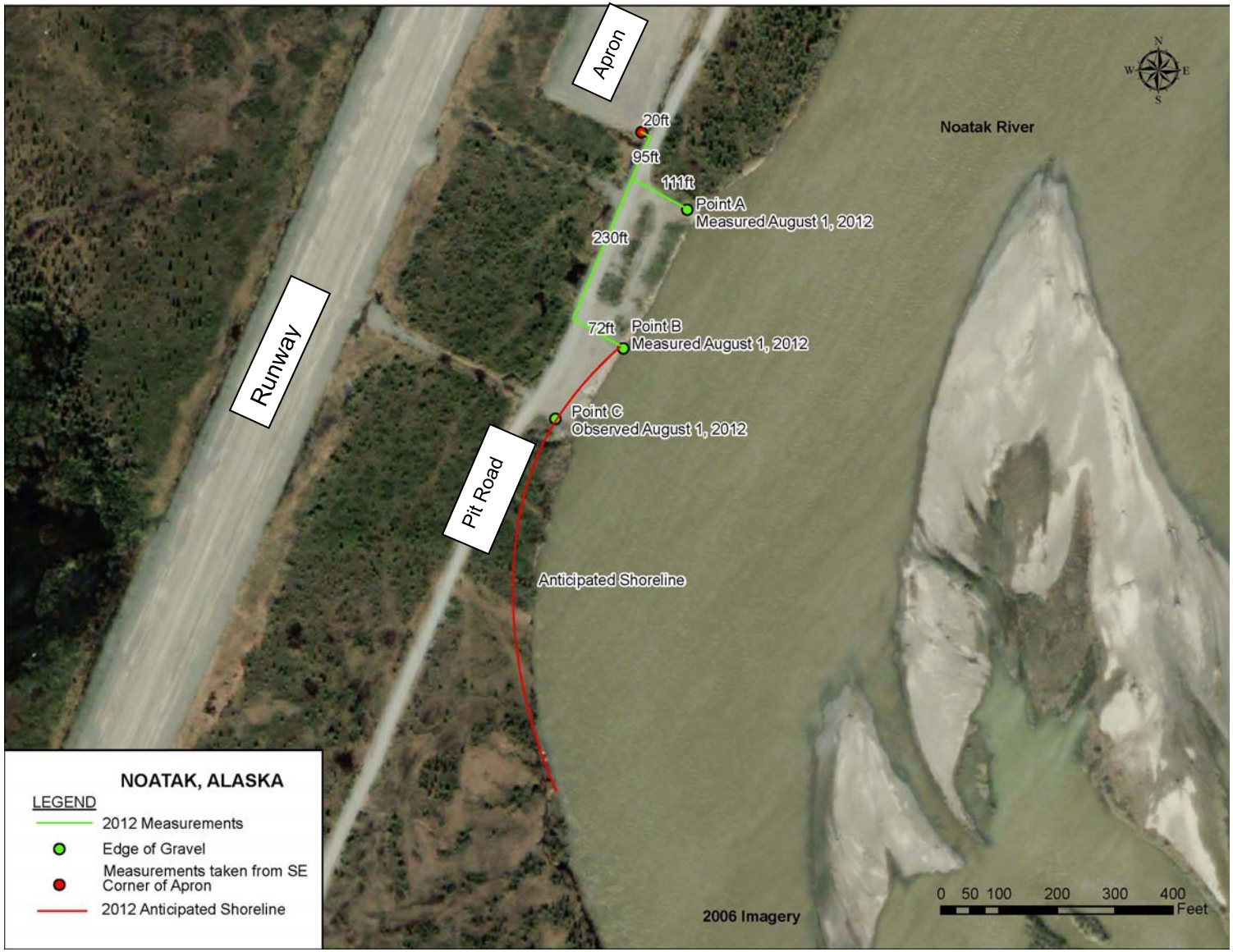


Figure 6: Measured Extents of Erosion August 2012

4 EROSION DRIVERS AND PROCESSES

Climate and river characteristics can influence the types and rates of riverbank erosion.

4.1 Types of Erosion

Thermal Erosion. Thermal erosion occurs when formerly frozen soil media thaws and slumps, particularly along rivers in permafrost settings (Scott, 1978; Lawson, 1989; Gatto, 1995). The Noatak watershed is underlain by continuous permafrost except in some localized areas; such as thaw bulbs associated with rivers, springs, or groundwater. Riverbank erosion processes in permafrost are primarily driven by this detachment of soil in the active (seasonally thawed) layer from the underlying permafrost layer. Deeper depths of thaw may be caused by exposure of the soil profile to ambient temperatures either after sloughing or due to site disturbance, which removes the insulating effects of vegetation (e.g., construction of the airport).

In non-cohesive (gravelly and sandy soils), thawing causes the loss of frozen water holding the soil matrix together at steep angles, and the exposed bank slumps to its angle of repose. In cohesive soils (silts and clays) deeper depths of thaw causes melt water to exert pore pressure as it drains. This seepage force and the saturation of bluff faces and cut banks causes slumping.

Sediment Transport. As the soil slumps, it may temporarily buttress the intact bank by providing slope toe protection and it may also provide thermal protection to the slope face as well. When this material is carried away by river flow, which may not necessarily require high flows, further slumping can occur. This starts the cycle over by exposing a new face to surface interaction, including warming and water seepage.

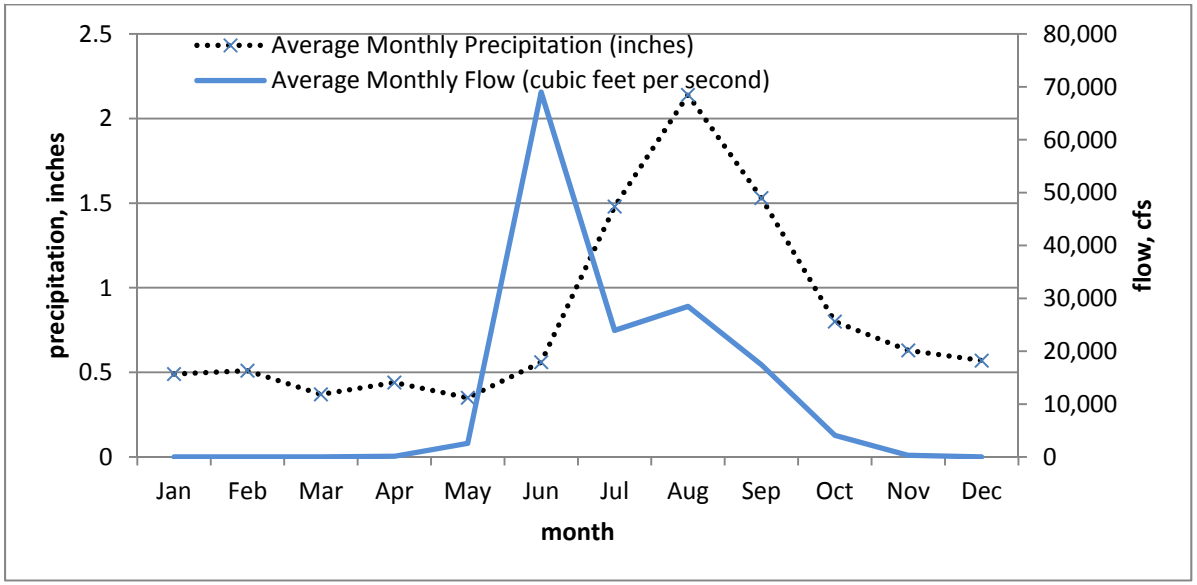
Particle Erosion. In addition to thermal erosion, due to changes in thaw depth and permafrost, aided by sediment transport, it has been observed (Kirk, 2013) that particle erosion due to shear stress and turbulence exerted by water flow occurs at higher flows. When higher flows occur at times when the bank material is not frozen, such as during late summer rains, the river flow will remove bank material as well as material at the toe.

4.2 Climate Influences

Historic Climate Setting. The precipitation pattern in the Noatak watershed follows a strong seasonal trend, with about 50 percent of the precipitation occurring in July, August, and September. Precipitation as snow accumulated from October through April melts during the May and June breakup period. Seasonal flows in the Noatak River respond to these climatic factors: spring high flows are linked to rapid snow melt while late summer and fall high flows are related to rainfall precipitation.

Figure 7 shows average monthly precipitation at Kotzebue and total flow in the Noatak River, as gauged by the U. S. Geologic Survey downstream from the split channel section. The Kotzebue Airport is the closest climate station to the Noatak Airport with a long record. Although these precipitation values were not measured at Noatak or in the Noatak watershed, they provide a representation of the seasonal precipitation variability. Flow was only measured for seven years (1965 to 1971) so does not reflect a robust or contemporary period of record, but does show seasonal flow variation.

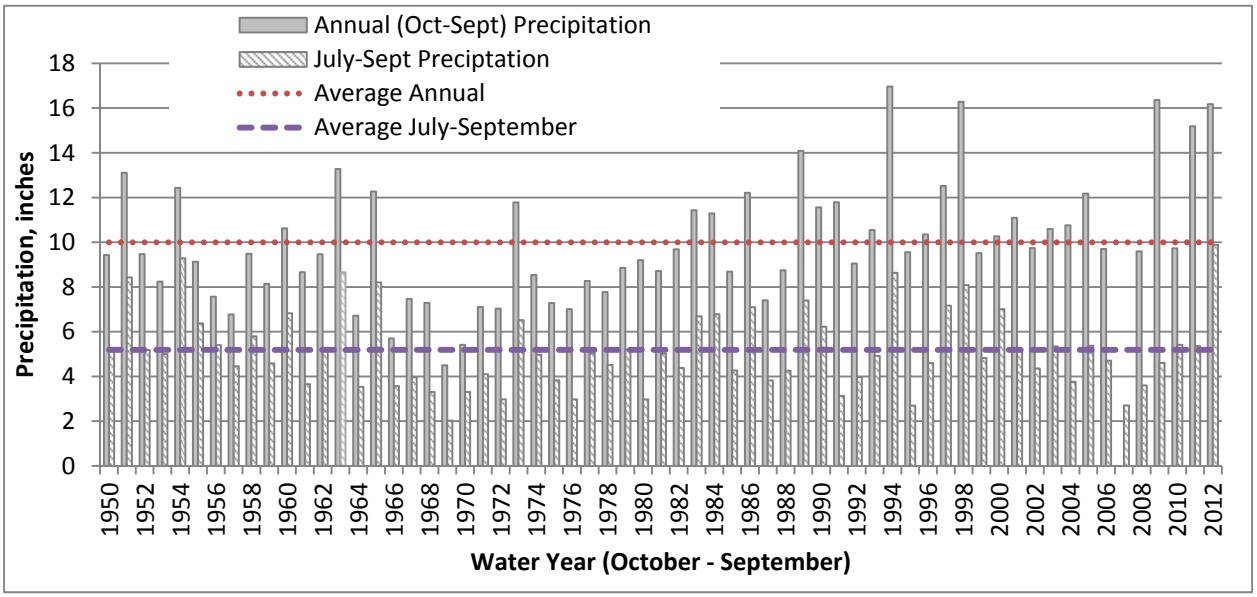
Figure 7: Average Monthly Precipitation and River Flow



Precipitation at Kotzebue Ralph Wein Memorial Airport Alaska, 1949 – 2012
Flow in Noatak River, U.S. Geological Survey (USGS) Gage 1574600, 1965 – 1971

Annual and late summer precipitation depths at Kotzebue Airport are shown in Figure 8. As mentioned above, although these values were not measured at Noatak, they provide a representation of the variability of precipitation from year to year and illustrate years of higher than normal precipitation. Note in particular the high precipitation in late summer 2012, corresponding with the erosion event that occurred in August 2012 as compared to the long-term July-September average.

Figure 8: Historic Precipitation at Kotzebue Ralph Wein Memorial Airport Alaska Period of Record: 1950-2012



Projected Climate Setting. In addition to year-to-year variability, the climate setting is experiencing decade-to-decade variability (Pacific Decadal Oscillation) and a trend towards long term warming.

Long term warming causing permafrost degradation due to deepening of the active (seasonally thawed) layer has been well documented (Romanovsky et al, 2010). The Scenarios Network for Alaska and Arctic Planning, University of Alaska, (SNAP, 2013) has developed projections of temperature and precipitation for communities in Alaska. Table 1 shows a summary of the projected increases in precipitation and temperature for Noatak through 2040.

Table 1: Historic and Projected Temperatures and Precipitation at Noatak

Temperature (^{o}F)		Precipitation (inches)	
Historic	Projected	Historic	Projected
(1961-1990)	(2031-2040)	(1961-1990)	(2031-2040)
26	27.3	12.4	14.9

Other climate factors, such as entering into a 'cold' period of the Pacific Decadal Oscillation (PDO) might have other effects. For example, during cold periods of the PDO, above average summer flows may occur (Brabets and Walvoord, 2009). Since there is less seasonal frost in warmer months, higher flows during those periods are more likely to transport materials deposited by slumping or to cause active particle erosion, as occurred in 2012.

These trends of higher precipitation and warmer temperatures, if continued, will accelerate normal thermal erosion processes. As noted above, higher flows related to fall precipitation occur at times when the banks are not frozen, so that both particle erosion and sediment transport of thermally eroded sediment can occur. Although the projected increase in precipitation has not been quantified by season, if it were to occur in late summer, it would likely cause corresponding high flows, leading to further bank erosion.

In general river processes, peak erosion events do not necessarily correlate with peak flows, indicating that erosion can occur at a steady rate. It is also common, in other settings, to have relatively long periods of little erosion punctuated by short periods of marked erosion. Along the west bank at the Noatak Airport, where both thermal and particle erosion processes are in play, both ordinary and high flow events contribute to sediment removal and bank erosion.

4.3 River Characteristics

Split Channel. As indicated in both the R&M study and the USACE letter report (UASCE, 2002) the split between the East and West channel is present, with the dominant flow in the East Channel at present. The USACE letter report indicates that the bifurcation appears to be fairly stable. Local observers (Kirk 2013) confirm that the East Channel continues to be the main channel. This is also apparent in a 2006 aerial photo (Figure 3).

Although the channels of split-channel rivers are generally more stable than braided channeled rivers, the history of channel-shifting upriver from Noatak indicates that this could happen again. Since the process leading to this shift is not well understood, a shift back to the West Channel cannot be discounted.

River Planform and Migration. Another pattern of the Noatak River in this area is its sinuosity, typical of braided and split-channel rivers, as shown by its arcuate channel forms. As mentioned previously,

erosion along the bank at the airport and Village of Noatak are not isolated cases and are part of a more pervasive trend of channel migration in this arcuate pattern.

Underlying Materials. The Noatak River has capacity to move sediment, as evidenced by its mobile gravel bed and point bar islands. Its banks are comprised of erodible gravels, silts, and sands and there is a lack of any resistant material, such as bedrock control, to limit the erosion potential (Stevens et. al., 2003).

5 EROSION AND POTHOLING IN THE VICINITY OF THE AIRPORT

5.1 Erosion Processes in the Vicinity of the Airport

In the immediate area of the airport and village, localized effects of flow focusing, island position, channel plan form patterns, and bank protection affect the location of erosion.

Flow Focusing and Island Position. As discussed in the R&M study, the bifurcation of the West Channel into the A and B channels in the vicinity of the Village and the potential for changes in these channels creates more uncertainty about the trajectory of the water and timing of potential changes. Focusing the flow, and higher flow, towards the west bank, would accelerate erosion.

Channel Planform Patterns. The general pattern of planform of the Noatak River in this reach of the river is sinuous and arcuate (Figure 2) and the projected erosion extents in the R&M study reflects this. The leading edge of the erosion observed in 2004 and 2012 follows that pattern. Notable at the Noatak Airport, downriver from articulated mat, is a long stretch of linear rather than curved channel pattern. As discussed in the R&M study and apparent from observed erosion, a meander pattern is likely to develop. The upgradient bank armoring may have forestalled this channel migration and failure in that armoring may accelerate erosion.

Localized Bank Protection. Silt is the predominant foundation soil in the vicinity of the airport (DOT&PF, 1986) and there is a lack of any bedrock control. Although permafrost can act as erosion protection, its loss due to thermal erosion provides a thaw mechanism to accelerate erosion. However, the presence of the articulated concrete mat up river is likely to be affecting the flow such that it is focused parallel to the bank adjacent to the airport apron, and somewhat more towards Point C in Figure 6. Failure of the articulated mat could move the focus of the flow more towards the apron and accelerate erosion along a longer section of riverbank adjacent to the runway.

5.2 Pot-holing of Pit Road

Pot-holing and depressions in the access road parallel to the runway have occurred. The four most likely and interrelated reasons are non-homogeneous subgrade, thermokarsting, freeze-thaw action, and active piping of soil.

1. Non-homogeneous material can settle differentially, particularly when subjected to variable moisture conditions (dry early summer, wet late summer) and freeze-thaw conditions. A March 8, 1981, letter from the Alaska Village Electrical Cooperative to DOT&PF indicated that scrap metal had been buried in the road to the apron and that freeze-thaw action had brought it to the surface. While it is not known if this is in the same vicinity of the current areas of concern, it is an example of the possibility of non-homogenous material. Given comparatively light traffic usage on this road, it may take a longer time for the subsurface discontinuities to appear. But

given the 20+ years since the fill was placed and the road put into service, it is likely that these will continue to occur.

2. Thermokarsting. This phenomenon occurs when ice-rich lenses in the foundation material below the surface (in this case, below the road embankment) become thawed and melt water flows out. Melt water from these lenses can flow laterally through subsurface material and seep out of bluffs or cut faces, such as riverbanks, or it can wick up through the overlaying material, particularly if the material is fine-grained, where it pools on the surface and evaporates or flows off. As melt water leaves, the voids it occupied collapse, resulting in subsidence at the surface.

   Logs of boreholes installed by DOT&PF NR (to maximum depths of 8 feet) in the vicinity of the runway and apron in September 1986 (DOT&PF, 1986) noted ice-rich soils or lenses in three boreholes at depths from 1 to 6 feet below ground surface, and depth to frozen soil of no more than 5 feet. If the ice lenses were also present along the road alignment, which is likely, this would provide the setting for thermkarsting to occur.

   Note that by contrast, logs of boreholes installed (to maximum depths ranging from 10 to 13 feet) in September 2006 (DOT&PF 2008) in the apron area and along the runway indicate depth to frozen soil of 8 to 11 feet and no notations of ice lenses above the frozen soil. Although there is likely year-to-year variability in active layer thickness (in this case approximated by depth to frozen soil in September), the difference between a maximum of 5 feet in 1986 and a minimum of 8 feet in 2006 may also be reflective of a trend in permafrost degradation.

3. Freeze-thaw action. Localized depressions caused by settling, whether due to thermokarsting or non-homogenous subsurface material, will accumulate water. If water accumulates just before freeze-up, for instance due to late summer rains before it can evaporate or infiltrate, its expansion during winter freezing and subsequent contraction during breakup can cause potholing as well.

4. Piping is a mechanism of internal or subsurface erosion caused by seepage. When water accumulates, as in a temporary sinkhole caused by thermokarsting, and hydraulic pressures rise, seepage forces can erode fine soil particles, leading to loss of material and failure of the embankment or surface. Assuming the road is underlain by more permeable material (gravel) than the adjacent foundation soil, this offers a preferential pathway for the water to seep towards the riverbank, accelerating the loss of subsurface fines and leading to subsidence, and in some cases, more dramatic failure.

   Given the observed conditions of permafrost degradation and proximity to the eroding riverbank, it's likely that the sinkholes and depressions found in Pit Road are related to the mechanisms causing the riverbank failure.

6 CONCLUSIONS

6.1 Riverbank Erosion

The prognosis is that the west bank of the Noatak River in the vicinity of the Noatak Airport will continue to erode as suggested in the R&M study. The vertical face of the west bank of the Noatak River will continue to slump due to thermal erosion. As the slumped material is removed by river flow, the west bank will recede towards the west.

This prognosis is based on evidence of continued slumping since 2003 and environmental factors.

1. Evidence of Slumping. Major episodic sloughing of the banks next to the airport occurred in 2004 and 2012. Slumping and erosion of the west bank has also occurred in other places up and down the river.

2. Environmental Factors. The factors that contribute to the continuing potential for significant erosion are still at play, as follows:

   - Even in stable temperature regimes, slumping due to thermal erosion is a characteristic of rivers in areas with continuous permafrost. With projected warming trends, this thermal erosion is likely to accelerate, due to accelerated permafrost degradation.
   - Projected increase in precipitation is likely to increase the incidence of high flows leading to particle erosion.
   - Continued deterioration of the articulated mat upriver from the apron may lead to more failure in that vicinity. Failure in that area would likely change the trajectory of the flow and bring more shear stress and turbulent flow to bear on the riverbank adjacent to the airport apron. Changes in flow patterns in the West Channel immediately upriver from the Village (so called channels A and B) may also change the flow trajectory.
   - The upstream bifurcation of the East and West channels continues to shunt the water towards the east, which will reduce the risk somewhat, especially if depositional processes there maintain the East Channel as the dominant flow channel. While currently stable, if more water were to flow in the West Channel, it is more likely to cause accelerated erosion on the west bank in general and potentially in the vicinity of the Noatak Airport.

The timing of major erosion events is difficult to predict. The August 2012 erosion appeared to be due to extremely high precipitation and flow, while the 2004 event did not appear to be correlated with precipitation.

6.2 Access Road Deterioration

Based on information related by site observers, thermokarsting and piping appear to the contributing causes for sinkholes and depressions in Pit Road. The piping is accelerated as the distance to the cut bank is reduced, such that continued west bank erosion may cause more thermokarsting to occur by providing a path for melt water to dissipate.

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Noatak River Erosion Update

Site Visit: March 25th, 2015

6/10/2015

On March 25th, 2015, the Department of Transportation and Public Facilities held a community meeting in Noatak discussing information about relocating the Noatak Airport. The relocation is necessary because of the encroachment of the Noatak River towards the apron; intrusion of the runway safety areas; and to construct the necessary updates required to meet FAA standards for safe and efficient operation of a rural airport.

The previous site visit where the DOT&PF recorded measurements of the embankment was in 2013.

As shown in the graphic attached, there are two significant locations labeled in negatives (black and white) which display the total perpendicular distances of the far edge of haul road to the gravel pit to the edge of the eroding riverbank.

Distance (1) which was recorded in 2013 was taken at 102 feet. Distance (2) which was recorded in 2015 was taken at 96 feet. This two year interval indicates there is a loss of **6 feet** at this particular section of the haul road.

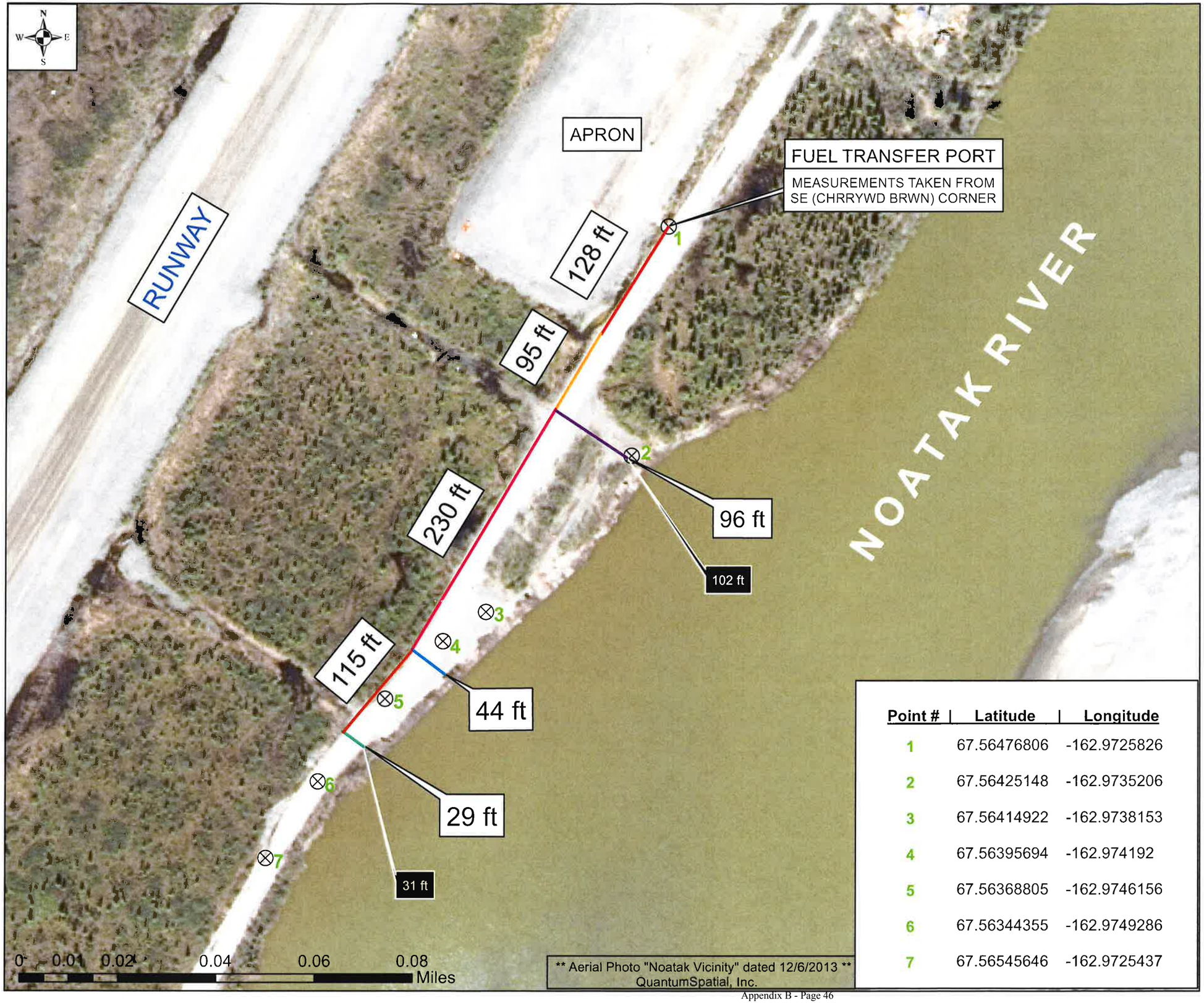
Distance (3) was also recorded in 2013 was taken at 31 feet. Distance (4) was recorded in 2015 was taken at 29 ft. This displays a loss of **2 feet** at this particular section of the haul road.

Since 2000, the community of Noatak and the DOT&PF has recorded a loss of more than **40 feet** of embankment.

** The DOT&PF recently received notices as well as the provision of photos of the gravel cliff from residents of Noatak, displaying the aftermath of ice-breakup and the effects of the continually thawing and exposed active layer of permafrost.

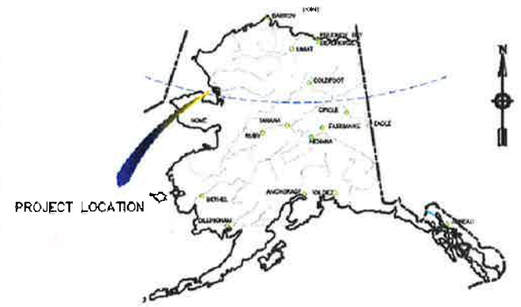
Following the graphic of the erosion occurring is a few recent photos of the erosion from a community member, for the DOT&PF.

Noatak Riverbank Erosion Update 2015



** Aerial Photo "Noatak Vicinity" dated 12/6/2013 **
QuantumSpatial, Inc.

Point #	Latitude	Longitude
1	67.56476806	-162.9725826
2	67.56425148	-162.9735206
3	67.56414922	-162.9738153
4	67.56395694	-162.974192
5	67.56368805	-162.9746156
6	67.56344355	-162.9749286
7	67.56545646	-162.9725437



Legend

⊗ 25/03/2015 Erosion Coordinates

*** Projected Coordinate System: ***
Name: NAD_1983_Alaska_Albers

Geographic Coordinate System:
Name: GCS_North_American_1983

DATES OF RECORDED MEASUREMENTS:

BLACK ON WHITE TEXT: 25/03/2015

WHITE ON BLACK TEXT: 12/06/2013

State of Alaska
Department of Transportation and Public Facilities

DRAWING: BJK | DATE: 6/2015

APPENDIX C

NOATAK ROAD AND AIRPORT FEASIBILITY ANALYSIS

Page

Alaska Department of
Transportation & Public Facilities

Project Information
November, 2004

Noatak Road and Airport

Project Description

The Alaska Department of Transportation and Public Facilities is currently performing a preliminary engineering and economic study to evaluate the feasibility of these two transportation projects. The study area is between the Village of Noatak, and the existing Red Dog Mine Road.

This information booklet contains a variety of maps and data produced and collected for this project. All data should be considered preliminary, as no detailed design or environmental work has been performed.

The road and airport projects evaluated in this study include:

- Constructing a road to connect the Village of Noatak with the Red Dog Mine Road

- Constructing a new airport in the vicinity of the Village of Noatak

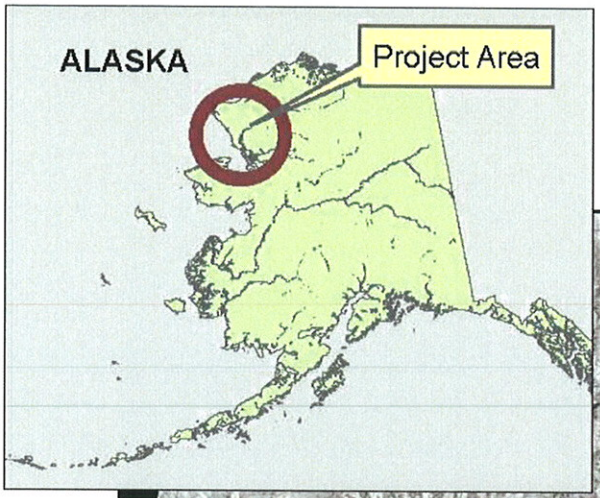
Project Contacts are:

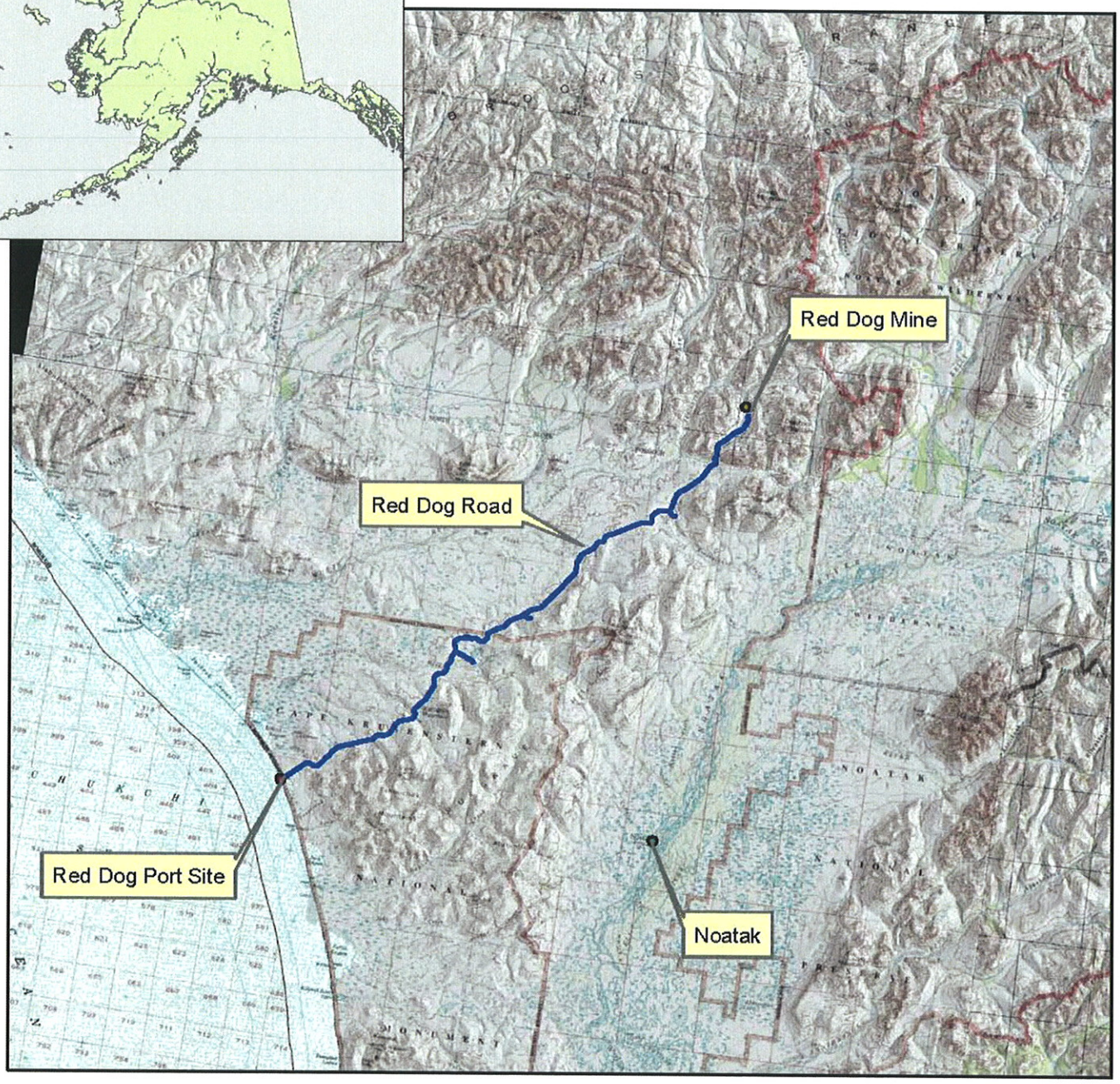
Ryan Anderson, P.E.	Ryan_anderson@dot.state.ak.us	907-451-5377
Patricia D. Miller, P.E.	Patty_miller@dot.state.ak.us	907-451-2275
Mike McKinnon	Mike_mcKinnon@dot.state.ak.us	907-465-4069

Alaska Department of Transportation and Public Facilities

Noatak Road and Airport

Vicinity Map





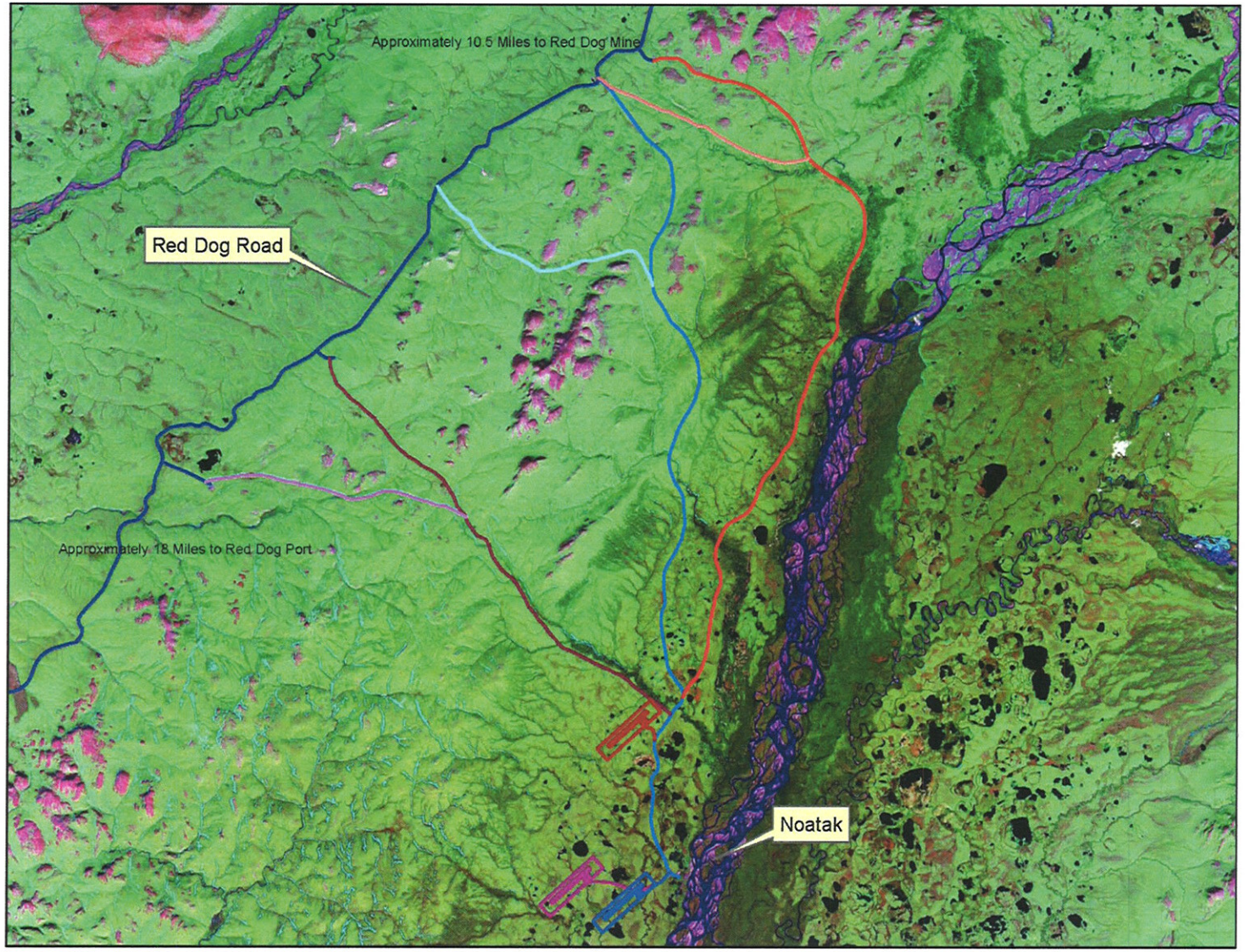
0 3.757.5 15 22.5 30

Miles

Alaska Department of Transportation and Public Facilities

Noatak Road and Airport

Overview



Road Options

- R1
- R1a
- R2
- R2a
- R3
- R3a

Airport Options

- A1
- A2
- A3

Source of Data: 2000 Landsat Imagery (NASA)

N W E S

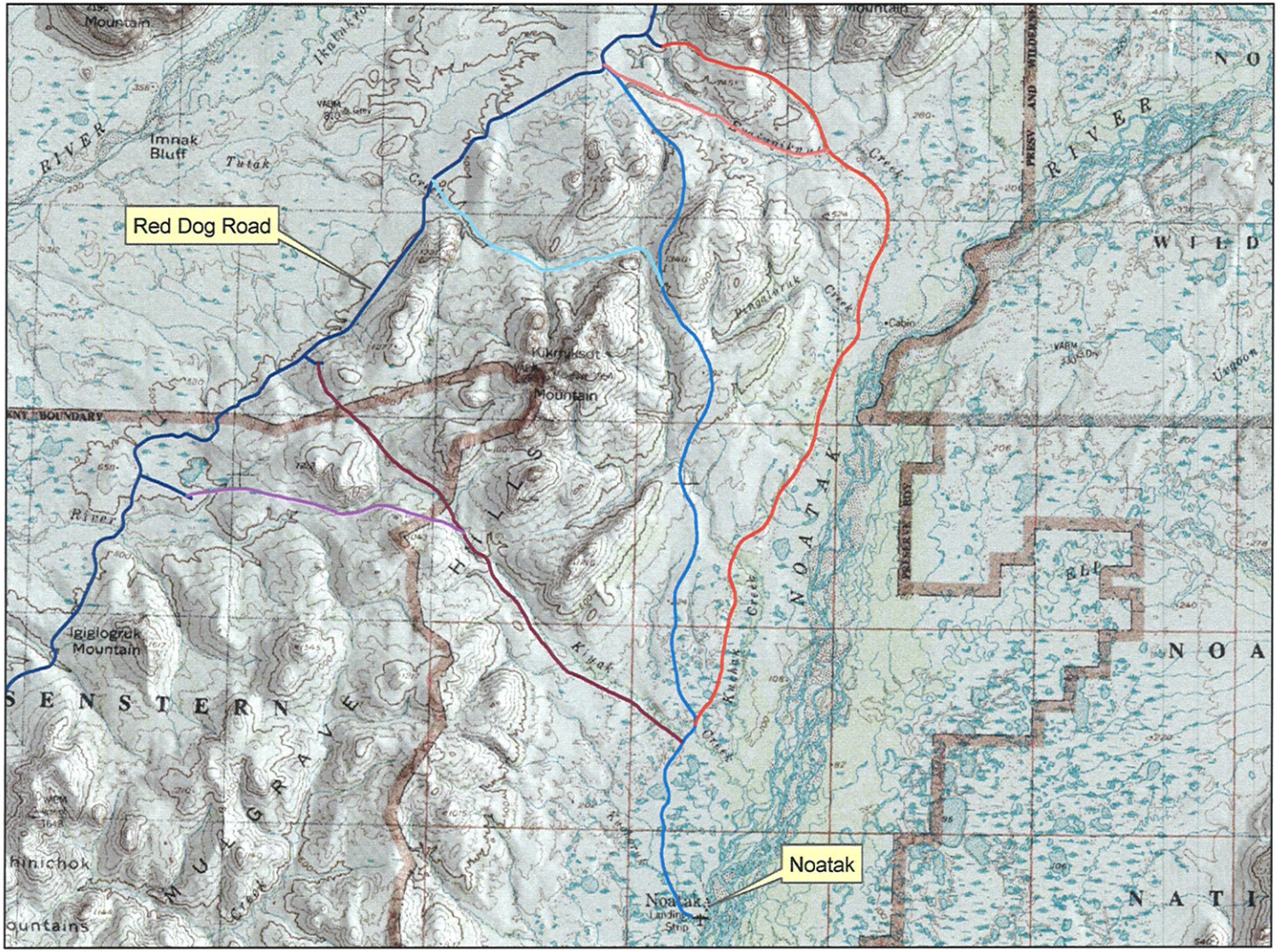
0 1.25 2.5 5 7.5 10 Miles

Road Options

Alaska Department of Transportation and Public Facilities

Noatak Road and Airport

Preliminary Road Corridor Overview



Road Options

- R1
- R1a
- R2
- R2a
- R3
- R3a

N
W E
S

0 1.25 2.5 5 7.5 10 Miles

Preliminary Road Options Comparison Matrix

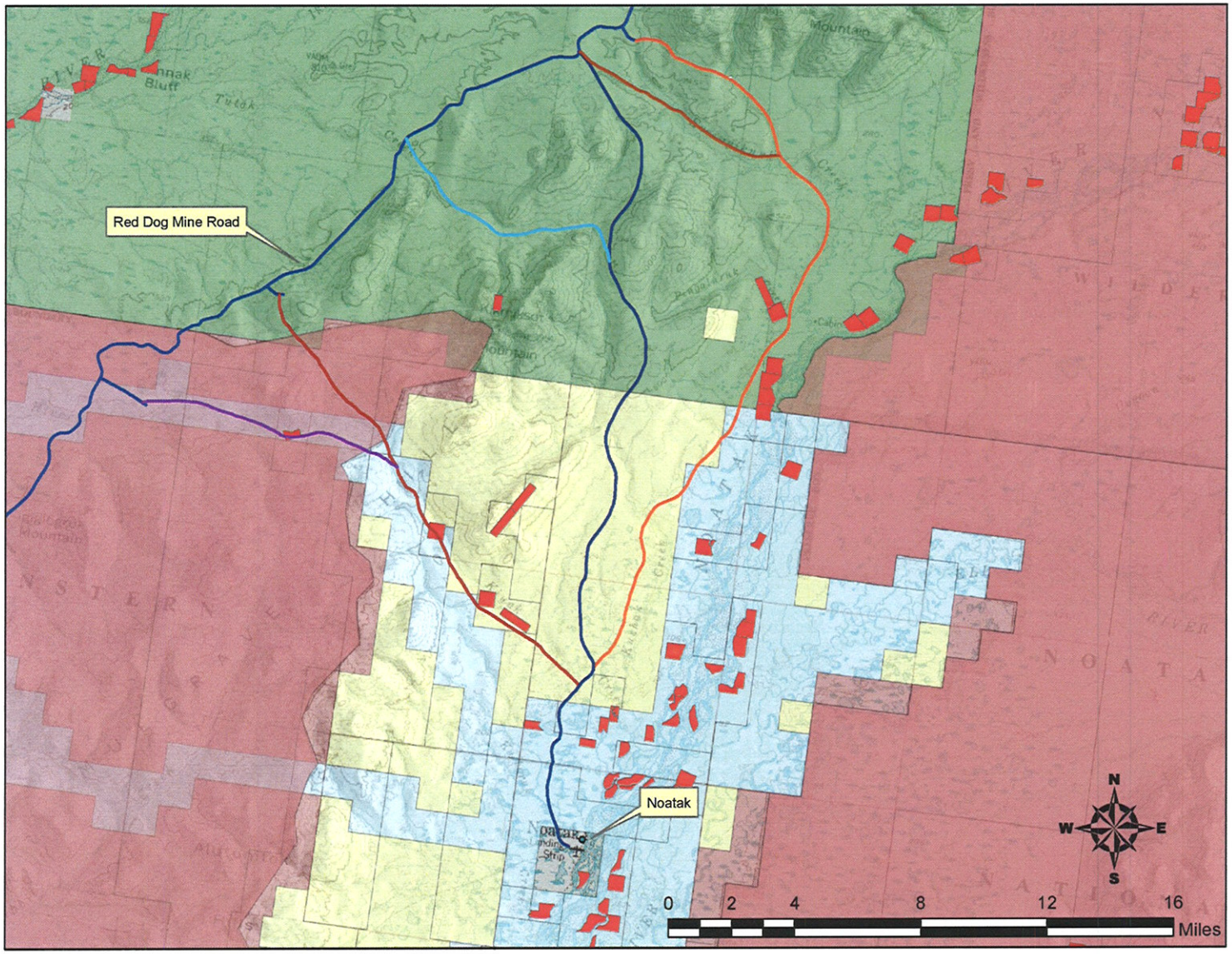
		R1	R1a	R2	R2a	R3	R3a
Road Length	Miles	21.6	23.3	31.8	33.1	27.8	28.8
Starting Elevation[1]	Feet (MSL)	70	70	70	70	70	70
Ending Elevation[1]	Feet (MSL)	760	570	500	610	610	1000
Highest Pass Elevation[1]	Feet (MSL)	860	790	590	610	1050	1040
Maximum Grade[1]		8.0%	8.0%	6.0%	8.0%	8.0%	8.0%
Length of Road Above 400' Elevation (MSL)[1]	Miles	9.8	9.8	5	6.3	12.75	13.75
Turnouts		22	23	32	33	28	29
Major Water Crossings[2]		2	2	7	6	5	3
Minor Water Crossings[2]		15	20	21	24	6	14
Icing Hazards Along Route[3]		Mile 6 to Mile 11	Mile 6 to Mile 11	Mile 24 to Mile 30	Mile 24 to Mile 28	Mile 14 to 15	Mile 14 to 15
Preliminary Estimated Construction Cost[4]	Dollars per Mile	$1,600,000	$1,600,000	$1,750,000	$1,730,000	$1,770,000	$1,680,000

1) All elevation and grade data is preliminary - based on USGS maps.
2) Major and minor water crossings are based on USGS maps and guidance. Major water crossings assume bridges are needed, minor water crossings assume pipes are needed.
3) Icing data was collected from past field surveys done by the Alaska Division of Geological and Geophysical Surveys.
4) Road Template is 24' wide, 8' deep at centerline, and has 2:1 slopes, with 12" crushed surfacing. Environmental, Design, ROW, Construction Engineering, and administrative costs are not included.

Alaska Department of Transportation and Public Facilities

Noatak Road and Airport

Preliminary Land Status



Legend

Land Status

- Cape Krusenstern National Monument
- Noatak National Preserve
- Native Selected (BLM)
- Native Interim Conveyed
- State Tentatively Approved
- Native Allottment

Road Options

- R1
- R1a
- R2
- R2a
- R3
- R3a

Sources of Data:
Alaska Department of Natural Resources,
Land Records Information Section
"General Land Status Clipped to 1 to 63,360 Coastline"

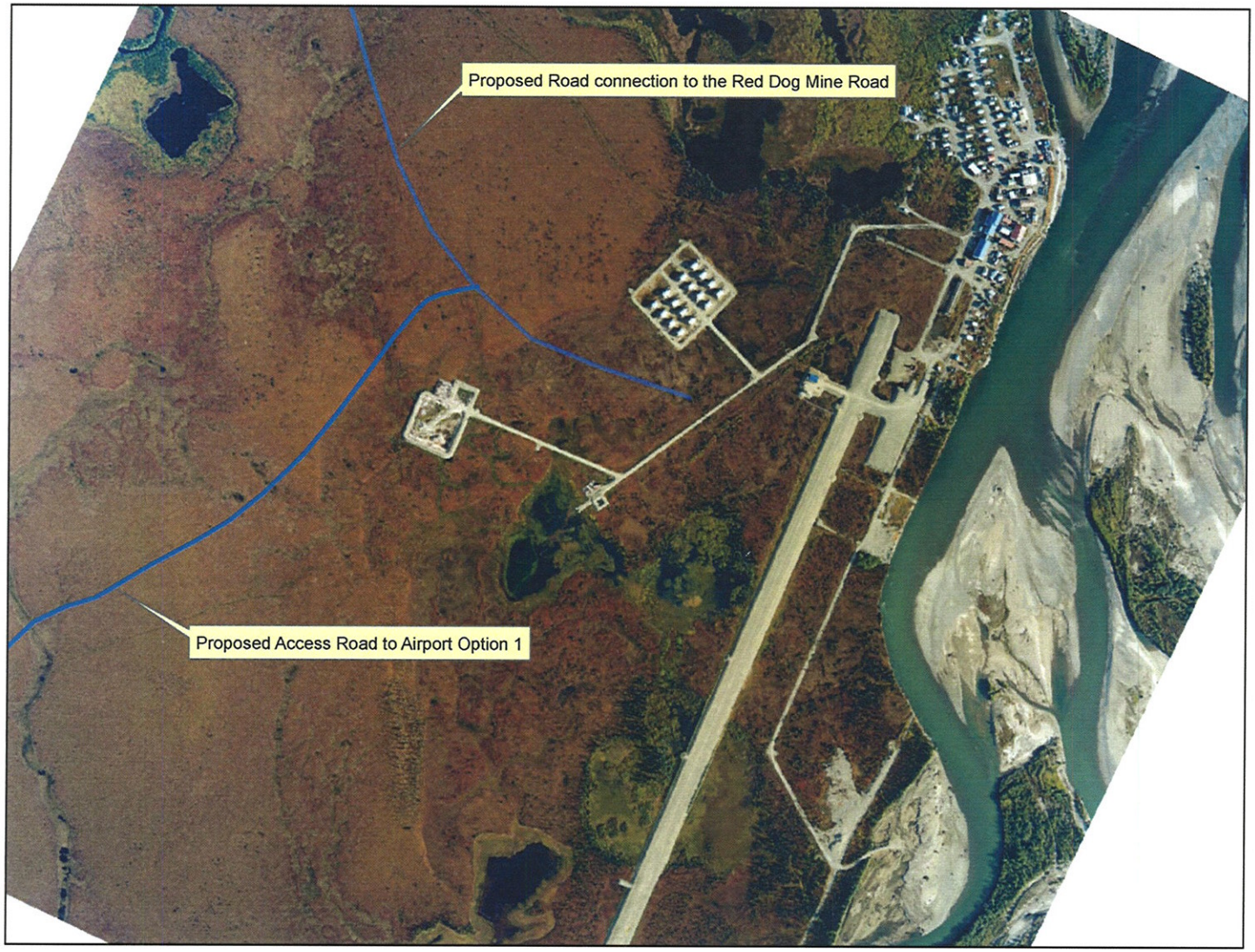
Preliminary Land Status Comparison Matrix - Road Options

	R 1		R 1a		R2		R2a		R3		R3a	
	miles	%	miles	%	miles	%	miles	%	miles	%	miles	%
Native Interim Conveyed	9	42%	9	39%	7.2	23%	7.2	22%	4.8	17%	4.8	17%
Native Selected	6.1	28%	6.2	27%	9.1	29%	9.1	27%	10.7	38%	10.7	37%
State Tentatively Approved	1.4	6%	0	0%	15.5	49%	16.8	51%	12.3	44%	13.3	46%
Cape Krusenstern National Monument Lands	4.5	21%	7	30%	0	0%	0	0%	0	0%	0	0%
Native Allottments	0.6	3%	1.1	5%	0	0%	0	0%	0	0%	0	0%
Total Miles	21.6		23.3		31.8		33.1		27.8		28.8	

Alaska Department of Transportation and Public Facilities

Noatak Road and Airport

Proposed Connection



Where is the best place to tie into the community?

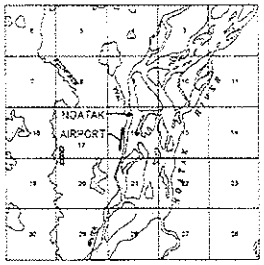
Source of Data: 2000 AeroMap Photography

N
W E
S

0 0.05 0.1 0.2 0.3 0.4 Miles

Airport Options

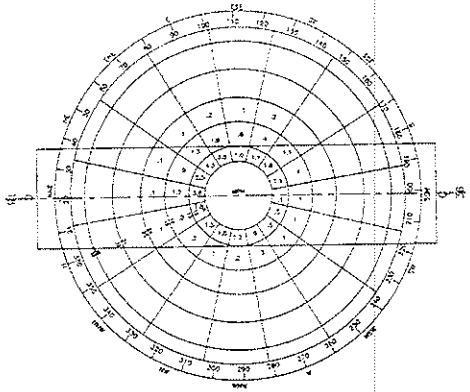
LOCATION MAP
NO SCALE

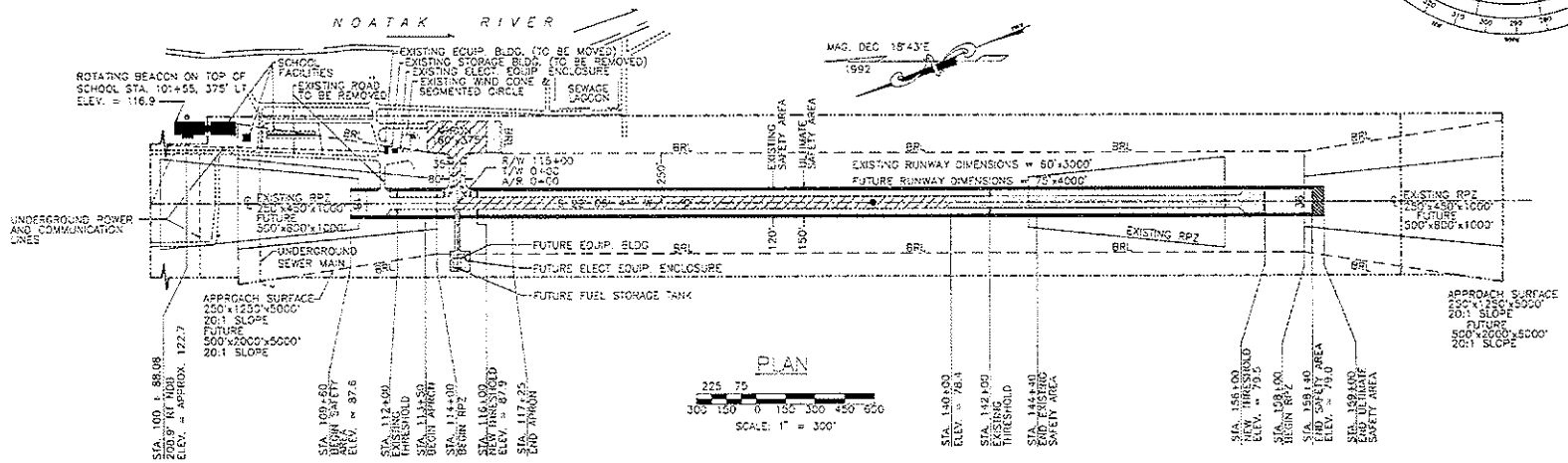


VICINITY MAP
NO SCALE
USGS NOATAK (C-2)
T 25 N, R 6 E, 19W
KATEEL RIVER MERIDIAN, ALASKA

WIND ROSE
10.5 KNOTS

WIND DATA
95.5% WIND COVERAGE
RUNWAY 18/36
WIND DATA PERIOD:
August 1985 - September 1986
University of Alaska
Arctic Environmental
Information & Data Center





PLAN
225 75
300 150 0 150 300 450 600
SCALE: 1" = 300'

RUNWAY DATA

	RUNWAY 18 / 36		RUNWAY	
	EXISTING	FUTURE	EXISTING	FUTURE
EFFECTIVE GRADIENT	0.32%	0.32%		
% WIND COVERAGE	95.5%	95.5%		
PAVEMENT SURFACE	GRAVEL	GRAVEL		
PAVEMENT STRENGTH	N/A	N/A		
APPROACH SURFACES	20:1	20:1		
RUNWAY LIGHTING	MIRL	MIRL		
RUNWAY MARKING	NONE	NONE		
NAVIGATION AIDS	NDB	NDB		
RUNWAY SAFETY AREA	120'x480'	150'x840'		
RUNWAY DIMENSION	60'x3000'	75'x4000'		
TAXIWAY	35'x220'	35'x220'		

AIRPORT DATA

	EXISTING	FUTURE
AIRPORT ELEVATION (M.S.L.)	65	86
AIRPORT LOCATION POINT (A.L.P.)		
MEAN TEMP. HOTTEST MONTH (DAILY MAX.)	59°	59°
TAXIWAY LIGHTING	MIRL	MIRL
RAMP LIGHTING	NONE	NONE
* AIRPORT REFERENCE POINT (A.R.P.)	LAT. 67 33.9'N / LONG. 162 58.6'W	LAT. 67 33.9'N / LONG. 162 58.7'W
AIRPORT AND TERMINAL BEACONS	NDB	NDB
AIRPORT REFERENCE CODE	B-II	B-II
* RUNWAY 18 THRESHOLD	LAT. 67 33.1'N / LONG. 162 58.4'W	LAT. 67 33.1'N / LONG. 162 58.4'W
* RUNWAY 36 THRESHOLD	LAT. 67 33.5'N / LONG. 162 50.0'W	LAT. 67 33.5'N / LONG. 162 50.0'W

* NOTE: HORIZONTAL CONTROL BASED ON NAD 1927

LEGEND

	EXISTING	FUTURE
OBJ R.O.W.		
BUILDING RESTRICTION LINE (B.R.L.)	BRL	BRL
AIRPORT REFERENCE POINT		
ROTATING BEACON		
BUILDINGS		
ROADWAYS		
RIVER BANK		
THRESHOLD LIGHTING		
WIND CONE (LIGHTED)		
RUNWAY/TAXIWAYS/APRON		
SAFETY AREA/ULTIMATE DEVELOPMENT		
OFA BEYOND THRESHOLD		

DEVIATION FROM DESIGN STANDARDS

ITEM	STANDARD	EXISTING	FUTURE

BUILDING TABLE

BUILDING NAME	ELEVATION
EXISTING EQUIPMENT BUILDING (TO BE MOVED)	100.7
EXISTING STORAGE BUILDING (TO BE REMOVED)	95.9
EXISTING ELECTRICAL EQUIPMENT ENCLOSURE	99.7
EXISTING WIND CONE	102.9
EXISTING SCHOOL FACILITIES	112.5
EXISTING SCHOOL FACILITIES	101.2
EXISTING FUEL STORAGE TANKS (SCHOOL FACILITIES)	97.3
FUTURE EQUIPMENT BUILDING	
FUTURE ELECTRICAL EQUIPMENT ENCLOSURE	
FUTURE FUEL STORAGE TANKS	

ELEVATIONS ARE GIVEN IN FEET.

DESIGN G.B.
DRAWN C.A.B.
CHECKED D.H.

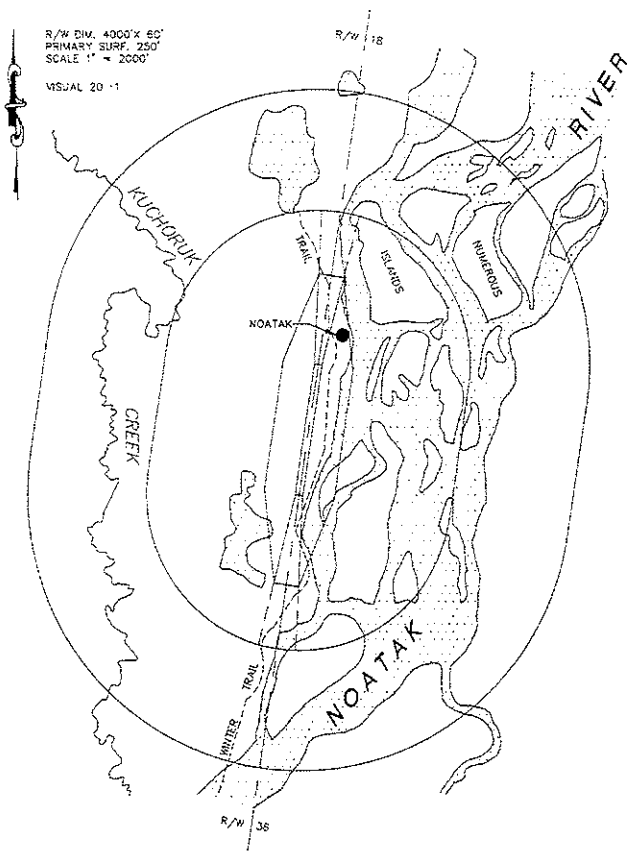
BY	DATE	REVISIONS
	8/1/95	FAA APPROVED

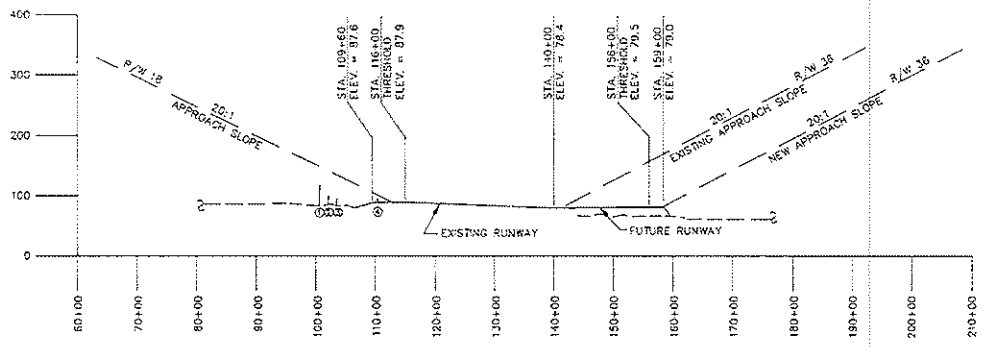
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION-WESTERN DISTRICT-DESIGN & CONSTRUCTION-AVIATION
APPROVED Daniel D. Urbach DATE 3-3-94
DANIEL D. URBACH, P.E. AIRPORT DESIGN GROUP CHIEF

THIS DRAWING SUPERCEDES ALP DATED 7/24/86

NOATAK AIRPORT
AIRPORT LAYOUT PLAN

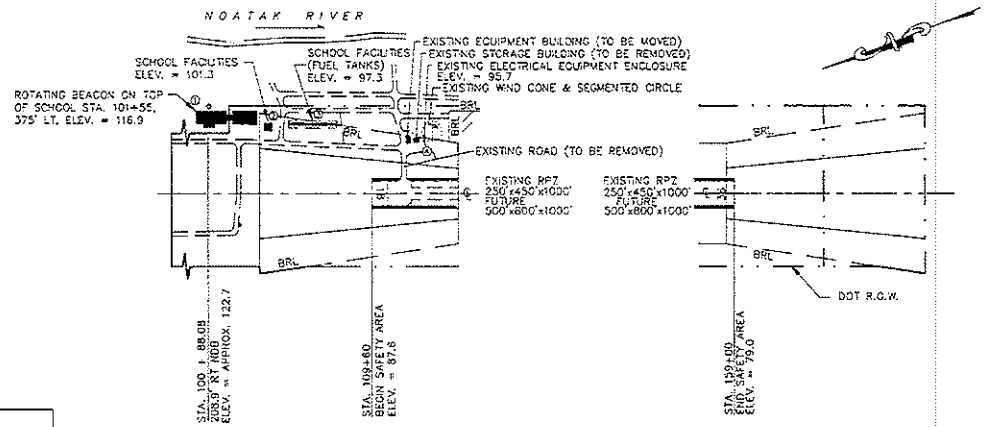
SHEET 1 OF 3





RUNWAYS 18 & 36 APPROACH SLOPES

SCALE: HORZ. 1"= 1000'
VERT. 1"= 100'



PLAN VIEW OF RPZ'S

SCALE: 1"=300'

FAR PART 77 PENETRATIONS

NO.	STRUCTURE	R/W LOCATION	ELEV.	PENETRATIONS

DEVIATIONS FROM STANDARD

ITEM	STANDARD	EXISTING	ULTIMATE

* NOTE: HORIZONTAL CONTROL BASED ON NAD 1927.

DESIGN G.R.
DRAWN D.A.B.
CHECKED D.H.

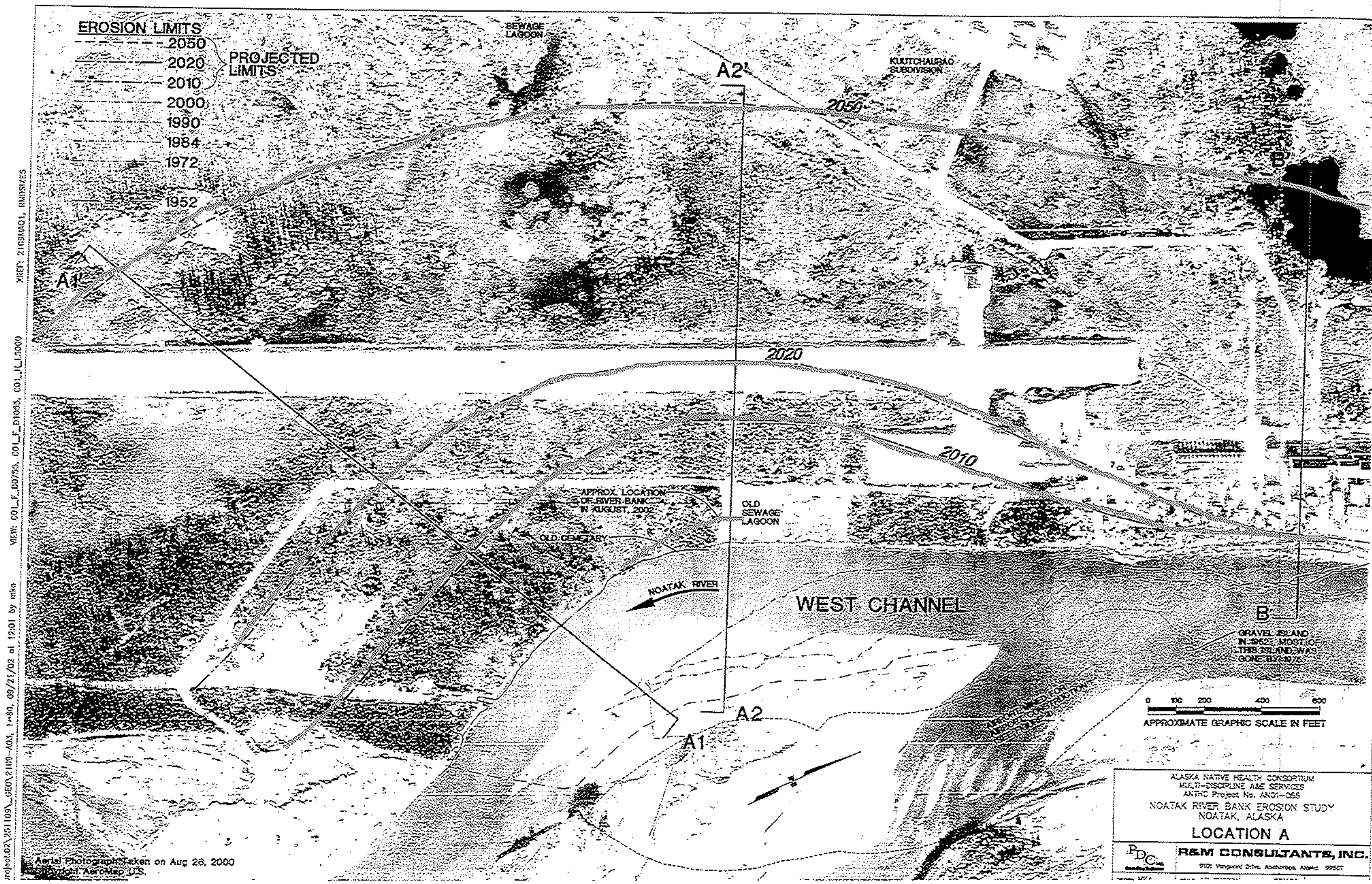
BY	DATE	REVISIONS
	5/31/95	FAA APPROVED

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION-WESTERN DISTRICT-DESIGN & CONSTRUCTION-AVIATION
APPROVED Daniel D. Urbach DATE 5-3-95
DANIEL D. URBACH, P.E. AIRPORT DESIGN GROUP CHIEF

NOATAK AIRPORT

OBSTRUCTIONS & AIRPORT AIRSPACE

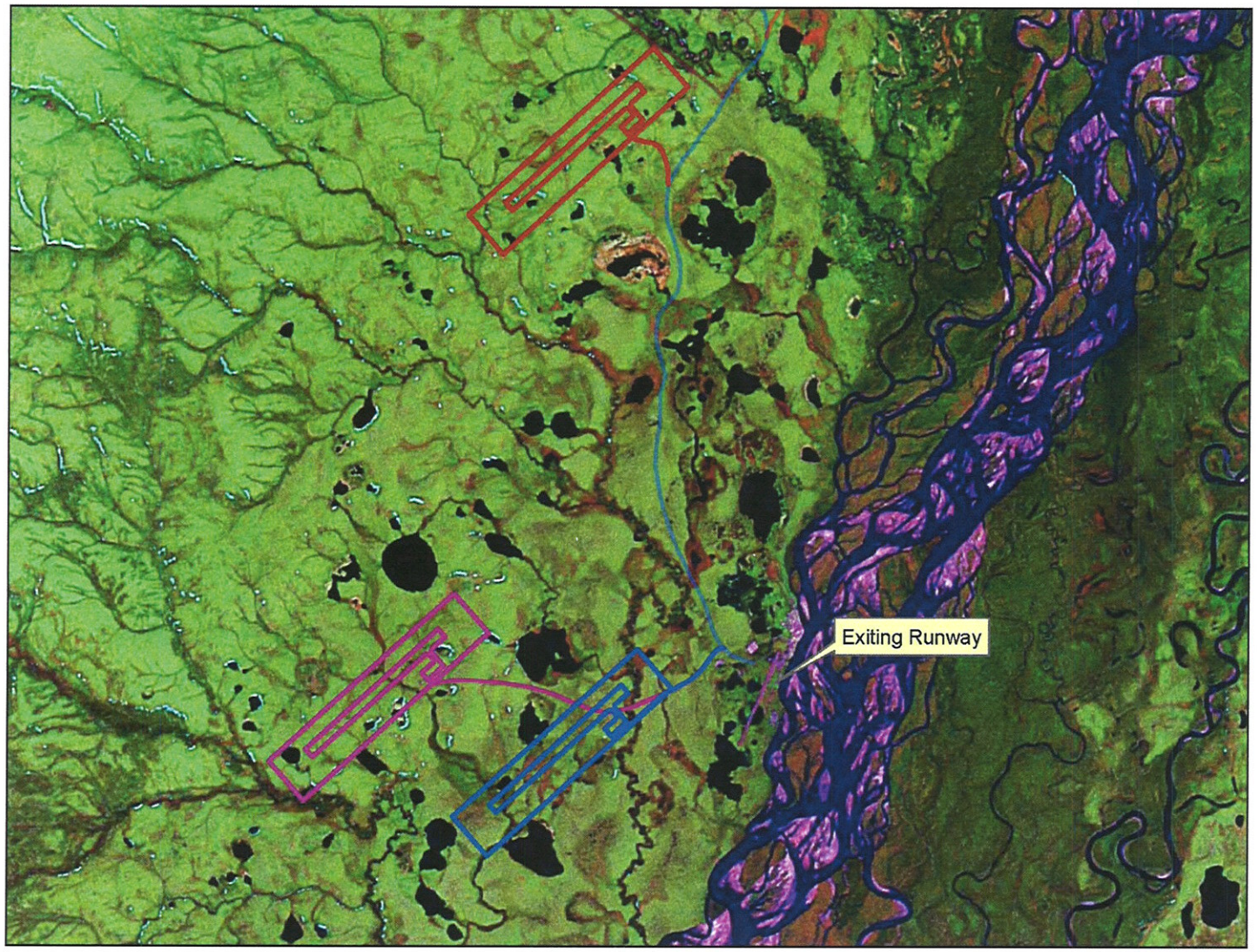
SHEET 2 OF 3


EROSION LIMITS
2050
2020
2010
2000
1990
1984
1972
1952
PROJECTED LIMITS
SEWAGE LAGOON
A2'
A1'
B'
2020
2010
APPROX. LOCATION OF RIVER BANK IN AUGUST, 2002
OLD SEWAGE LAGOON
OLD CEMETARY
NOATAK RIVER
WEST CHANNEL
B
A2
A1
0 100 200 400 600
APPROXIMATE GRAPHIC SCALE IN FEET
ALASKA NATIVE HEALTH CONSORTIUM
MULTI-DISCIPLINE A&E SERVICES
NOATAK RIVER BANK EROSION STUDY
NOATAK, ALASKA
LOCATION A
R&M CONSULTANTS, INC.
Aerial Photograph Taken on Aug 26, 2000

Alaska Department of Transportation and Public Facilities

Noatak Road and Airport

Preliminary Airport Options



Airport Options

A1

A2

A3

Source of Data: 2000 Landsat Imagery (NASA)

All Runway Alignments are preliminary - based on 1986 wind data. Recent wind data has been collected and archived by the National Climate Data Center since 1998. DOT&PF is currently acquiring this data. The recent data will be used in determining the best alignment for the proposed runway.

N W E S

Miles

0 0.3 0.6 1.2 1.8 2.4

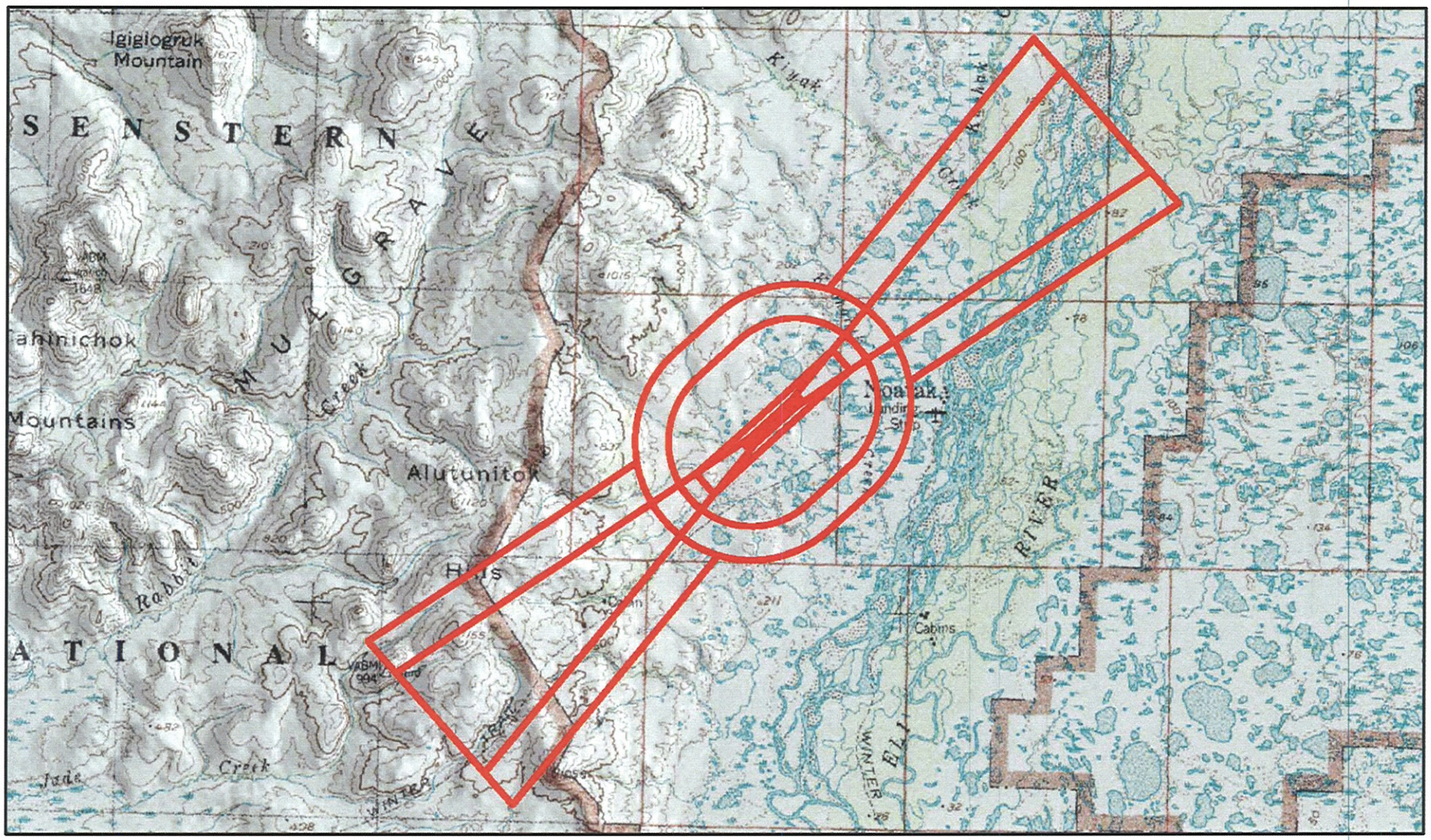
Airport Comparison Matrix

	Existing Runway	Red Dog Mine Runway	Option 1	Option 2	Option 3
Airport Class	B-I		C-IV (Ultimate)	C-IV (Ultimate)	C-IV (Ultimate)
Ultimate Runway Dimensions	4000' x 60' (Gravel)	5,753 x 120' (Gravel)	Paved 6500' x 150'	Paved 6500' x 150'	Paved 6500' x 150'
Ultimate Safety Area Dimensions	4880' x 120'		8500' x 500'	8500' x 500'	8500' x 500'
Approximate Airport Elevation	88' (MSL)	974' (MSL)	175' (MSL)	175' (MSL)	95' (MSL)
Obstructions to Airspace	No	Yes	No	No	No
Lowest Visibility Approach[1]	Visual Runway		Precision < 3/4 mile	Precision < 3/4 mile	Precision < 3/4 mile
Access Road Length from Noatak to Apron	1/4 Mile	N/A	3.5 Miles	5.4 Miles	1.7 Miles
Distance from C/L of Approach to Noatak at closest point	North Approach over Village	N/A	2.1 Miles	4.7 Miles	0.5 Miles
Minimum Embankment Height	10'		14'	14'	14'
Land Status	State Owned and Operated	Owned by NANA - Operated by TeckCominco	Interim Conveyed/Native Selected	Interim Conveyed/Native Selected	Interim Conveyed/Native Selected
Wind Coverage[2]	Meets FAA Criteria		Meets FAA Criteria	Meets FAA Criteria	Meets FAA Criteria
Floodplain Impact	In the Floodplain	None	Needs Further Study	Needs Further Study	Needs Further Study
Footprint			170 Acres	150 Acres	140 Acres
Property	126 Acres		Approx. 700 Acres	Approx. 700 Acres	Approx. 700 Acres

1) Precision approaches assume FAA Navaid installation, and airspace protection requirements acceptable to FAA.
2) Wind Coverage has been determined using 1986 wind data. A wind study will be performed using current data, and alignments may change.

All data is preliminary - based on quad map level studies.

Preliminary Airspace
Option 1

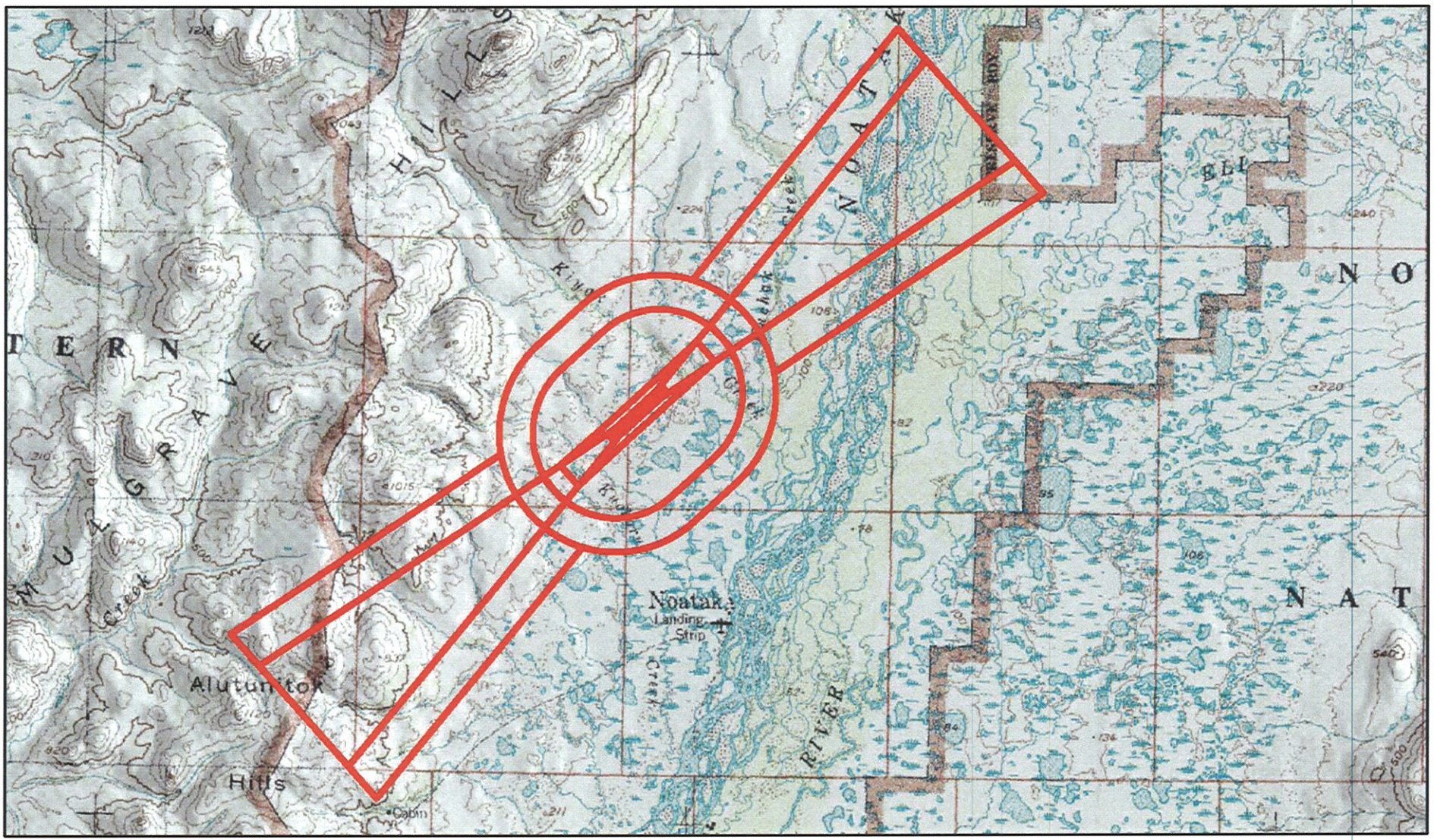


Note:
This drawing details the FAR Part 77 Airspace surfaces required for the proposed option. These surfaces are based on Quad-Map level data, and should be considered preliminary.

0 1 2 4 6 8 Miles

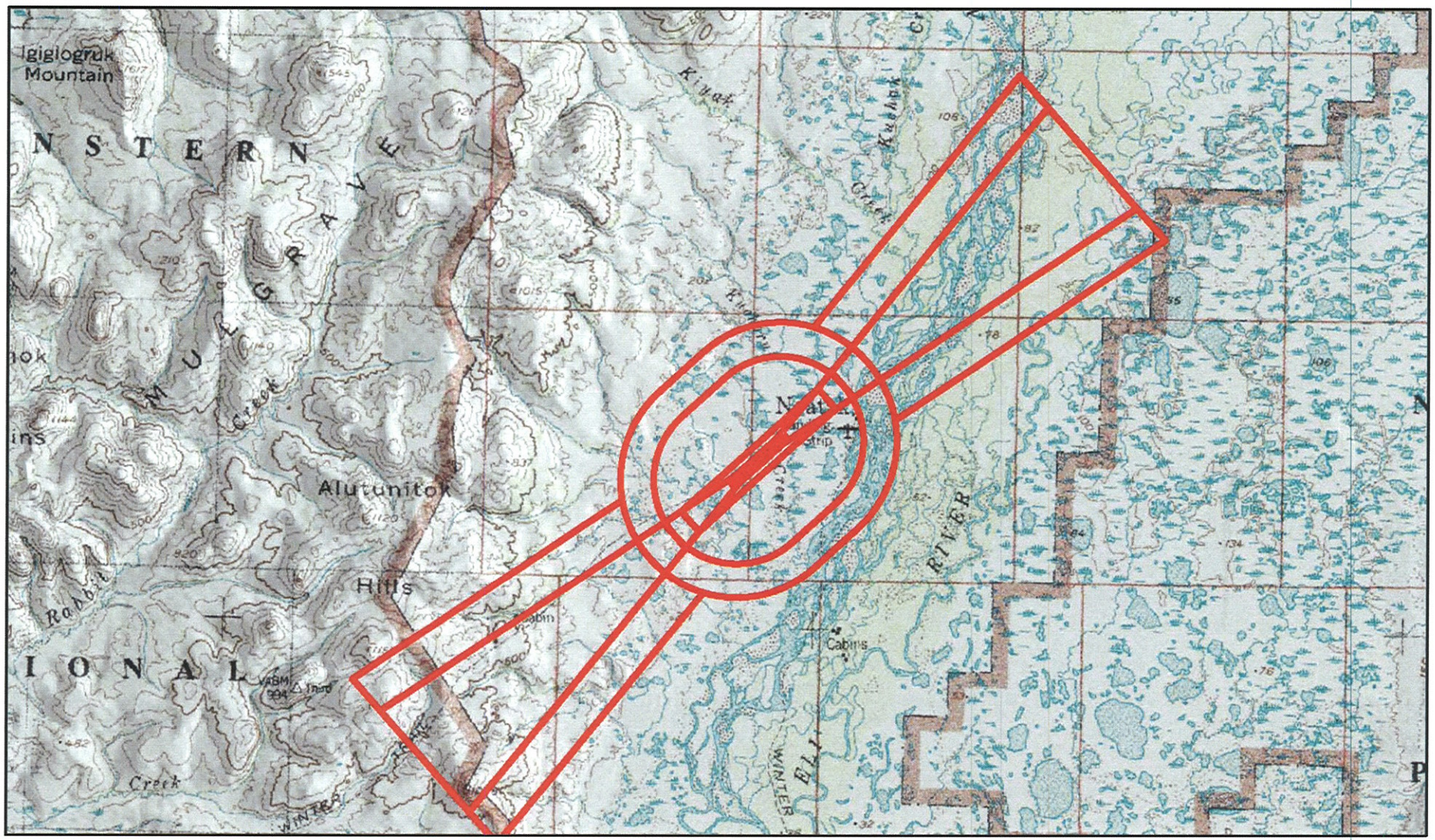
N
W E
S

Preliminary Airspace
Option 2



Note:
This drawing details the FAR Part 77 Airspace surfaces required for the proposed option. These surfaces are based on Quad-Map level data, and should be considered preliminary.

Preliminary Airspace
Option 3



Note:
This drawing details the FAR Part 77 Airspace surfaces required for the proposed option. These surfaces are based on Quad-Map level data, and should be considered preliminary.

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Transportation and Public Facilities

NORTHERN REGION
Design, Engineering, & Construction

2301 Peger Road
Fairbanks, AK 99709-5316
Main: 907-451-2200
TTY: 711 or 1-800-770-8973
dot.alaska.gov

October 6, 2023

Peter Mamrol, Project Manager
Airports Division, Alaska Region
Federal Aviation Administration
222 W. 7th Avenue, Box 14
Anchorage, Alaska 99513-7587

RE: Noatak Airport Relocation – Airport Site Selection
AIP 3-02-0198 (TBD)/Z614780000

Dear. Mr. Mamrol:

The Department of Transportation and Public Facilities (DOT&PF) is seeking Federal Aviation Administration (FAA) concurrence on the site selection process for the Noatak Airport Relocation project. Proposed airport sites are shown in the attached Figure 1 Noatak Airport Site Selection Alternatives. DOT&PF has studied and refined these sites to identify the most appropriate location for the new airport.

Numerous studies have been conducted regarding siting criteria for the proposed Noatak Airport Relocation. This includes:

- Noatak Airport Improvements Environmental Assessment (DOT&PF; May 1992)
- Noatak Riverbank Erosion Study (ANTHC; February 2003)
- Noatak Road and Airport Preliminary Engineering and Economic Study (DOT&PF; November 2004)
- Alaska Baseline Erosion Assessment; Noatak, Alaska (USACE; September 2007)
- Wetlands Determination and Habitat Assessment for proposed material site, Noatak, Alaska (DOT&PF; April 2007)
- Noatak Airport Relocation Archaeological Survey (Mobley, Charles; 2007)
- Preliminary Kuchoruk Creek Hydraulic and Hydrology Report (HDL; February 2008)
- Noatak Airport Relocation Geotechnical Report (DOT&PF; February 2008)
- Noatak Riverbank Erosion Assessment (USKH; February 2013)

At the request of the FAA Alaska Airports District Office (ADO), DOT&PF prepared a hydraulic engineering review memorandum in December 2022 on the practicability of countermeasure options against the ongoing erosional threat to the community. The ADO concurred with this review and the relocation efforts underway at Noatak.

Currently, the FAA is requesting a review of the criteria that was considered during site selection analysis, considering the guidance of FAA AC 5070-6 Appendix E (Airport Site Selection). This memorandum was prepared to present a compiled summary of prior studies and elucidate the location which DOT&PF has determined the most appropriate for the relocated airport.

Preliminary Site Identification:

To site the new Noatak Airport, DOT&PF reviewed available wind data to determine the expected runway alignment and reviewed existing topographical mapping and imagery to site alternatives for a runway. To be a feasible alternative, each site needed to facilitate an airport designed to FAA standards. This was an iterative process over a period of several years as DOT&PF analyzed existing available data and collected new data.

In 2004, after conducting an initial wind analysis and screening locations based on available mapping, DOT&PF identified three site alternatives for the proposed airport relocation, Sites 1, 2, and 3, as meeting wind coverage and where a sufficient length runway embankment could be placed uninterrupted by water features or terrain. From 2005 to 2015, DOT&PF gathered additional data and conducted field studies needed to complete site selection and environmental analysis. During this period, the proposed runway alignment was revised based on wind data and two additional site alternatives were identified for analysis, Sites 4 and 5.

Major Factors for site selection:

Wind Analysis. Analysis for the new airport alignment is based on wind data from the Automated Weather Observing System (AWOS) at the existing Noatak Airport. The 2004 site selection effort was based on 1986 wind data. Interim analyses in 2005 and 2015 based on additional wind data refined the runway alignment. An analysis in 2017 reviewed wind data from 2007 through 2016 and provided the current proposed alignment of S 9.03° W, true mean bearing, which has a 96.50% wind coverage.

Geotechnical and Drainage Considerations. DOT&PF conducted geotechnical subsurface investigations to evaluate the subsurface within Site 3, to evaluate subsurface conditions along the proposed access road, and to look for potential material sources. The results were that entire Site 3 and surrounding areas have underlying highly thaw unstable permafrost, with the main geotechnical objectives from the 2008 Noatak Airport Relocation Geotechnical Report being “to limit thaw settlement to the extent practical and minimize thaw settlement beneath structural section of embankments.” Specific recommendations to achieve this are to avoid siting facilities in natural drainages or ponds and to avoid cutting into the subgrade.

While not all sites were investigated to the same degree, based on geomorphology, all are expected to have subgrade with thaw unstable permafrost, so these recommendations apply to all site alternatives. These geotechnical recommendations meant site analysis focused on avoiding drainages.

Proximity to Noatak. An airport closer to the community will minimize additional travel requirements for passengers, cargo, and fuel from the airport. While gravel fill would vary at each site, a shorter airport access road would likely result in lower construction costs and

environmental impacts from disturbed ground. A shorter airport access road would require less maintenance over the life of the airport.

Compatible Land use. Any site to the east of Kuchoruk Creek would be within 5000 feet of the community land fill, which does not meet separation distances from wildlife attractants per AC 150/5200-33C. All sites are located in wetlands with sporadic ponds, which also create potential bird hazards. All sites west of Kuchoruk Creek are similar with respect to surrounding wetlands so this factor was not evaluated in detail, as it was not likely to be a deciding factor.

Land Ownership was not a deciding factor between sites. The land for all sites evaluated is interim conveyed and Selected by NANA Regional Corporation. There are no Native allotments which affect airport site selection. The land status was reviewed in 2023 and confirmed no land transfers have occurred that would impact the site selection.

Approach and Part 77 Obstructions was not a deciding factor between sites. The orientation of the runway due to the predominant wind directions is parallel to the Noatak River valley. No sites are far enough west that the Mulgrave Hills create an obstruction. The final selected site will be submitted for FAA airspace analysis to ensure feasibility.

Development Costs were considered as part of site selection. The differentiating factor related to cost is primarily dependent upon if the project requires a bridge on the access road, the quantity of borrow required, and the haul distance from material sources. Bridge costs were not a deciding factor because the site alternative not requiring a bridge are not feasible. Investigation of possible material sites revealed that the only suitable material sources are adjacent or within the Noatak River. Site selection focused on finding sites that have generally flat and consistent grades, minimizing fill imported to level grades, and considering sites closer to the Noatak River to reduce haul distance.

Environmental Consequences. Comparative impacts to environmental resources were considered in site selection. All sites will affect wetlands and biological resources, primarily based on the distrusted ground within the embankment footprint. Any site requiring a stream crossing could have impacts to fish; however, all feasible sites require stream crossing so this was not a deciding factor. Site selection focused on length of access road as a distinguishing factor. The selected site will be subject to review of alternatives as required under NEPA.

Site Alternative Discussion:

Site 1 is located 4 miles west of Noatak. This site was initially proposed when early wind data supported a more east-bearing runway alignment. The revised runway alignment after later wind analysis indicated this site is less practical due to concerns with drainage and topography that will require substantially more fill material and have a larger embankment footprint than the original alignment.

Site 2 is located 5 miles northwest of Noatak. This site was included as an alternative in 2004 as it is along a possible road alignment to Red Dog Mine. However, that road is no longer a consideration related to siting the Noatak Airport and early analysis revealed no meaningful benefits of this site over Site 1 and 3. This site would likely cause a higher construction cost, travel distance, and direct environmental impacts associated with the longer access road.

Site 3 is located 2 miles west of Noatak. **DOT&PF selected this site.** An airport can be constructed meeting the 95% wind coverage without significant concerns from surrounding drainages. It is situated along a relatively consistent ridge line which will minimize deeper fill to reach runway grade. This site would require an estimated 2-mile access road, including a bridge across Kuchoruk Creek. This location provides adequate separation from the community landfill per AC 150/5200-33C.

Site 4 is located on the east side of Kuchoruk Creek. This site is favorable due to the shorter access road and no bridge required over Kuchoruk Creek, which reduces cost and direct environmental impacts. However, the geotechnical investigation indicates higher degrees of ice rich permafrost than the surrounding areas. The close proximity to Kuchoruk Creek is likely to cause an increased risk of thaw-instability in the embankment. The site is further constrained to the east, which would require the apron and taxiway be built on fill over existing drainage. This site is within 5000 feet of the community land fill, which does not meet separation distances from wildlife attractants per AC 150/5200-33C.

Site 5 is located approximately 1 mile west of Site 3 along a ridgeline. This site overlaps with one the 2006 geotechnical investigation as a potential material source, however the investigation showed thaw unstable permafrost. The topography of this site has more variation, which would require substantially more fill material, or cutting into existing ground (which increases the risk of causing thaw-unstable conditions in the embankment). This site is also farther from the community requiring in a longer access road, resulting in greater direct environmental impacts and greater logistical burden on the community to transport passengers, fuel, and cargo to and from the airport.

Site Alternative Comparison:

DOT&PF's comparison of the site alternatives is summarized in Table 1: Site Alternative Comparison. For each site alternative, the selection factors with major concerns compared to the other alternatives, as described above, are annotated.

Site	Wind	Drainage/ Geotech	Proximity	Compatible Land Use	Land Ownership	Airspace	Cost	Environmental Impacts	Conclusion
1	CONCERN	CONCERN	CONCERN				CONCERN	CONCERN	Feasible
2	CONCERN		CONCERN				CONCERN	CONCERN	Feasible
3									Preferred
4		CONCERN		CONCERN					Not Feasible
5		CONCERN	CONCERN				CONCERN	CONCERN	Not Feasible

Table 1: Site Alternative Comparison

Sincerely,

Christopher F. Johnston, P.E.
Engineering Manager

CFJ/las

Copy to: H:\Projects\Communities\Noatak\61478_Noatak_Apt_Relocation\05 PS&E\00 Design Alternatives

cc: Albert Beck, P.E., Project Delivery Lead
Brett Nelson, Planning Chief, Fairbanks Field Office

N
W
E
S

2

5

1

3

4

Existing Runway

Earthstar Geographics

Site Alternative 1

Site Alternative 2

Site Alternative 3

Site Alternative 4

Site Alternative 5

0 0.5 1 2 3 4 Miles

STATE OF ALASKA

Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

Date: October 2023

Figure 1

Noatak Airport Site Selection Alternatives
Noatak Alaska

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APPENDIX D

ESSENTIAL FISH HABITAT ASSESSMENT

Page

Essential Fish Habitat Assessment

Noatak Airport Relocation
Noatak, Alaska

February 2019

State Project Number: Z614780000

Prepared by:

Stantec Consulting Services Inc
725 East Fireweed Lane, Suite 200
Anchorage, AK 99503-2245
Phone: (907) 276-4245
Fax: (907) 258-4653

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1.0 INTRODUCTION AND BACKGROUND

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), proposes to relocate the Noatak Airport (Figures 1-3). The existing airport is threatened by Noatak River erosion, which would necessitate permanent runway closure. Consequently, there is insufficient land to address other existing airport deficiencies. Time critical airport relocation ensures continued safe and reliable air transportation for Noatak.

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires that federal action agencies consult with the National Marine Fisheries Service (NMFS) when taking action that may impact the quality and/or quantity of Essential Fish Habitat (EFH).

The proposed project would mine gravel bars within the Noatak River to provide material for construction. The River Material Source (East) is the existing community source, and the River Material Source (South) is located approximately two miles downstream from the village (Figure 2). Material source development would involve excavation of gravels and sand (HDL 2006). Material source operations could occur at any time of year, and bridges or culverts would be required to cross braids of the Noatak River and access the active source. Adequate setbacks, as determined through permitting, would be maintained to avoid breeching the river channels.

The Noatak River is listed in the Anadromous Waters Catalog (AWC) by the Alaska Department of Fish and Game (ADF&G) as Stream No. 331-00-10290. It is listed as important for the presence of Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), chum salmon (*O. keta*), pink salmon (*O. gorbuscha*), and sockeye salmon (*O. nerka*). Non-EFH species listed as present include: Dolly Varden (*Salvelinus malma*), sheefish (*Stenodus nelma*), and whitefish, which are also listed for rearing (ADF&G 2018a).

A winter snow road (Route 3 on Figure 2) will be permitted for contractor use from the Delong Mountain Transportation System (DMTS) to bring equipment and materials to the project. This would include crossing Kiyak Creek (ADF&G Stream No. 331-00-10290-2141-3003), listed as important for chum salmon spawning (ADF&G 2018a).

Kuchoruk Creek (not listed or surveyed by ADF&G) would require a new bridge to access the proposed airport from Noatak. ADF&G has indicated chum salmon are likely present (ADF&G 2006).

As the Noatak River and Kiyak Creek are listed in the AWC for providing Pacific salmon habitat, it is considered EFH for salmon under the Federal Management Plan for Pacific Salmon in the Economic Exclusion Zone (EEZ) off the Coast of Alaska (NMFS 2005; ADF&G 2018a).

2.0 PROPOSED ACTION

The Proposed Action (Figures 1-3) would consist of:

Airport

- Construct runway, taxiway, apron, lighting, a Snow Removal Equipment Building (SREB), and FAA Navigational Aids.
  - The runway and taxiway would be built to FAA standards for a category B-II airport capable of handling passenger and cargo aircraft and accommodate ground maneuvering larger aircraft such as DC-6 and C-130 that serve the airport unscheduled.
  - The apron area would be constructed for temporary loading of passengers and/or cargo as well as itinerant parking and access to lease lots.
  - Construct a building and pad capable of housing snow removal equipment and lighting/navigational controls.
  - Construct pads and install new and relocated navigational aids, and other airport related equipment and shelters.
- Decommission existing airport, Distance Measuring Equipment (DME), and Non-Directional Beacon (NDB).

Access Road

- Construct an airport access road between Noatak and the relocated airport, with a bridge crossing Kuchoruk Creek.
- The access road would be approximately 2 miles long and 24-ft. wide, with side slopes that include other safety features (e.g. signage) where required, and culverts would be installed to maintain drainage patterns.
- A two-lane bridge would cross Kuchoruk Creek and be designed to accommodate high water and aufeis. Abutments would be placed on either side of the creek within the floodplain. Work may be required below ordinary high water (OHW) of the creek, however no in-water work is anticipated.

Material Sources

- Develop local material sources and access.
- Local gravels within the Noatak River drainage would be used for construction; excavation may occur below the water table.
- A pioneer material access road would accommodate safe summertime access and prevent damage to underlying soil hydrology.

Mobilization

- Transport material and equipment utilizing a combination of air, water, and overland access.
- Construct gravel pads for staging areas.

Utilities

- Extend above ground utility lines to the relocated airport.
- Mitigate loss of existing fuel transfer system by constructing pads to be available for fuel transfer and temporary storage due to decommissioning the existing airport.

Right of Way

- Acquire land for the relocated airport and access road through various temporary and permanent interests from federal, state, and private entities.
- Dispose of existing airport property in accordance with Federal and State regulations.

Connected Action

- A new community provided fuel transfer station and delivery system would be required.
- Contamination on existing airport lease lots would be required to be remediated by responsible leases.

Airport Layout Plan

- FAA conditional approval of the Noatak Airport Layout Plan.

Proposed Action elements potentially affecting the EFH include: development of material source(s) within the Noatak River, hauling of materials off the river bar within areas below ordinary high water, and crossing Kiyak Creek. The selected contractor determines the methods and means used to develop the material source(s). For purposes of this evaluation, the following assumptions are made:

- Temporary bridge(s), fill, or temporary culvert(s) may be required to cross Noatak River braids or divert water. Culverts would be sized and maintained for stream flows and fish passage.
- A temporary ice bridge(s) would be placed across Kiyak Creek.

- Adequate setbacks, as determined through permitting, would be maintained to avoid breeching the river channels.
- If required by the ADF&G Fish Habitat Permit, a fish escapement channel would be excavated to prevent the trapping of fish in the excavation area.

3.0 ESSENTIAL FISH HABITAT

The 1996 Sustainable Fisheries Act reauthorized the Magnuson-Stevens Act (MSA; 16 USC.1801, et seq.), introducing new requirements for the description and identification of EFH in fishery management plans. EFH is defined as waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (50 C.F.R. Part 600). Further, EFH is designated based on best available scientific information and the levels defined by the MSA (NMFS 2005):

- Level 1 information corresponds to distribution;
- Level 2 information corresponds to density or relative abundance;
- Level 3 information corresponds to growth, reproduction, or survival rates; and
- Level 4 information corresponds to production rates.

The Proposed Action falls within the Salmon Fisheries in the EEZ off the Coast of Alaska (Salmon Fisheries Management Plans [FMP]). The Salmon FMP designated all waters offshore Alaska as EFH for all five species of Pacific salmon. In addition, the FMP designates all waters identified in the ADF&G Catalog of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes (ADF&G 2018a) as important for Pacific salmon, as EFH. All EFH for Pacific salmon within the Proposed Action is based on Level 1 distribution information. Construction and operation of the material sources and ice road/winter haul route would occur within designated EFH for Pacific salmon.

Table 1 describes the waterbodies with EFH and the species and life-stage supported within the segments contained within the Proposed Action. General site photographs of the Noatak River are provided below (Table 2).

Table 1 Essential Fish Habitat Water Bodies in the Proposed Action

Anadromous Catalog No.	Salmon				
	Chinook	Chum	Coho	Pink	Sockeye
Kiyak Creek 331-00-10290-2141-3003	-	Spawning	-	-	-
Noatak River 331-00-10290	Present				

Table 2 Site Photographs of the Noatak River

2017 Overview of Noatak River at Proposed River Material Source (South) (Red Arrows)

2017 Standing on the Proposed River Material Source (South)

3.1 *Noatak River*

The Noatak River is one of the largest remote mountain ringed river basins in America. It drains over 400 miles; from headwaters in the Schwatka Mountains of the Brooks Range, to Kotzebue Sound in the Chukchi Sea. With the upper 330 miles designated as 'Wild,' the Noatak River is one of the longest designated wild rivers in America. The Wild designation does not extend below the Kelly River confluence (30 miles upstream of Noatak and Proposed Action area).

The Noatak River supports the presence of Chinook salmon, coho salmon, chum salmon, pink salmon, sockeye salmon, Dolly Varden, and sheefish; and presence and rearing of whitefish (ADF&G 2018a). It is a shallow gravel bedded river, with many active multi-braded channels and oxbows. The Noatak River has a moderate gradient over 400 miles (NPS 2018). In the Proposed Action area, the streambed consists of gravel, cobbles, and boulders, with very few fine sediments in the streambed. Riparian habitat is dominated by black spruce permafrost tundra; with deep cut banks on active corners, and deciduous trees and shrubs limited to historic gravel bars.

Pacific salmon (e.g. Chinook, coho, chum, pink, and sockeye) spawn in the late summer and fall, after which adults undergo apoptosis and die. Adults only return to freshwater and spawn once. Young would remain in freshwater for 1-5 years, and migrate to the saltwater to feed and mature into adults. Chum salmon are the primary commercial and subsistence fishery for the area (Eggers and Clark 2006). Near Noatak, chum salmon spawning prefers secondary channels, away from the mainstem Noatak River (Merritt and Raymond 1983). Shallow active channels provide abundant habitat for spawning, rearing juvenile fish, and no apparent barriers to fish migration. Subsistence fisheries in the Noatak took ~7,818 chum salmon in 2012, which composed over 90% of the subsistence salmon harvest (Menard 2016). In 2007, it is estimated that 24,724 lbs of chum salmon were harvested in Noatak, out of 26,686 lbs of all salmon species (ADF&G 2018b).

Dolly Varden migrate upstream into Noatak River tributaries to spawn (Scanlon 2004). Young remain in freshwater for 2-5 years, before joining adults, who spend summers in

saltwater feeding (Scanlon 2004). Dolly Varden overwinter in deep freshwater mainstem areas (Scanlon 2004). Limited radio tracking studies found that they congregate where tributary streams flow into the mainstem Noatak River (Scanlon 2004; Schwanke and Johnson 2016). These are likely locations with permanent oxygen, stable temperature regimes, and ice free subsurface conditions during the winter. Individuals generally return to natal streams to spawn, but may overwinter in other locations; some have been tracked up the Wulik River, an ocean journey of at least 80 miles (Scanlon 2004). In 2007, it was estimated that 32,000 lbs of 'trout' were harvested in Noatak, which likely consists of Dolly Varden (ADF&G 2018b).

Sheefish migrate upstream to spawn, preferring shallow water habitat for broadcast spawning (ADF&G 2008; 2018c; Alt 1972). They then migrate back to lower sections of large rivers, river deltas, and estuaries, where they feed and overwinter (ADF&G 2008, 2018c; Alt 1972). Young rear in eddies, lakes, and estuaries. Adults feed in river deltas and estuaries, and overwinter in brackish waters (ADF&G 2008, 2018c; Alt 1972). Sheefish spawning locations have not been mapped on the Noatak River. In 2007, it was estimated that 1,105 lbs of sheefish where harvested in Noatak (ADF&G 2018b).

Whitefish are a general term for a series of *Prosopium sp.* and *Coregonus sp.* which are important subsistence fish in Alaska (ADF&G 1994). They inhabit most freshwater river and lake habitats. There is limited information on their biology in the region. In 2007, it was estimated that 14,234 lbs of whitefish were harvested in Noatak (ADF&G 2018b).

3.2 *Kiyak Creek*

Little information is available for Kiyak Creek. It is listed as providing chum salmon spawning habitat. Chum salmon life characteristics would be the same as those described for the Noatak River (above).

4.0 ANALYSIS OF EFFECTS TO ESSENTIAL FISH HABITAT

4.1 *Material Source Development*

Construction of material sources within floodplains could have a variety of effects on EFH and EFH species (Limpinsel et al. 2017). Material extraction sources studied in Alaska's Arctic and Subarctic floodplains have shown a variety of adverse and some beneficial effects on fish and fish habitat (Joyce et al. 1980; Ott et al. 2014). Direct effects could include creating turbidity, change of habitat, and alteration of channel morphology (Limpinsel et al. 2017). Fish entrapment potential was also documented at some sources where extraction sources left depressions in floodplains that were later flooded at high water and then became isolated as water dropped. Project planning and mitigation measures can reduce the potential for construction related impacts, through avoidance of active channels, implementation of best management practices (BMPs) to reduce turbidity, and reclamation practices that avoid fish entrapment.

Development of Noatak River material sources could affect EFH and EFH species as described above. A variety of mitigation measures would be implemented to mitigate impacts to EFH and EFH species. Adequate setbacks would be maintained to avoid breeching the river channels and creating areas that may entrap fish. These may also limit the amount of sediment laden stormwater from exiting the source. If required by the ADF&G Fish Habitat permit, a connection channel would be constructed to provide an exit to fish should they enter the excavation area after reclamation is complete.

Access to material sources from the bank would require crossing braids of the Noatak River. This may be accomplished by constructing temporary culverts, bridges, and/or winter ice bridges. Culverts would be sized and maintained for stream flows and fish passage.

4.2 *Ice Bridges for Winter Snow Road*

The primary potential effects of a winter snow road between DMTS and the project area would include ice bridge construction and associated water withdrawal (Limpinsel et al. 2017). Up to five temporary ice bridges are anticipated. Water withdrawal activities can affect fish in multiple ways. Fish could be entrained or entrapped within the pumping system

itself or become impinged on the intake structure at the point of withdrawal (Limpinsel et al. 2017). Water quality could be degraded through accidental spills, changes in thermal regimes, and increases in turbidity. Excessive withdrawal, up to dewatering, of locations from any given source could also have negative impacts to EFH.

Winter water withdrawal also has specific impacts (Limpinsel et al. 2017). Excessive water removal can cause overwintering habitats to freeze to the bottom, or remove sufficient volumes to create anoxic environments, suffocating individuals. Changing thermally stable upwellings could affect spawning beds and fish eggs within the gravel as well as impede fish passage to and between important overwintering habitats.

Water availability for development of ice bridges during winter would be limited, and the most likely source would be nearby ponded features or the mainstem Noatak River. Screened intake and volume withdrawal criteria would be used to ensure potential affects to fish and EFH are mitigated. Volume limitations and use of ADF&G compliant screened intakes would reduce the potential for adverse effects.

Other potential effects of ice bridges on fish and fish habitat are primarily associated with two major factors— freeze-down of fish overwintering areas and impedance of breakup flows during spring. Ice bridge crossings of flowing waters may cause freeze down into the substrates that can stop subsurface flow, forcing it above the ice. This creates concerns for both overwintering habitat and the potential for creation of ice dams during spring break up that may block flows and restrict passage. Ice dams during spring break up would be prevented by identifying potential blockages from ice infrastructure and removing the potential blockage prior to break up.

State of Alaska Temporary Water Use Permits and ADF&G Fish Habitat permits would be obtained to minimize the impact from ice bridges to fishery resources.

4.3 *Fuel Spills*

There is potential for accidental release of fuel used in heavy equipment associated with material extraction. Fuel operations would be conducted under a Spill Prevention, Control,

Countermeasure (SPCC) plan to prevent impacts to surface water quality. These plans specify that refueling of heavy equipment takes place a minimum distance from flowing waters.

5.0 AVOIDANCE AND MINIMIZATION

The following measures are identified to avoid, minimize or mitigate potential effects to fishes and fish habitats.

General:

- Compliance with the Alaska Pollutant Discharge Elimination System (APDES), Construction General Permit (CGP), and implementation of the required Stormwater Pollution Prevention Plan (SWPPP) and BMPs during construction, would reduce the potential for sediment laden storm water runoff during construction. Stabilization of side slopes with vegetation or non-erodible material would also be implemented as part of CGP compliance to further reduce the potential for sedimentation of nearby streams.
- Construction of all crossing structures would adhere to appropriate BMPs for in-stream work to minimize potential effects to fishes and fish habitats from sediment mobilization and transport, and accidental contaminant spills.

Material Source Development:

- Impacts to Noatak River braids would be minimized through temporary bridge(s) or temporary culvert(s). Culverts would be sized and maintained for stream flows and fish passage.
- Adequate setbacks, as determined through permitting, would be maintained to avoid breeching the river channels.

Ice Bridges for Winter Snow Road:

- Ice dams during spring break up would be prevented by identifying potential blockages from ice infrastructure, and removing the potential blockage prior to break up.

Fueling:

- Fuel operations would be conducted under a SPCC plan to prevent impacts to surface water quality.

6.0 CONSERVATION RECOMMENDATIONS

The Proposed Action contains features designed to reduce the potential for effects on EFH species. Conservation measures include:

Material Source Development:

- If required by the ADF&G Fish Habitat Permit, a fish escapement channel would be excavated to prevent the trapping of fish in the excavation area.

Winter Snow Road:

- Water withdrawal volume limitations and use of ADF&G compliant screened intakes would reduce the potential for adverse effects.
- Screened intake and volume withdrawal criteria would be used to ensure potential affects to fish and EFH are mitigated.
- Ice dams during spring break up would be prevented by identifying potential blockages from ice infrastructure and removing the potential blockage prior to break up.

Fueling:

- SPCC plans would recommend fueling equipment take place a minimum distance from flowing waters.

7.0 CONCLUSIONS

Development of the Noatak Airport Relocation Project may have short- and long-term adverse effects on EFH. However, as described throughout this evaluation and summarized below for each component of the Proposed Action, and in conjunction with proposed

conservation recommendations and BMPs, the Proposed Action is Unlikely to Adversely Affect/Adverse Effects Minimal.

7.1 *Material Sources*

Development of the material sources could have long-term adverse effects on EFH and EFH species without implementation of mitigation measures.

7.2 *Determination*

May Adversely Affect/Adverse Effects Minor to Moderate: The material sources are located within EFH and could have adverse effects on EFH. The point bar at this location is dynamic, with seasonal flooding, and surrounded by the active channel of a meandering river. The source would be sized and placed adequately distant from the active channel to reduce the potential for river capture. Access to this source would be designed to minimize adverse impacts to side channels. Despite the potential adverse effects, population level effects to salmon would not be expected as this section of the Noatak River is not listed as supporting rearing or spawning habitat.

7.3 *Ice Bridges for Winter Snow Road*

Construction and operation of the winter snow road could have short-term construction related effects to EFH.

7.4 *Determination*

No Adverse Effects: The primary potential to adversely affect EFH would be from winter water withdrawal from the waterways to support ice road construction. Screened intakes and winter withdrawal volume limitations as required for State of Alaska permits authorizing the withdrawal would minimize the potential for adverse effects to EFH and EFH species. No population level effects would be anticipated for any EFH species.

8.0 REFERENCES

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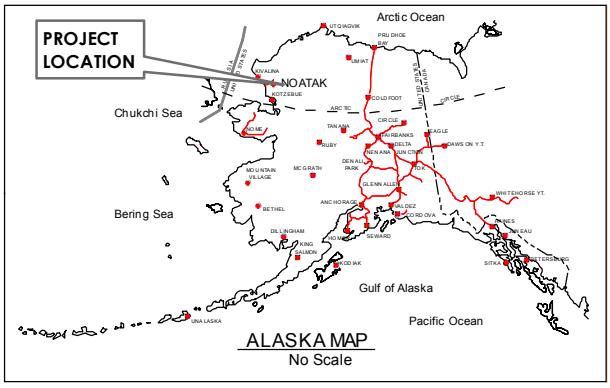
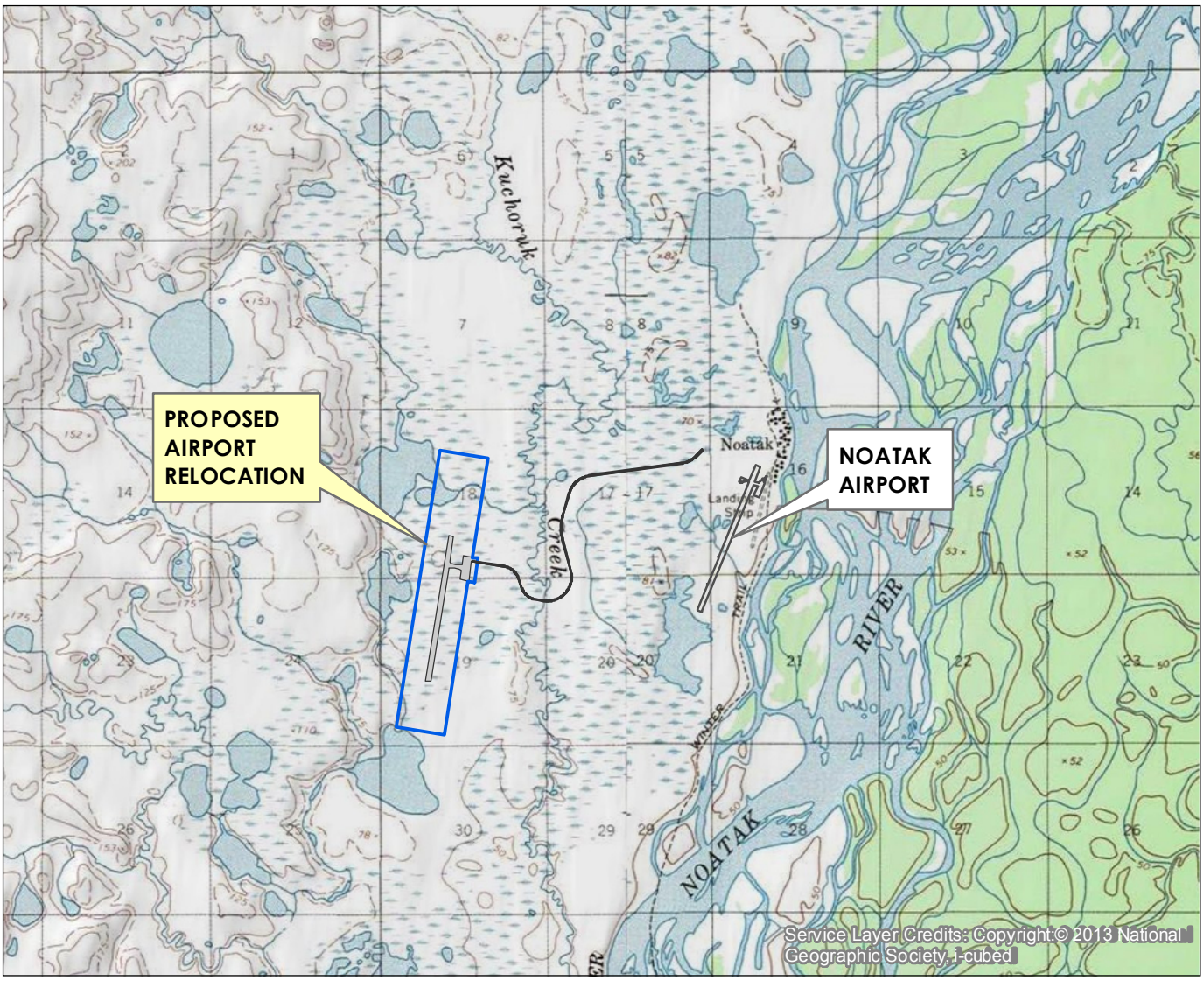
9.0 FIGURES





Project Origin: City of Noatak
Kotzebue Recording District,
T25, R19W, Sections 5,8,16-21, 29-32
T26, R19W, Sections 5-7, 18-20, 29, 32
T27, R19W, Sections 4, 5, 9, 16, 20, 21, 29, 32
T28, R19W, Sections 5-7, 17-21, 28, 33
T29, R19W, Sections 7, 17, 18, 20, 21, 27, 28, 33, 34
Kateel River Meridian

0 0.5 1 2 Miles
1:63,360 (at original document size of 8.5x11)

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA
Location & Vicinity Map

DATE: February, 2019 | FIGURE **1**

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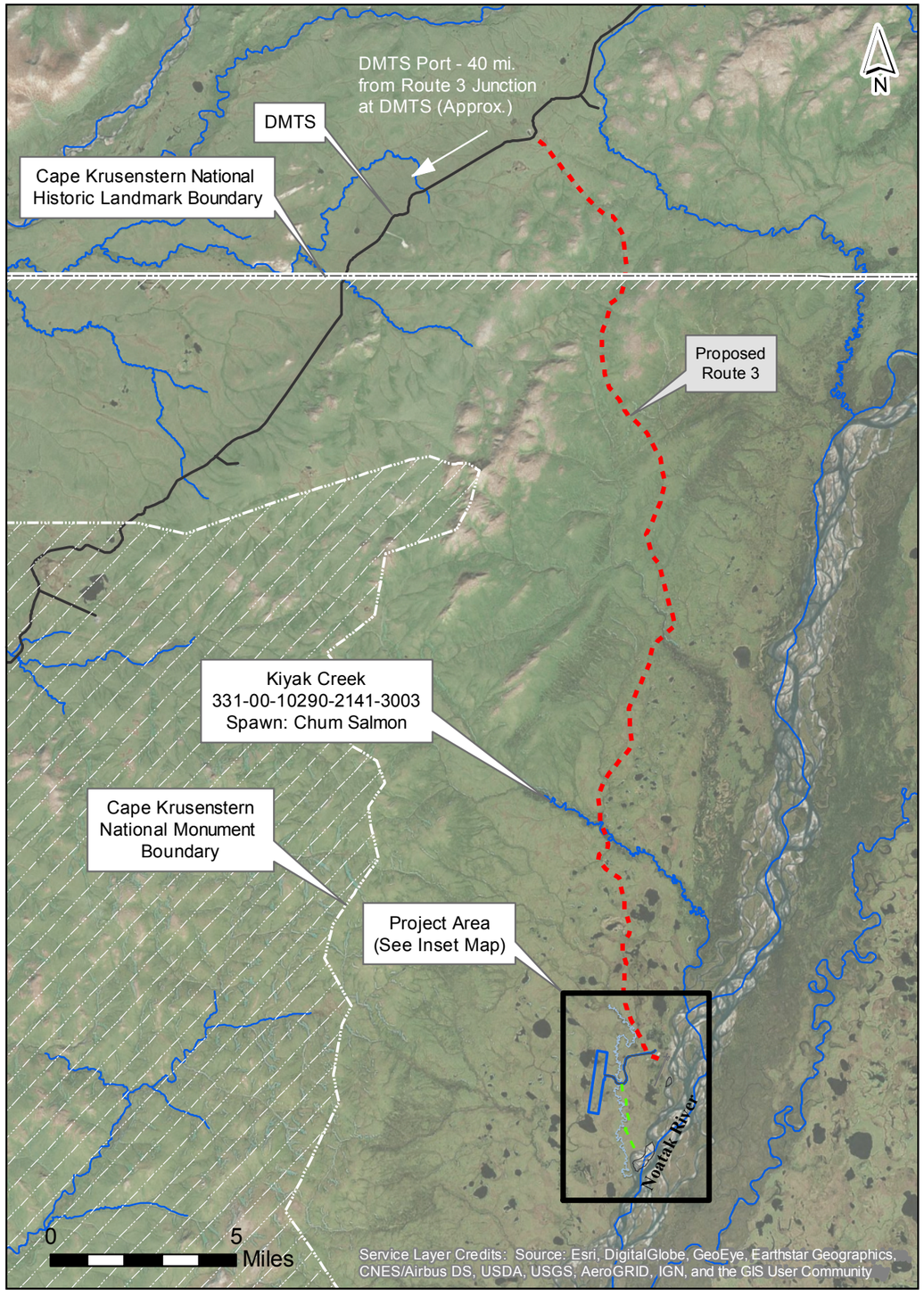

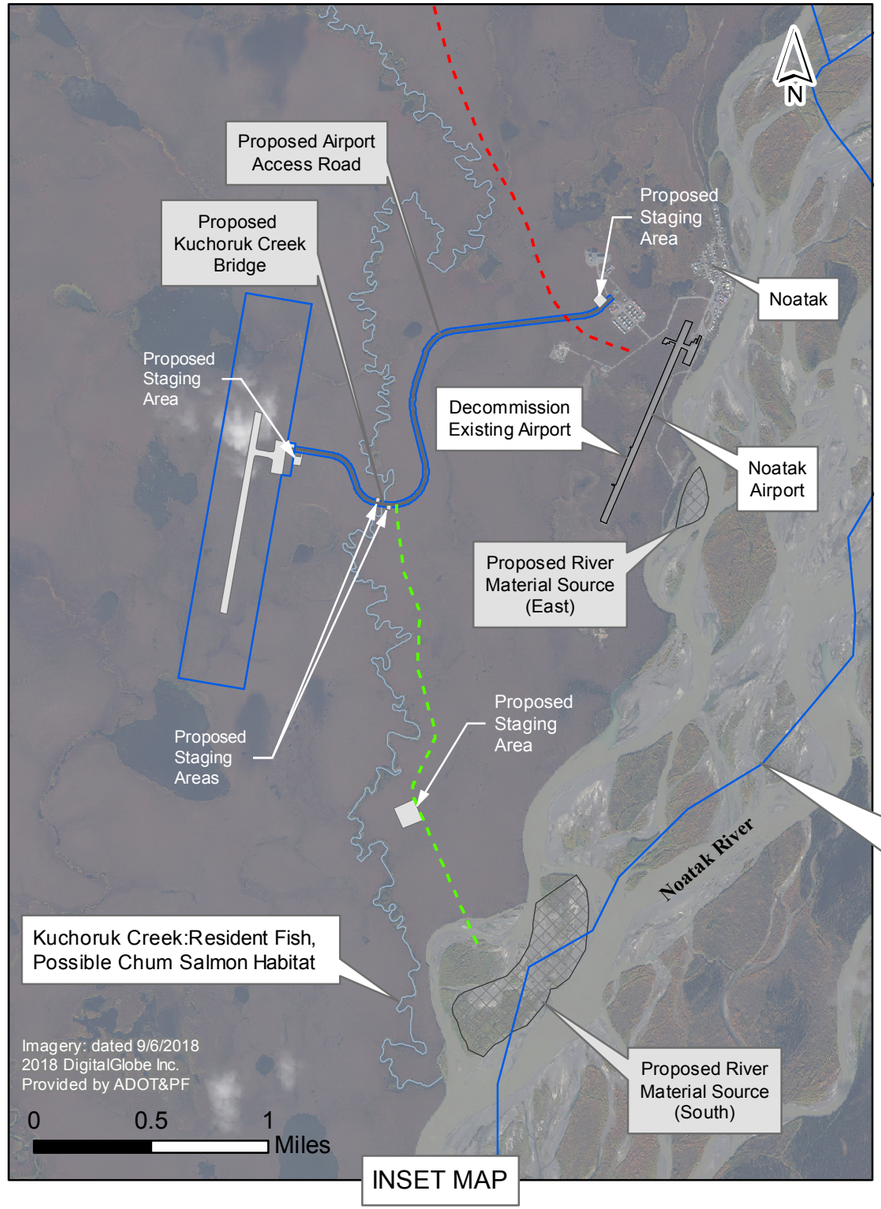

LEGEND

- Proposed Airport Property
- Proposed Runway & Apron
- Proposed Airport Access Road and Above Ground Electric Line
- Proposed Winter Snow Road (Route 3)
- Proposed Pioneer Road
- DeLong Mountain Transportation System (DMTS)
- Kuchoruk Creek
- ADF&G Anadromous Stream

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Fish Habitat

DATE: February, 2019 | FIGURE **11**

U:\20470590000\GIS\mxd\EFH\20470590000_EFH_Fig-02_Proposed_Action.mxd Revised: 2019-02-11 By: cpannone

LEGEND

- Proposed Pioneer Road
- Proposed Material Source
- Proposed Staging Area
- Kuchoruk Creek
- ADF&G Anadromous Stream

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Proposed River Material Source (South)

DATE: February, 2019 | FIGURE **3**

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November 8, 2006

Ryan Anderson, P.E.
Alaska Department of Transportation and Public Facilities
2301 Peger Road
Fairbanks, Alaska 99709

Re: Preliminary Hydrological Report for Noatak, Northern Regions Geotechnical Investigations 2005, AKSAS 62601

Dear Mr. Anderson,

Hattenburg Dilley & Linnell (HDL) is pleased to present the results of our preliminary hydrologic study for Noatak. HDL coordinated with Ken Karle, P.E., of Hydraulic Mapping and Modeling (HMM) to produce this report. The purpose of our preliminary study was to conduct a visual assessment of a potential borrow source island on the Noatak River about two miles downstream from the village of Noatak (Figure 1). ADOT&PF is planning construction of a new airport in Noatak, located approximately 1.5 miles east of the existing airport. The airport will include a new runway approximately 5,000 feet long by 100 feet wide in a 5,600-foot by 150-foot safety area; a 300-foot by 400-foot apron; a taxiway; and a 1.5-mile long access road. It is estimated that about 1,000,000 cubic yards (CY) of material would be required for the construction of this new airport.

Our scope of work for this phase of the project consisted of analysis of aerial orthophotos, topography, and geotechnical data, a site visit to conduct a hydrological reconnaissance, and a preliminary assessment of the potential causes and effects of mining within the Noatak River. This letter presents the results of the work as well as recommendations for future hydrologic and hydraulic work, particularly in support of the ADOT&PF's material source permitting efforts.

1.0 Data and Literature Analysis

HDL and HMM received mapping, photos, topography, and geotechnical data from ADOT&PF. We also conducted a field reconnaissance via boat, on foot, and by helicopter, and interviewed several locals about their experience with the river morphology over time. These items and activities, and other literature were analyzed to determine the appropriateness of the island in the Noatak River for gravel mining, the tendency of materials to replenish over time, and the potential effects of mining on the erosion of the river banks. The following should be considered in evaluating the mining of the island.

Scott Hattenburg, PE
Lorie Dilley, PE/CPG
Dennis Linnell, PE
David Lundin, PE

1.1 Stream channel type. Based on field observations and aerial photography, the Noatak River near the village of Noatak appears to have a high width-to-depth ratio. Removal of sediment from stream channels with naturally high width to depth ratios is less risky than from low width to depth ratio streams. Braided river channels are better candidates for sediment removal than other river channel types (Dunne et al. 1981). Because braided river systems are dynamic and channel shifting is relatively frequent and rapid, channel shifting due to sediment extraction may have less of an impact (Follman 1980). However, it is important to note that not all braided streams are necessarily aggrading, or depositing material (Simpson and Smith 2001).

The Noatak River transitions from a single channel meandering river to a braided configuration 30 to 40 miles upstream, at its confluence with the Kelly River and the Kugururok River. These two rivers flow south out of the Brooks Range and may be a source of increased bedload transport. The Noatak River at Noatak appears to have the potential to replenish the extracted material.

1.2 Large streams are better candidates for sediment removal than small streams. Large stream systems are preferable to small stream systems because they have comparatively more sediment, larger channels, and wider floodplains, and the proportionally smaller disturbance in large systems will reduce the overall impact of sediment removal (Follman 1980). On a smaller stream, the location of the extraction site is more critical because of the limited availability of exposed sediment deposits and the relatively narrower floodplain. The Noatak is a relatively large river, therefore extraction of material will have comparatively less impacts than in a small river.

1.3 Bars on the Noatak River appear to replenish annually. Residents report that an existing gravel removal site, located on a point bar adjacent to the village site, actively replenishes with gravel following the spring breakup high flow period. This site has been active for several years, and appears to be a consistent source of gravel, albeit on a smaller scale than that proposed for this project.

The island proposed for mining has a large point bar with poorly graded gravels. There is little overburden and vegetation, indicating that this point bar is an active depositional feature, and material may be depositing annually (Figure 2). Refer to the appended photo log for more photos of the island bar.

1.4 Permafrost at shallow depths affects bank erosion rates. Thermal and mechanical erosion results from heat transfer to frozen material followed by river transport of the thawed sediments (Walker and Arnborg, 1966). No permafrost was

encountered in ADOT&PF's geotechnical investigation on the island, and it was not encountered there in our field reconnaissance. Significant permafrost was evident on the west mainland cut banks from the Noatak River. In this reach, active erosion from permafrost was present (Figure 3). The exposure of the massive ice at the cut bank and resulting erosion will likely continue whether or not the river geometry continues to direct the energy toward the cut bank.

1.5 The quantity of usable material is adequate. Mining of the material on the island would occur in winter when water levels are relatively low. The geotechnical investigation, conducted in March and April 2006, indicated that the water table is typically 8 to 11 feet below natural grade at this time of year. Mining 8 to 10 feet of material from appropriate areas of the island will yield the 1,000,000 CY required for this project plus enough for a comfortable margin of error. Figure 4 indicates three mining areas on the island. Mining should occur preferentially in Area 1, with utilization of materials in Area 2 reserved for use when Area 1 does not produce adequate quantities of quality materials.

1.6 The cumulative effects of changes in sediment supply should be considered at the watershed scale. Reservoir construction, stream channel straightening, levee construction, bank protection works, and flow regulation can all substantively change the sediment load, morphology and habitat qualities of streams. The effects may occur shortly after project completion or be delayed and/or prolonged for decades. In general, sediment removal from streams is imprudent downstream from reservoirs or where channels are confined between levees or bank protection works, because these changes reduce coarse sediment supply (Cluer, 2004). Other than a small gravel removal site upstream, there are no other human activities in the Noatak watershed that would reduce sediment supply.

Commercial gravel/sediment removal generally poses low risk in channel locations where: (1) degraded habitat can be improved by sediment removal, (2) the interactions between aquatic species of interest and negative effects due to sediment removal are known (and are rare or non-existent), and where (3) risks of habitat loss caused by long-term geomorphic adjustments are low (Cluer, 2004). ADOT&PF will work with the Alaska Department of Fish and Game (ADF&G) to determine if the island bar area is critical habitat for any species of concern. Various methods have been developed to help minimize harmful effects of gravel removal for commercial purposes and are discussed below.

Managing extraction volumes within a sediment budget, and retaining minimal geomorphic form (to define a low flow migration channel, or head of bar to reduce headcutting), is used in California for commercial gravel/sediment regulation. Though reliable sediment budgets for the Noatak River may be difficult to develop, recommended techniques that both retain minimal form and provide a buffer should reduce harmful effects and encourage replenishment through deposition.

Further, it is recommended that the methods of gravel removal be designed to enhance topographic complexity within the channel, and to encourage natural restoration of self-sustaining geomorphic features and associated aquatic and riparian habitats. The rate and volume of sediment removal should not exceed that needed to promote the properly functioning habitats appropriate for the stream. It is also recommended that the duration of removal operations be finite.

2.0 Recommendations

The Noatak River appears to be a good candidate for gravel removal. It is clear, however, that the village of Noatak and the surrounding reach is in an active floodplain, and banks in the vicinity are actively eroding.

Historical photos and anecdotal evidence suggest that the island and channel morphology is likely to change to some degree annually. Local residents predict that the river will soon cut the island in half from north to south along a slough that has recently formed. An indication of the thalweg location and depth in both the main channel and the sloughs would provide some hints as to the morphologic tendencies. The local residents interviewed could not estimate the channel depth. Without further and complex hydraulic river modeling, it is difficult to predict the island morphology at a time in the future when gravel extraction activities would occur.

The gravel excavation plan should address the following considerations:

- Northern point of island. Protect upper vegetated section of the bar from any excavation activities. The protective armor layer should not be disrupted and existing vegetation should be allowed to naturally grow and establish.
- Lateral buffer. The undisturbed set-back area between the low flow channel that separates the island from the right bank and the Area 1 mining area should be no less than 20 percent of the active channel width. The protective armor layer should not be disrupted and vegetation should be planted or allowed to naturally establish. Additionally, the western third of the island is also designate as a lateral buffer, and should be left unexcavated and undisturbed, except for road access and other staging

activities.

- Grading and shaping. The plan should include a requirement for grading and shaping of the site post-extraction to ensure that there are no potholes, pits, or small pools left at the extraction site that may cause fish entrapment. Additionally, the bar should be sloped to maintain a positive flow back toward the main channel to prevent stranding.
- Excavation depth. The depth should vary so that there is always positive flow back into the main channel where water remains throughout the year. Maximum excavation depth should be less than the thalweg depth of the main channel to minimize potential for main channel movement.
- Excavated head slope. No steeper than 10:1 (horizontal to vertical). This is the slope transition between the protected head of bar and the bottom of the excavation area. This parameter is established to reduce the risk of channel movement.
- Excavated side slopes. No steeper than 10:1 (horizontal to vertical). This is the transition between the lateral buffer area and the bottom of the excavation area.
- Phased excavation. Excavation should begin in Area 1. Upon reaching suggested depths and quantities in Area 1, excavation should continue in Area 2.

With these considerations in mind, HDL estimated the total available volume of material that could be mined from the island. This volume includes all surface material inside the areas marked 1 and 2 on Figure 4 excavated to an elevation of 45 feet, which is at or up to 2 feet above the groundwater surface level observed in April 2006 in the geotechnical report. The total potential volume of mined material is approximately 1,400,000 CY. Areas 1 and 2 alone could produce well over the estimated 1,000,000 CY required for the airport project, and should be used preferentially over the unmarked western third of the island, to minimize exacerbation of the active erosion on the west mainland cut bank. Figures 5 and 6 represent a plan and cross-section of the mining plan.

Gravel will be excavated down to the existing water table. In winter, the water table may vary plus or minus several feet from the 45 foot elevation noted above for the estimation of available material volume. As such, variation in the water table at the time of excavation will affect the volume of available material.

It is unlikely that mining activity as shown in Areas 1 and 2 will affect erosion rates in the village of Noatak. The Noatak River has many gravel bar islands of varying size and several channels that appear to move and deposit gravel regularly, and Noatak is two miles upstream of the gravel island. It is likely that gravel materials will redeposit on the island after mining activities are through, although the size and form of the island may change.

3.0 Follow-On Tasks

Value can be added to this assessment if the mining contractor can be assured that enough material will still be available when mining occurs. It is also important to estimate the morphologic effects of mining on the bank erosion rates, and the tendency of the river to replenish material on the island bar. In order to better assess the channel morphology changes over time and predict the island morphology, we recommend 1) acquiring large scale historical aerial photos of the Noatak River upstream and downstream of Noatak to track the river changes over time, and 2) measuring river cross sections for at three locations along the reach (shown in Figure 4 as A-A' through C-C') to locate the thalweg and determine river bottom elevations.

4.0 Schedule

We would propose that the channel cross section information be gathered during an ice-free condition. Historical photos can be acquired and analyzed concurrently, with further recommendations for gravel mining operations submitted to ADOT&PF shortly thereafter.

If you have any questions or wish to discuss the findings or recommendations please do not hesitate to contact us.

Sincerely,
HATTENBURG DILLEY & LINNELL, LLC

Laurie M Hulse

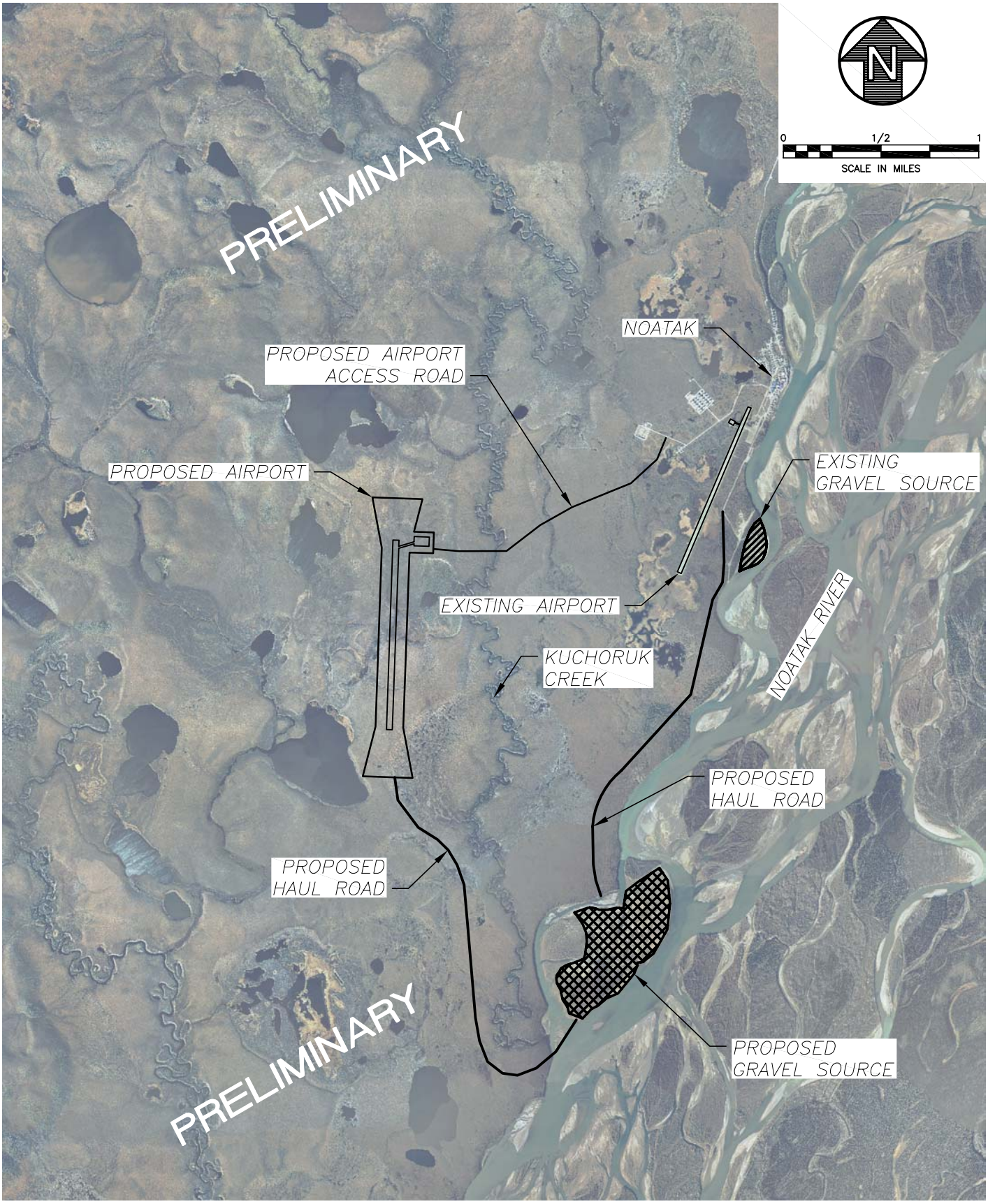
Laurie Hulse, P.E.
Civil Engineer

HYDRAULIC MAPPING AND MODELING

Kenneth E Karle

Kenneth Karle, P.E.
Hydraulic Engineer

Attached: Figure 1 Vicinity Map
Figure 2 Poorly Graded Gravel Material on Island



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NOATAK AIRPORT RELOCATION
GRAVEL BORROW AREA
PRELIMINARY MINING PLAN

NOATAK, ALASKA

DATE:	11-08-06	DRAWN BY:	MHN	SHEET:	FIGURE 1
SCALE:	SHOWN	CHECKED BY:	LMH	JOB NO.:	05-113

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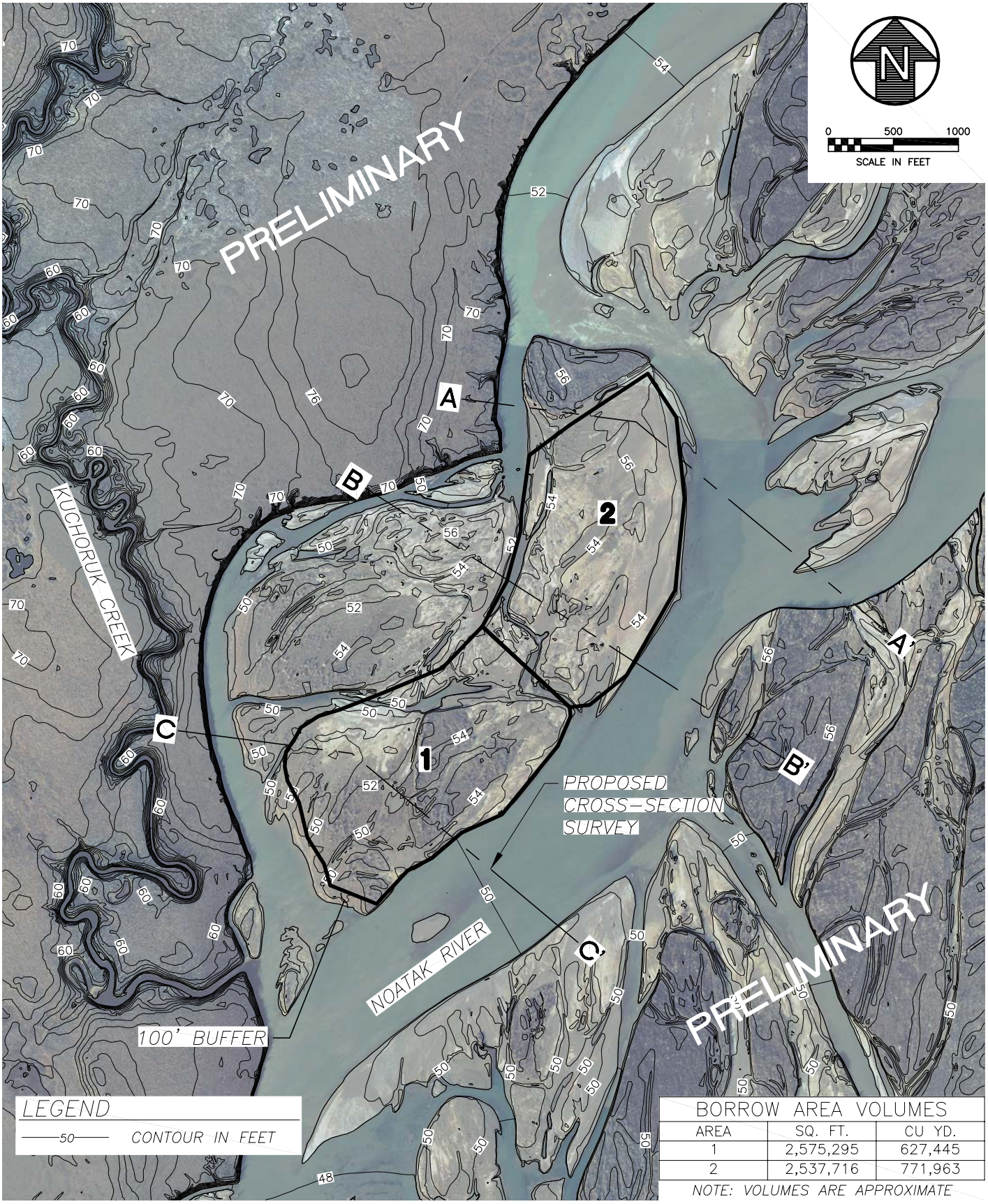
Figure 2. Poorly graded gravel material on island

Figure 3. Thermal and mechanical riverbank erosion



BORROW AREA VOLUMES		
AREA	SQ. FT.	CU YD.
1	2,575,295	627,445
2	2,537,716	771,963

NOTE: VOLUMES ARE APPROXIMATE

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PRELIMINARY MINING PLAN
NOATAK, ALASKA

DATE:	11-08-06	DRAWN BY:	MHN	SHEET:	FIGURE 4
SCALE:	SHOWN	CHECKED BY:	LMH	JOB NO.:	05-113

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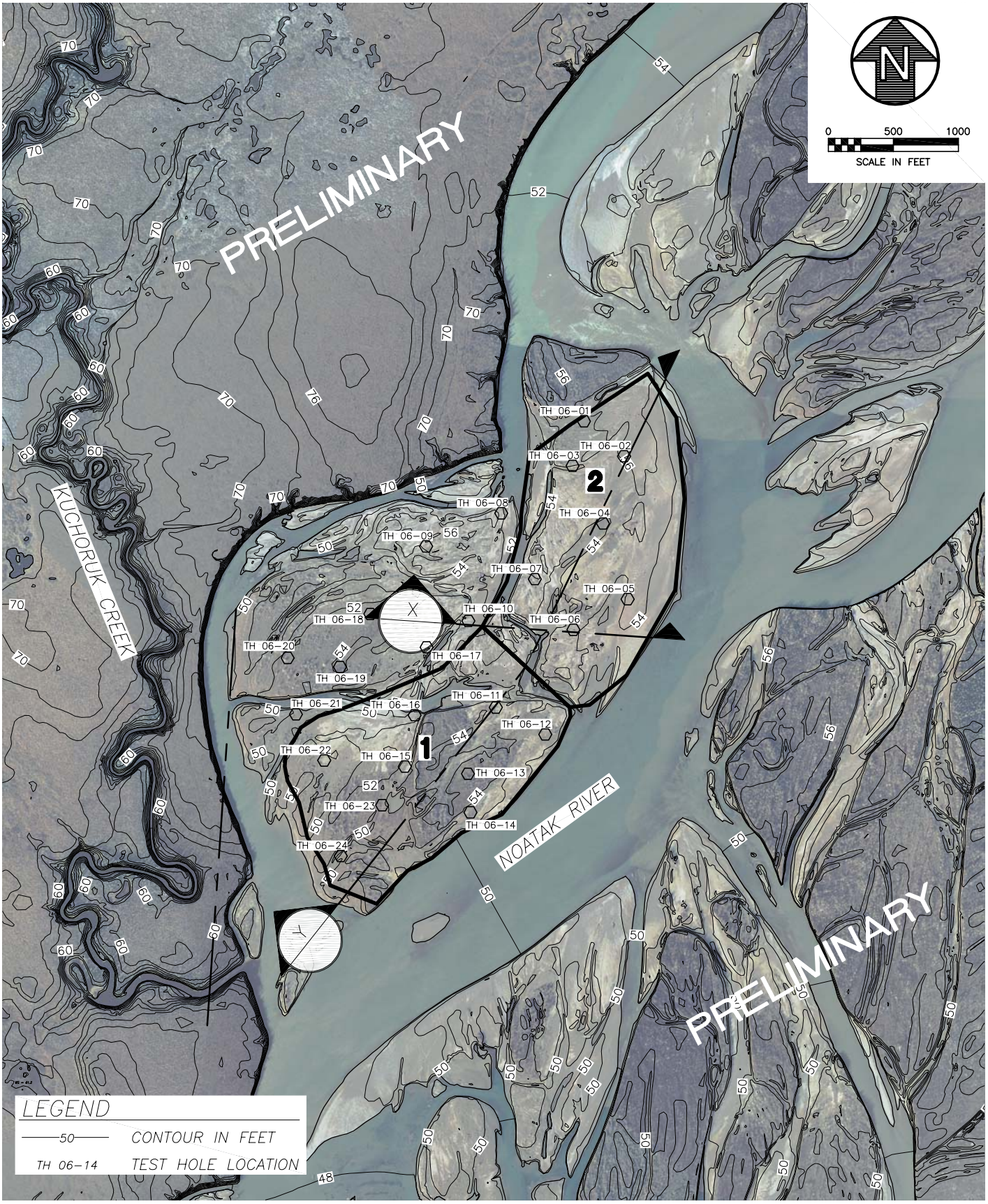

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NOATAK AIRPORT RELOCATION
GRAVEL BORROW AREA
PRELIMINARY MINING PLAN
NOATAK, ALASKA

DATE:	11-08-06	DRAWN BY:	MHN	SHEET:	FIGURE 5
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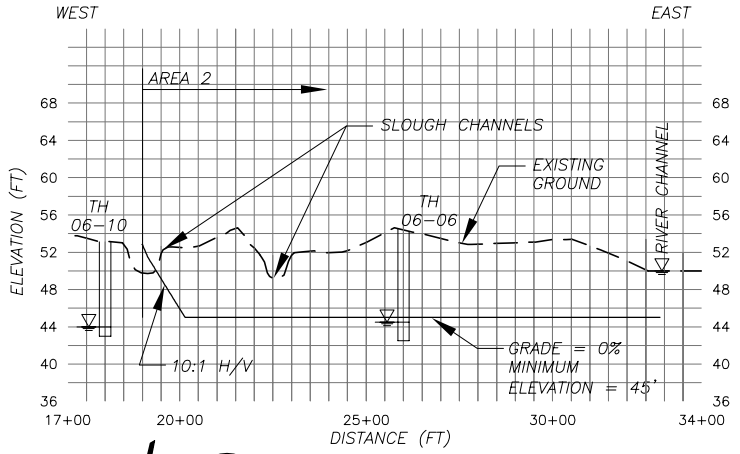


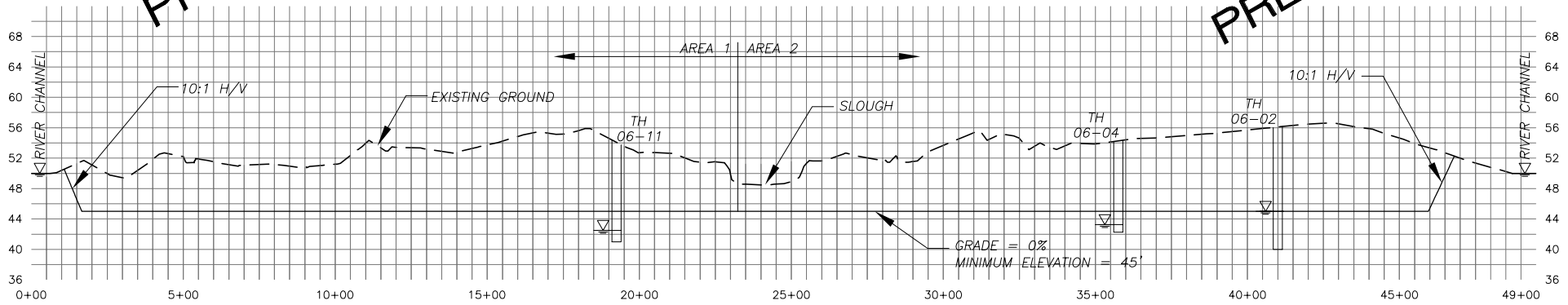
X **EAST WEST SECTION**
SCALE: HORIZ. 1:500 VERT. 1:20

PRELIMINARY

NOTES:

1. *TEST HOLE LOGS (TH) LOCATIONS ARE APPROXIMATE.*
2. *GROUND WATER ELEVATIONS IN TEST HOLES ARE FROM APRIL 2006. GROUND WATER ELEVATIONS WILL VARY WITH SEASON AND YEAR.*
3. *RIVER WATER ELEVATIONS ARE FROM SEPTEMBER 28, 2005. RIVER WATER ELEVATIONS WILL VARY WITH SEASON AND YEAR.*
4. *RIVER WATER AND GROUND SURFACE ELEVATIONS ARE VALID AT THE TIME OF DATA COLLECTION ONLY. A SURVEY IS REQUIRED AT THE TIME OF MINING TO DETERMINE ACTUAL MINING LIMITS AND QUANTITIES.*

PRELIMINARY



Y **NORTH SOUTH SECTION**
SCALE: HORIZ. 1:500 VERT 1:20

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NOATAK, ALASKA

DATE:	11-08-06	DRAWN BY:	MHN	SHEET:	FIGURE 6
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Trip Report Summary

August 17, 1006
Noatak, Alaska

Laurie Hulse, P.E., of Hattenburg Dilley & Linnell, LLC (HDL) and Ken Karle, P.E., of Hydraulic Mapping and Modeling (HMM) accompanied ADOT&PF staff to Noatak on August 17, 2006.

I met Ken Karle at the Anchorage Airport at 4:30 am. The 6am flight arrived in Kotzebue and we met Ryan Anderson, Jesse Reinikainen, and Patty Miller at the charter flight office. After a delay due to fog, Patty, Ken, and I arrived in Noatak at 12:30pm. Ryan and Jesse arrived shortly after with the helicopter. Julie Rowland met us at Noatak.

Patty, Ken and I met IRA officials at their office and secured a boat ride with Jim downriver to the potential gravel source island at about 1:30pm. We walked around on both the east and west sides of the island, observing hydrologic and hydraulic conditions. We observed the permafrost melt in the channel cut bank upstream of the island.

Back in Noatak, we met up with Ryan and Jesse, and attended the public meeting that Ryan organized at 3pm. The meeting was well-attended and provided an overview of the airport relocation project.

After the meeting, Ken, Jesse and I took a helicopter ride to view the gravel source island from the air. We also looked over the Kuchoruk Creek crossing that is planned for the new airport access.

After the 30-minute helicopter ride, the charter back to Kotzebue was waiting. Ken, Patty, Ryan and I flew back to Kotzebue. Jesse and Julie remained behind in Noatak.

We caught the 8:30pm flight from Kotzebue back to Anchorage, arriving at about 11pm.

Scott Hattenburg, PE
Lorie Dilley, PE/CPG
Dennis Linnell, PE
David Lundin, PE

3335 Arctic Boulevard Suite 100 • Anchorage Alaska 99503 • Phone: 907.564.2120 • Fax: 907.564.2122
808 South Bailey Street Suite 102 • Palmer Alaska 99645 • Phone: 907.746.5230 • Fax: 907.746.5231

HYDRAULIC MAPPING AND MODELING
Kenneth F. Karle, P.E.
PO Box 181, Denali Park, AK 99755

FIELD TRIP REPORT

Subject: August 2006 Field Trip Report to Noatak, Alaska

Project Name: Noatak Airport Relocation: Preliminary Hydrology Analysis

Location: Noatak River and Noatak Village

Date: August 17, 2006

1.0 INTRODUCTION

Laurie Hulse (HDL), Ken Karle (Hydraulic Mapping and Modeling), Ryan Anderson (ADOT&PF) and Jesse Reininkainen (ADOT&PF) traveled to Noatak to conduct a visual assessment of a potential borrow source island on the Noatak River about two miles downstream from the village of Noatak. We traveled to and from the community on a combination of air carriers including Alaska Airlines, Hageland Aviation, and Bering Air, arriving and departing on August 17, 2006. In Noatak, we also met with Patti Miller and Julie Rowland (ADOT&PF).

2.0 FIELD VISIT AND LOCAL INTERVIEWS – NOATAK, ALASKA

After arrival at Noatak, Laurie Hulse and Ken Karle spent several hours discussing the hydrology of the Noatak River with several NANA Regional Corporation staff. We discussed general conditions on the river, including annual breakup, inundation of point bars, lateral changes of the main channel water flow, and duration of inundation.

One of the local residents provided Patti Miller and us with a trip down the river by boat to see the proposed project location. We interviewed Jim about his observations on the river morphology. He pointed out numerous locations where severe bank erosion is ongoing along the right bank (see Figure 1), which is 10-15 feet in height. However, he noted that such conditions are not unusual, and that most erosion occurs in the spring during and following the high discharge rates after breakup.

We landed on the island in several places, including near the lower end in the low-water slough (Figure 2), and near the upper middle section along the main channel (Figures 3 and 4). The island appeared to be between 1 and 3 feet above the current water level. Jim noted that the island is inundated every spring during the high runoff period, even up into the vegetated levels. Jim noted a channel that is developing through the middle of the island, and noted, as did other

local residents, that he expects the channel to fully develop and divide the island into 2 sections by next summer. Jim was unable to estimate the depth of the main channel. We noted a steep actively eroding bank at the head of the island, which is heavily vegetated with willow and alder (Figures 5, 9, 10).

We also passed a point bar just downstream from the village that is currently used as a material source (Figures 6 and 8). Jim noted that the point bar replenishes every year with new sediment deposition. As such, most residents we talked to express the opinion that scalping gravel on river bars should have no effect on river morphology, and that most gravel mined will be replenished by annual sediment deposition.

One resident noted that his father, born in the early 1900s, told him that the river has dropped in depth over the past 50 years; walking across the river is almost possible now during low flow conditions. The resident also noted, as did others, that the main channel has moved significantly to the west, closer to the village and airstrip, in the past 40 years.

Upon our return to the village, we discussed the river morphology with other long-time residents, who echoed earlier comments about channel changes and annual deposition of sediment on river bars.

In mid-afternoon, we participated in a well attended a community meeting hosted by Ryan Anderson and Jesse Reininkainen (AKDOT&PF). Ryan and Jesse used a PowerPoint presentation to explain the status of the airport relocation project to local residents. We answered questions from local residents about the need for hydrology studies to help with determining the best location for a gravel source for the project.

Following the meeting, Laurie Hulse and Ken Karle viewed the island and adjacent areas in a helicopter arranged by ADOT&PF. At an elevation of several hundred feet above ground level, we were able to observe the braided nature of the Noatak River, and the extremely wide floodplain. We were also able to note that the main channel is severely impinging on the head of the project island at a severe angle (Figure 10).

We also flew over Kuchoruk Creek, which flows from north to south about one mile west from the village of Noatak Creek (Figure 12). In order to access the new airport location, a bridge will be required to cross Kuchoruk Creek. The creek appears to have a high sinuosity and a low width-to-depth ratio. Such systems generally maintain a high resistance to plan form adjustment, and are generally very stable unless disturbed. Downstream of the potential bridge location, we observed a few meander cutoffs that had occurred; other than those, Kuchoruk Creek appeared to be very stable. A wide riparian vegetative buffer is found along both banks through the entire reach, also indicating channel stability.

3.0 PHOTOS

Figure 1 – Left bank of Noatak River downstream from village, with visible ice lenses and active erosion.

Figure 2 – At lower end of island, looking across low water channel to the left bank, approximately 12-15 feet high.

Figure 3 - At mid-section of island, looking downstream along main channel.

Figure 4 – At mid-section of island, looking downstream. Gravel bank is 2-3 feet above water surface elevation.

Figure 5 – Head of island, with heavily vegetated area.

Figure 6 – Point bar currently used as material source, with annual deposition.

Figure 7 – Cement bag revetment to protect main bank at Village of Noatak.

Figure 8 – Aerial photo of point bar currently used as material source.

Figure 9 – Looking downriver at island. Note heavy vegetation at top of island, and new channel forming through mid-island.

Figure 10 – Looking upriver at island. Note severe deflection of main channel at head of island.

Figure 11- Looking from west to east at island. River flows from left to right.

Figure 12- Kuchoruk Creek, at new bridge crossing location. Note existing footbridge.

4.0 END OF TRIP

Following the helicopter trip, we returned later that evening via charter to Kotzebue with Ryan Anderson and Patti Miller, and subsequently returned to Anchorage via commercial carrier.

HDL Noatak Hydrologic Feasibility Study Photo Log

Next

File Name:existing local gravel source.jpg
Capture Date:2006/08/16 20:24:16

File Name:island east side and point bar from north.jpg
Capture Date:2006/08/16 20:06:36

File Name:island from SW.jpg
Capture Date:2006/08/16 20:22:09

File Name:island from west.jpg
Capture Date:2006/08/16 20:11:59

Next

HDL Noatak Hydrologic Feasibility Study Photo Log

Back Next

File Name:thermal erosion 3.jpg
Capture Date:2006/08/16 16:04:54

File Name:West Mainland bank erosion 1.jpg
Capture Date:2006/08/16 15:58:48

File Name:West Mainland bank erosion 2.jpg
Capture Date:2006/08/16 15:59:01

File Name:West Mainland bank erosion 3.jpg
Capture Date:2006/08/16 16:03:25

Back Next

HDL Noatak Hydrologic Feasibility Study Photo Log

Back Next

File Name:noatak erosion control project 2.jpg
Capture Date:2006/08/16 15:55:29

File Name:slough on west sife of island.jpg
Capture Date:2006/08/16 16:20:04

File Name:thermal erosion 1.jpg
Capture Date:2006/08/16 16:04:13

File Name:thermal erosion 2.jpg
Capture Date:2006/08/16 16:04:27

Back Next

HDL Noatak Hydrologic Feasibility Study Photo Log

Back Next

File Name:island vegetation 3.jpg
Capture Date:2006/08/16 16:55:00

File Name:noatak 1.jpg
Capture Date:2006/08/16 15:53:58

File Name:noatak 2.jpg
Capture Date:2006/08/16 15:54:08

File Name:noatak erosion control project 1.jpg
Capture Date:2006/08/16 15:55:03

Back Next

HDL Noatak Hydrologic Feasibility Study Photo Log

Back Next

File Name:island north point upstream.jpg
Capture Date:2006/08/16 16:08:43

File Name:island vegatation 1.jpg
Capture Date:2006/08/16 16:14:13

File Name:island vegetated upstream point.jpg
Capture Date:2006/08/16 20:12:40

File Name:island vegetation 2.jpg
Capture Date:2006/08/16 16:17:00

Back Next

HDL Noatak Hydrologic Feasibility Study Photo Log

Back Next

File Name:island material 1.jpg
Capture Date:2006/08/16 16:29:26

File Name:island material 2.jpg
Capture Date:2006/08/16 16:29:36

File Name:island material 3.jpg
Capture Date:2006/08/16 16:33:28

File Name:island material and vegetation.jpg
Capture Date:2006/08/16 16:29:14

Back Next

HDL Noatak Hydrologic Feasibility Study Photo Log

Back

File Name:west side of island.jpg
Capture Date:2006/08/16 17:05:42

Back

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668
March 25, 2019

Keith Gordon, Environmental Protection Specialist
U.S. Department of Transportation
Federal Aviation Administration
222 W. 7th Ave, Box #14
Anchorage, Alaska 99513-7587

Re: Z614780000 Noatak Airport Relocation, Northwest Arctic Borough

Dear Mr. Gordon:

The Alaska Department of Transportation and Public Facilities (ADOT&PF) and the Federal Aviation Administration (FAA) propose community safety improvements in Noatak, Alaska by relocating and constructing an airport, access road, utilities, and material source; and decommissioning the existing airport. The existing airport is threatened by Noatak River erosion, which necessitates permanent runway closure. Additionally, there is insufficient land available to address other existing airport deficiencies. The Endangered Species Act (ESA) and Magnuson-Stevens Fishery Conservation and Management Act (MSA) require federal agencies to consult with the National Marine Fisheries Service (NMFS) on any action that significantly affect endangered marine mammals or may adversely affect Essential Fish Habitat (EFH) [50 CFR 600.920 (a)(1)].

NMFS received a Draft EFH Assessment and other project documents from ADOT&PF on February 7, 2019. On February 15, ADOT&PF met with NMFS EFH and ESA leads to discuss its scope, timeline, and impacts. On February 22, NMFS received notice of FAA's approval of those documents for our consultation. Specifically, based on the information provided by ADOT&PF and FAA in the February 2019 Draft EFH Assessment, and items discussed at our meeting, we offer the following comments pursuant to the MSA.

Proposed Action
The proposed project would mine gravel bars within the Noatak River to provide material for construction. Two material sources are proposed: the East River Material Source, which is the existing community source, and the South River Material Source, located approximately two miles downstream of the village. Material source operations could occur at any time of year, and bridges or culverts would be required to cross braids of the Noatak River and access the active source. A winter snow road will be permitted for contractor use from the Delong Mountain Transportation System to bring equipment and materials to the project area. This includes crossing Kiyak Creek, an anadromous stream. A new bridge would also be constructed over Kuchoruk Creek in order to access the proposed airport from Noatak.

Essential Fish Habitat and EFH Assessment
The Fishery Management Plan for Salmon Fisheries in the Exclusive Economic Zone off Alaska (Salmon FMP) identifies EFH for all five species (*Oncorhynchus* spp.) of Pacific salmon in the

project area. The Alaska Department of Fish and Game (ADF&G) anadromous waters catalog (AWC) identifies presence of all five salmon species in the Noatak River, and chum salmon (*O. keta*) spawning in Kiyak Creek. Kuchoruk Creek is not currently designated as anadromous, however ADF&G has indicated only chum salmon may be present.

In its EFH Assessment, ADOT&PF and FAA considered impacts on EFH fishery resources from the proposed action, including those from developing material sources within the Noatak River, hauling of materials from the river bar within areas below ordinary high water, and crossing Kiyak Creek in winter. The EFH Assessment is considered complete and provides the mandatory contents described in 50 CFR 600.920 (e)(3).

Adverse Effects of the Proposed Action

NMFS appreciates ADOT&PF and FAA referencing our recent publication, *Impacts to Essential Fish Habitat from Non-Fishing Activities in Alaska*, during the development of their EFH Assessment for this project. ADOT&PF and FAA have determined that the proposed action may have minimal adverse effects on EFH. NMFS agrees with this determination. Potential adverse effects to EFH from the proposed action may include:

- Alteration of habitat and increased turbidity resulting from material source extraction.
- Potential for fish entrapment if material sites leave depressions that become isolated pools when water levels decrease.
- Potential for fish entrapment from water withdrawal during winter snow road construction.
- Degradation of water quality through accidental spills and increased turbidity.
- Potential blockages to fish passage due to ice dams.
- Reduction of available overwintering habitat.

EFH Conservation Recommendations

ADOT&PF and FAA have included measures to mitigate impacts to EFH, including adherence to best management practices (BMPs) and relevant State of Alaska and other federal permitting requirements. We acknowledge the following conservation measures put forth in the EFH Assessment:

- Construction of all crossing structures will adhere to appropriate BMPs for in-stream work to minimize potential effects to fishes and fish habitats from sediment mobilization and transport, and accidental contaminant spills.
- Impacts to Noatak River braided streams will be minimized through temporary bridges or culverts. Culverts would be sized and maintained for stream flows and fish passage.
- Adequate setbacks, as determined through permitting, will be maintained to avoid breeching the river channels.
- Ice dams during spring break up will be prevented by identifying potential blockages from ice infrastructure, and removing the potential blockage prior to break up.
- Fuel operations will be conducted under a Spill Prevention, Control, and Countermeasure plan to prevent impacts to surface water quality.
- If required by the ADF&G Fish Habitat Permit, a fish escapement channel will be excavated to prevent the trapping of fish in the material source extraction area.
- Water withdrawal volume limitations and use of ADF&G compliant screened intakes will reduce the potential for adverse effects.

- Screened intake and volume withdrawal criteria will be used to ensure potential effects to fish and EFH are mitigated.
- Ice dams during spring break up will be prevented by identifying potential blockages from ice infrastructure and removing the potential blockage prior to break up.

After review of the EFH Assessment and the conservation and mitigation measures already in place, NMFS offers the following EFH Conservation Recommendations, pursuant to Section 305(b)(4)(A) of the MSA:

- If possible and when practicable, materials from the existing airport should be used for construction of the new infrastructure.
- Minimize the areal extent and depth of extraction to the extent practicable.

Section 305(b)(4)(B) of the MSA requires federal agencies to provide NMFS with a written response to these EFH Conservation Recommendations within 30 days. Should a response be inconsistent with our recommendations, ADOT&PF and FAA must provide reasoning to NMFS for not implementing them. Further, if ADOT&PF and FAA will not make a decision within 30 days of receiving EFH Conservation Recommendations, they should provide NMFS with a letter within 30 days to that effect, and indicate when a full response will be provided.

ADOT&PF and FAA are consulting with NMFS on the effects of this project on species listed under the ESA. Please continue your communication with Bonnie Easley-Appleyard at bonnie.easley-appleyard@noaa.gov or (907) 271-5172 on ESA matters. Should the proposed action, its effects on EFH, or mitigation measures change significantly, NMFS wishes to be informed of any such changes in order to reassess our determination. If you have any questions regarding EFH resources on this project, please contact Samantha Simpson at samantha.simpson@noaa.gov or (907) 271-1301.

Sincerely,

for James W. Balsiger, Ph.D.
Administrator, Alaska Region

cc: Keith Gordon, ADOT, Keith.Gordon@faa.gov
Melissa Jensen, DOT&PF, melissa.jensen@alaska.gov
Brett Nelson, DOT&PF, brett.nelson@alaska.gov
Chris Johnston, DOT&PF, chris.johnston@alaska.gov
Paul Karczmarczyk, DOT&PF, paul.karczmarczyk@alaska.gov

APPENDIX E

PUBLIC AND AGENCY COORDINATION

Page

P. O. Box 89
Noatak, Alaska 99761
Phone: (907)485-2173
Fax (907)485-2137

Native Village of Noatak

Fax

To: Ryan Anderson From: Herbert Walton-Administrator

Fax: 907-45:-5126 Date: 11/03/04

Phone: Pages: 4 (incl. cover sheet)

Re: Resolution 04-08 CC:

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

•Comments:

Here is the Resolution 04-08
Passed by: Poll vote

Noatak, AK 99761
Phone: (907) 485-2173
Fax: (907) 485-2137

2004 POLL VOTE FORM

WE, THE COUNCIL, DO HEREBY APPROVE/DISAPPROVE THE FOLLOWING:

x Pass Resolution 04-08 Requesting the Assistance of the Alaska Dept of transportation and Public facilities as well as FAA in planning, designing, and constructing a new Noatak airport and related purposes.

COUNCIL	APPROVE	DISAPPROVE	COMMENTS
FRANK ADAMS SR. 485-2200	out of town		
VIRGIL ADAMS SR. 485-2145	✓		
VELMA JONES 485-2109	✓		
NORMAN MONROE 485-2253	out of town		
ENOCH MITCHELL SR. 485-2175	out of town		
~~JOSEPH LUTHER UNLISTED~~ Roland Ashby 2130	✓		
CALEB SAGE 485-2228	✓		

PERSON TAKING POLL VOTE: Arlene Moo

DATE: 11/02, 2004

RATIFIED:

Native Village of Noatak
PO Box 89
Noatak, AK 99761
Phone: (907) 485-2173
Fax: (907) 485-2137

RESOLUTION 04-08

A RESOLUTION OF THE NOATAK IRA COUNCIL REQUESTING THE ASSISTANCE OF THE ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES (ADOT&F), AS WELL AS THE FEDERAL AVIATION ADMINISTRATION (FAA), IN PLANNING, DESIGNING, AND CONSTRUCTING A NEW NOATAK AIRPORT, AND FOR RELATED PURPOSES.

WHEREAS: the Noatak IRA, a federally recognized Indian Tribe is the local governing body of the Native Village of Noatak; and

WHEREAS: the Noatak IRA Council is the only local governing body for the tribal members of the Native Village of Noatak; and

WHEREAS: for the past 15 years the Native Village of Noatak has had to rely exclusively on air carrier services for the transportation of passengers, goods, and materials into our village due to the non-navigability of the Noatak River and the unavailability of commercial barge service; and

WHEREAS: commercial air service is the critical link to the outside world and all non-local services, including health care; and

WHEREAS: R & M Consultants Inc., an Anchorage based engineering firm under subcontract to the Alaska Native Tribal Health Consortium, has conducted a study which maps the historic progression of riverbank erosion in the area just south of our village, and predicts that future erosion will render our current airport unusable by the year 2010; and

WHEREAS: the loss of use of this airport would have dire economic and health consequences for our community; and

WHEREAS: a new airport, in conjunction with a currently proposed new road connecting Noatak to the Delong Mountain Transportation System Haul Road, if constructed to required standards could serve Noatak adequately but could also serve as an alternate airport for the Red Dog Mine, which is frequently hampered by poor weather conditions and airport closures;

NOW THEREFORE BE IT RESOLVED, THAT THE NOATAK IRA COUNCIL URGES THE ADOTPF AND THE FAA TO TAKE NECESAARY STEPS TO PLAN DESIGN AND CONSRUCT A NEW AIRPORT FOR THE NATIVE VILLAGE OF NOATAK, ALASKA.

Certification

We, the undersigned do hereby certify that the Native Village of Noatak IRA Council, by a vote of 4 in favor and 0 against, duly passed the foregoing resolution on this 2nd day of November, 2004, and that a quorum was present.

President

Secretary

Attest

11-3-04
Date

Noatak Road and Airport

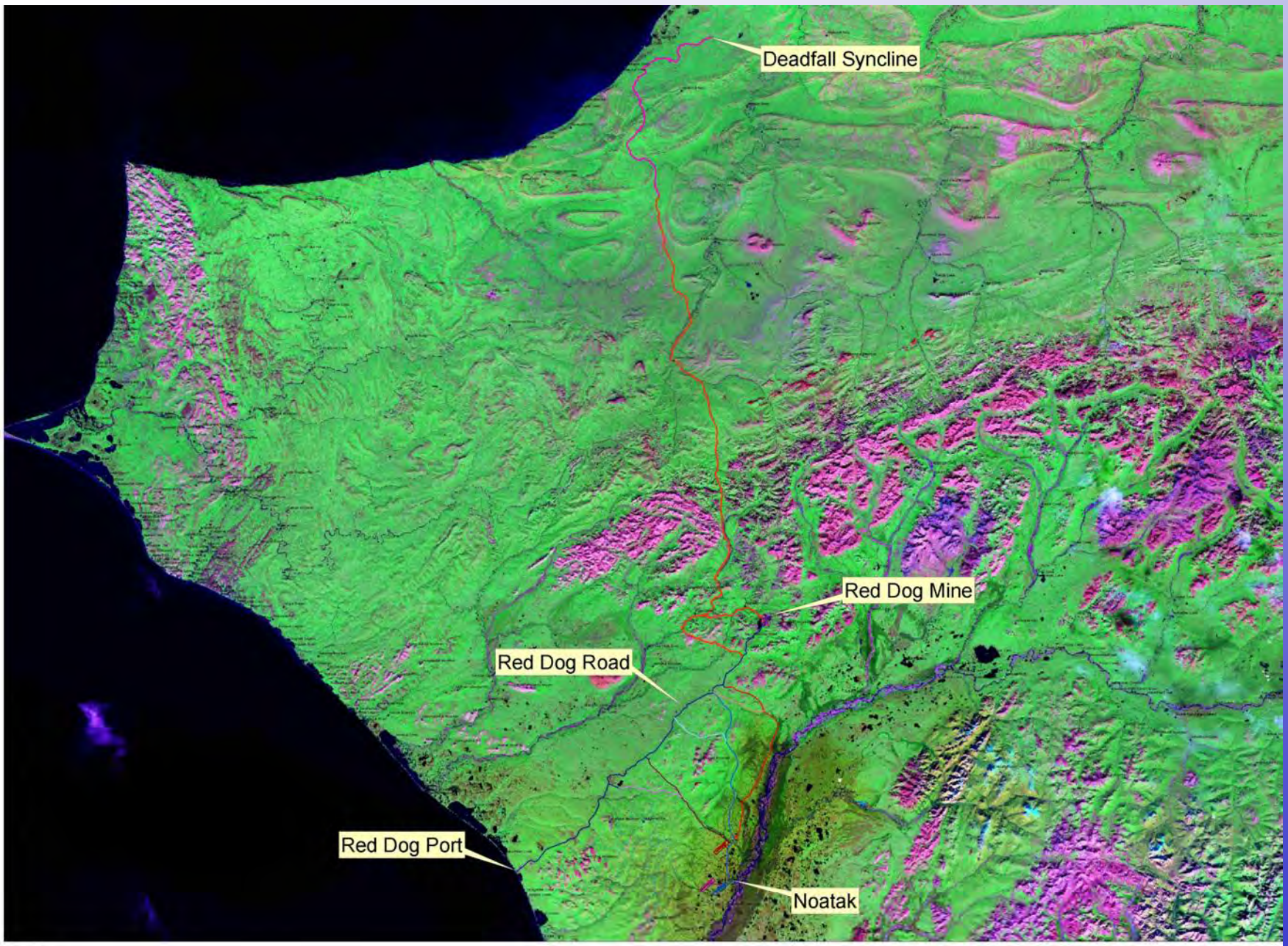
Presented By:
Patty Miller ADOT&PF
Ryan Anderson ADOT&PF
Northern Economics

Introduction

- Who is working on this Project?
  - ADOT&PF Design and Planning Group Effort
  - Northern Economics
  - In Cooperation with:
    - Noatak
    - Maniilaq
    - NANA
    - NWAB
    - AIDEA
    - Teck Cominco

Project Overview

- Background
  - 2001-2002 Resource Transportation Analysis (RTA) conducted for the Northwest Alaska Transportation Plan indicated several promising possibilities
  - Roads to Resources Program initiated in March 2003
  - Detailed project specific RTA's are being conducted


Deadfall Syncline
Red Dog Mine
Red Dog Road
Red Dog Port
Noatak
Alaska Department of Transportation and Public Facilities
Noatak Road and Airport
Overview

Project Overview

- Purpose
  - Construct a road to connect the Village of Noatak with the Red Dog Mine Road.
  - Construct a new airport in the vicinity of the Village of Noatak.

Project Overview

- Needs: Teck Cominco
  - Insufficient runway availability, 75% on average, at the existing Red Dog Mine airstrip due to weather
  - Paved runway to support current fleet, and upcoming fleet upgrades
  - Road access to Noatak from the Red Dog Mine and Port Site
- Needs: Noatak
  - This is why we are here

Project Overview

- Description
  - Relocate the airport near Noatak
  - Construct 20 to 35 miles of road connecting Noatak, and the new airport, to the existing Red Dog Mine road

Project Overview

- Why are we here?
  - To give a project description and update
  - To gather any comments or concerns you may have
  - To answer any questions regarding the project, or the program in general

Engineering Study

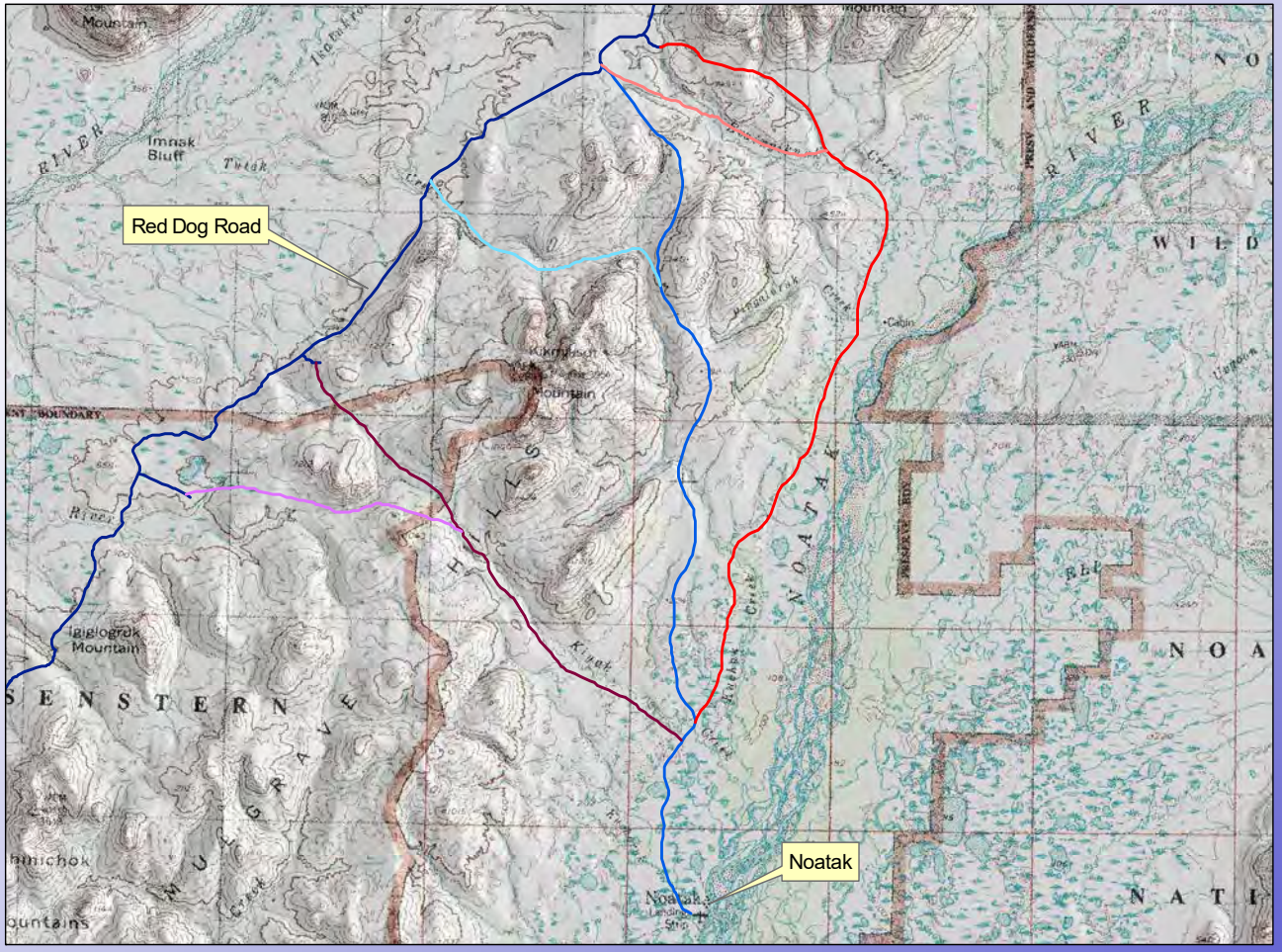
- Current Status: Work on Resource Transportation Analysis
  - RTA work will be complete early next year
- Focus is on two areas: Road Options, and an Airport Study

Road Options

Alaska Department of Transportation and Public Facilities

Noatak Road and Airport

Preliminary
Road Corridor Overview



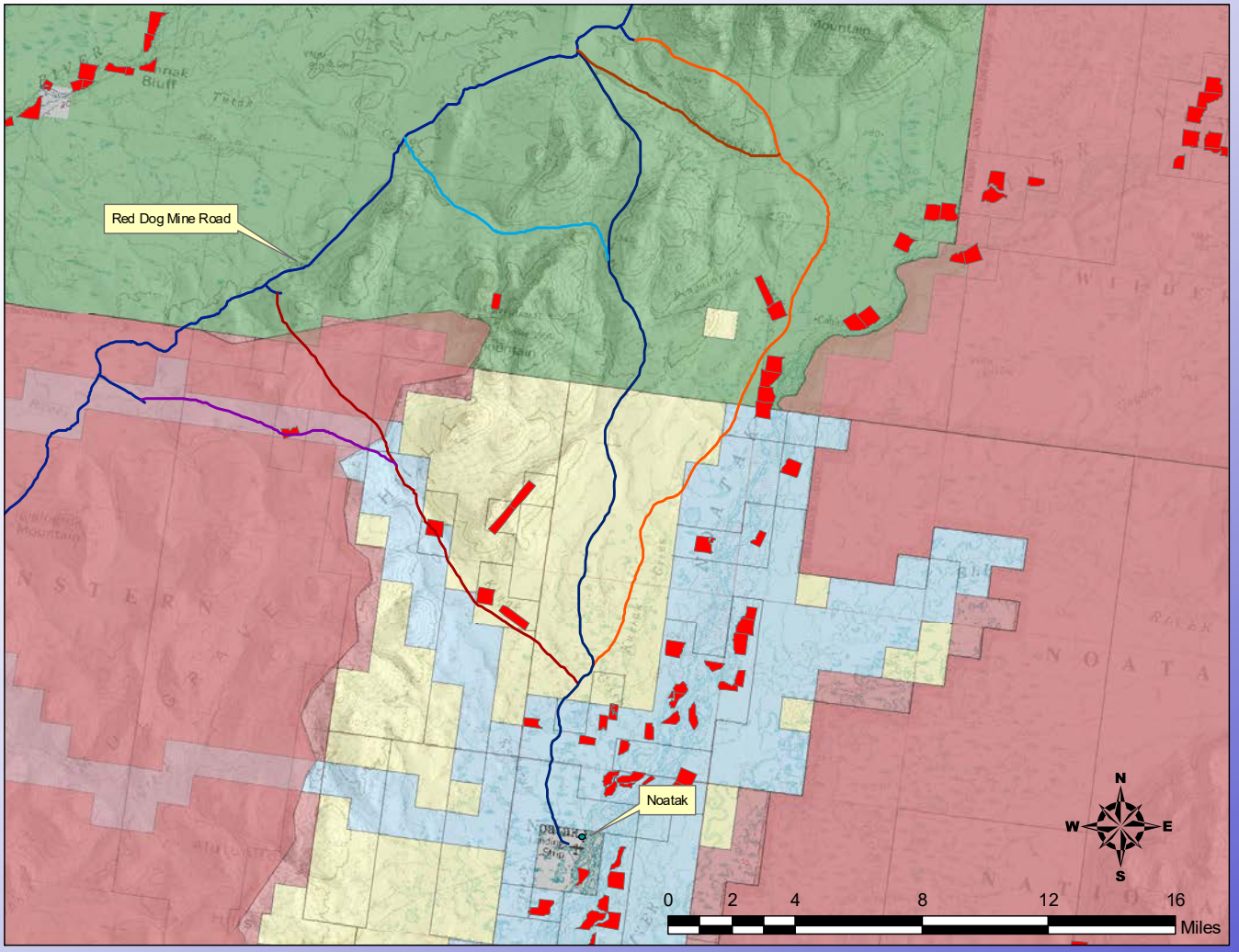
Road Options

- R1
- R1a
- R2
- R2a
- R3
- R3a

Alaska Department of Transportation and Public Facilities

Noatak Road and Airport

Preliminary Land Status



Legend

Land Status

- Cape Krusenstern National Monument
- Noatak National Preserve
- Native Selected (BLM)
- Native Interim Conveyed
- State Tentatively Approved
- Native Allottment

Road Options

- R1
- R1a
- R2
- R2a
- R3
- R3a

Sources of Data:
Alaska Department of Natural Resources,
Land Records Information Section
"General Land Status Clipped to 1 to 63,360 Coastline"

Alaska Department of Transportation and Public Facilities

Noatak Road and Airport

Proposed Connection

Where is the best place to tie into the community?

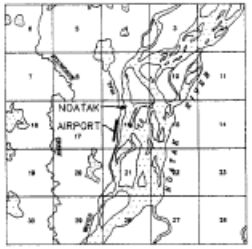
Source of Data: 2000 AeroMap Photography

N
W E
S

Miles
0 0.05 0.1 0.2 0.3 0.4

Airport Options

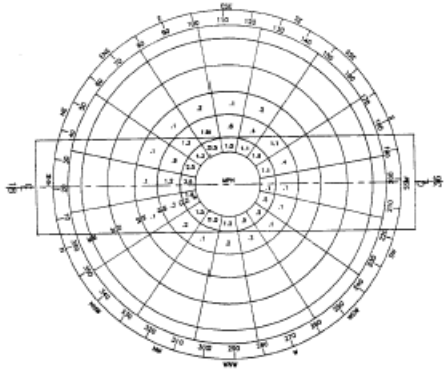
LOCATION MAP
NO SCALE

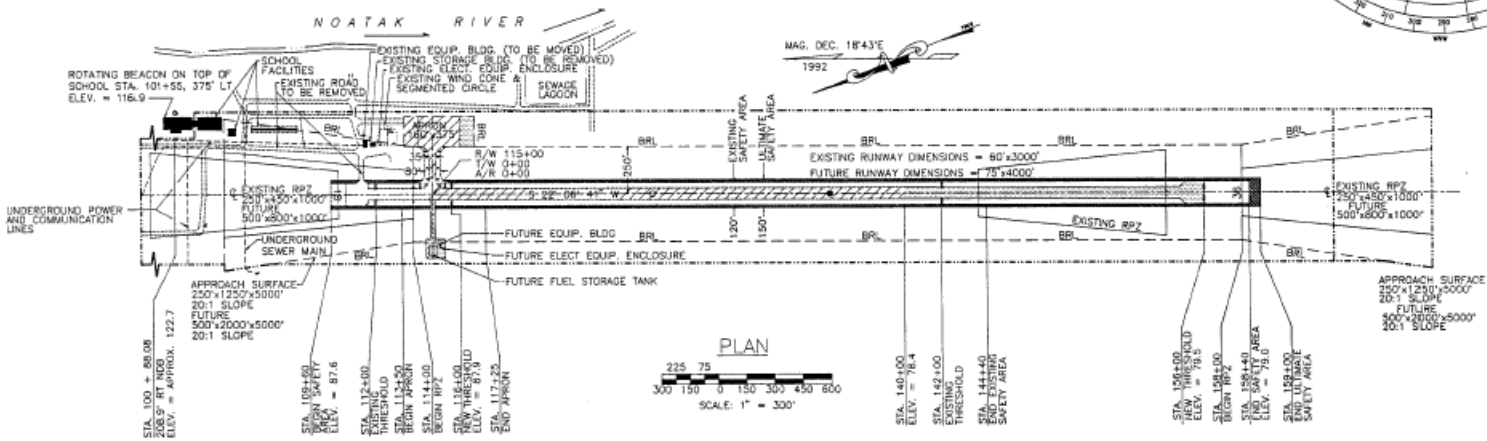


VICINITY MAP
NO SCALE
USGS NOATAK (C-2)
T 25 N, R 6 E, 19W
KATEEL RIVER MERIDIAN, ALASKA

WIND ROSE
10.5 KNOTS

WIND DATA
95.5% WIND COVERAGE
RUNWAY 18/36
WIND DATA PERIOD:
August 1985 – September 1986
University of Alaska
Arctic Environmental
Information & Data Center





PLAN
SCALE: 1" = 300'

RUNWAY DATA

	RUNWAY 18 / 36		RUNWAY	
	EXISTING	FUTURE	EXISTING	FUTURE
EFFECTIVE GRADIENT	0.32%	0.32%		
% WIND COVERAGE	95.5%	95.5%		
PAVEMENT SURFACE	GRAVEL	GRAVEL		
PAVEMENT STRENGTH	N/A	N/A		
APPROACH SURFACES	20:1	20:1		
RUNWAY LIGHTING	MIRL	MIRL		
RUNWAY MARKING	NONE	NONE		
NAVIGATION AIDS	NDB	NDB		
RUNWAY SAFTEY AREA	120'x3480'	150'x4940'		
RUNWAY DIMENSION	60'x3000'	75'x4000'		
TAXIWAY	35'x220'	35'x220'		

AIRPORT DATA

	EXISTING	FUTURE
AIRPORT ELEVATION (M.S.L.)	88	88
AIRPORT LOCATION POINT (A.L.P.)		
MEAN TEMP. HOTTEST MONTH (DAILY MAX.)	59°	59°
TAXIWAY LIGHTING	MTL	MTL
RAMP LIGHTING	NONE	NONE
* AIRPORT REFERENCE POINT (A.R.P.)	LAT. 67 33.9'N LONG. 162 58.6'W	LAT. 67 33.8'N LONG. 162 58.7'W
AIRPORT AND TERMINAL NAVAIDS	NDB	NDB
AIRPORT REFERENCE CODE	B-I	B-II
* RUNWAY 18 THRESHOLD	LAT. 67 33.1'N LONG. 162 58.4'W	LAT. 67 33.1'N LONG. 162 58.4'W
* RUNWAY 36 THRESHOLD	LAT. 67 33.5'N LONG. 162 59.0'W	LAT. 67 33.5'N LONG. 162 59.0'W

* NOTE: HORIZONTAL CONTROL BASED ON NAD 1927

LEGEND

	EXISTING	FUTURE
DOT R.O.W.		
BUILDING RESTRICTION LINE (B.R.L.)	BRL	BRL
AIRPORT REFERENCE POINT		
ROTATING BEACON		
BUILDINGS		
ROADWAYS		
RIVER BANK		
THRESHOLD LIGHTING		
WIND CONE (LIGHTED)		
RUNWAY/TAXIWAYS/APRON		
SAFETY AREA/ULTIMATE DEVELOPMENT		
OFA BEYOND THRESHOLD		

DEVIATION FROM DESIGN STANDARDS

ITEM	STANDARD	EXISTING	FUTURE

BUILDING TABLE

BUILDING NAME	ELEVATION
EXISTING EQUIPMENT BUILDING (TO BE MOVED)	105.7
EXISTING STORAGE BUILDING (TO BE REMOVED)	95.9
EXISTING ELECTRICAL EQUIPMENT ENCLOSURE	95.7
EXISTING WIND CONE	102.0
EXISTING SCHOOL FACILITIES	113.8
EXISTING SCHOOL FACILITIES	106.3
EXISTING FUEL STORAGE TANKS (SCHOOL FACILITIES)	97.3
FUTURE EQUIPMENT BUILDING	
FUTURE ELECTRICAL EQUIPMENT ENCLOSURE	
FUTURE FUEL STORAGE TANKS	

ELEVATIONS ARE GIVEN IN FEET.

DESIGN G.R.
DRAWN C.A.B.
CHECKED D.H.

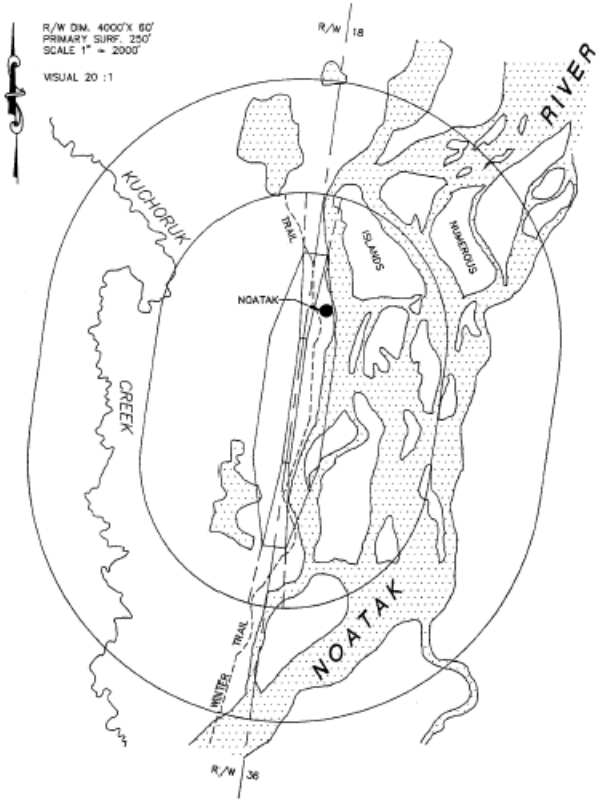
BY	DATE	REVISIONS
	8/31/88	FAA APPROVED

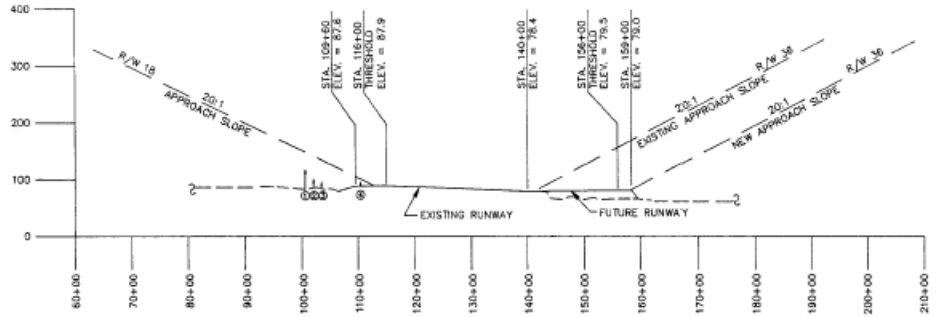
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION–WESTERN DISTRICT–DESIGN & CONSTRUCTION–AVIATION
APPROVED Daniel D. Urbach DATE 3-3-94
DANIEL D. URBACH, P.E. AIRPORT DESIGN GROUP CHIEF

THIS DRAWING SUPERCEDES ALP DATED 7/24/86

NOATAK AIRPORT
AIRPORT LAYOUT PLAN

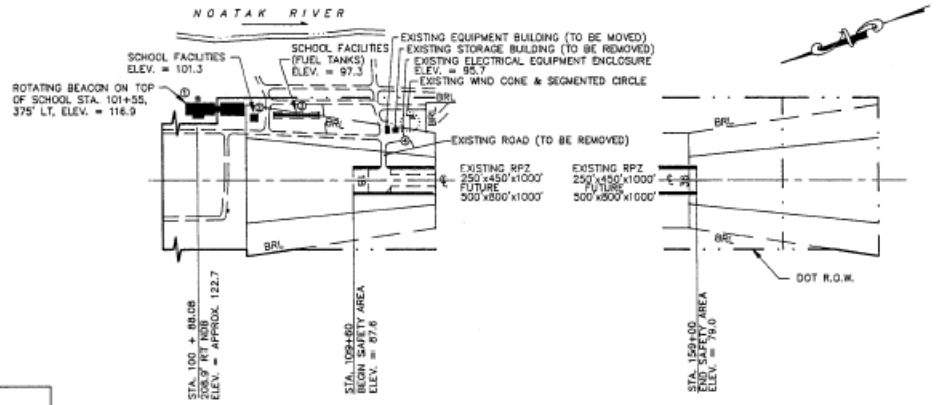
SHEET 1 OF 3





RUNWAYS 18 & 36 APPROACH SLOPES

SCALE: HORZ. 1"= 1000'
VERT. 1"= 100'



PLAN VIEW OF RPZ'S

SCALE: 1"=300'

FAR PART 77 PENETRATIONS

NO.	STRUCTURE	R/W LOCATION	ELEV.	PENETRATIONS

DEVIATIONS FROM STANDARD

ITEM	STANDARD	EXISTING	ULTIMATE

* NOTE: HORIZONTAL CONTROL BASED ON NAD 1927.

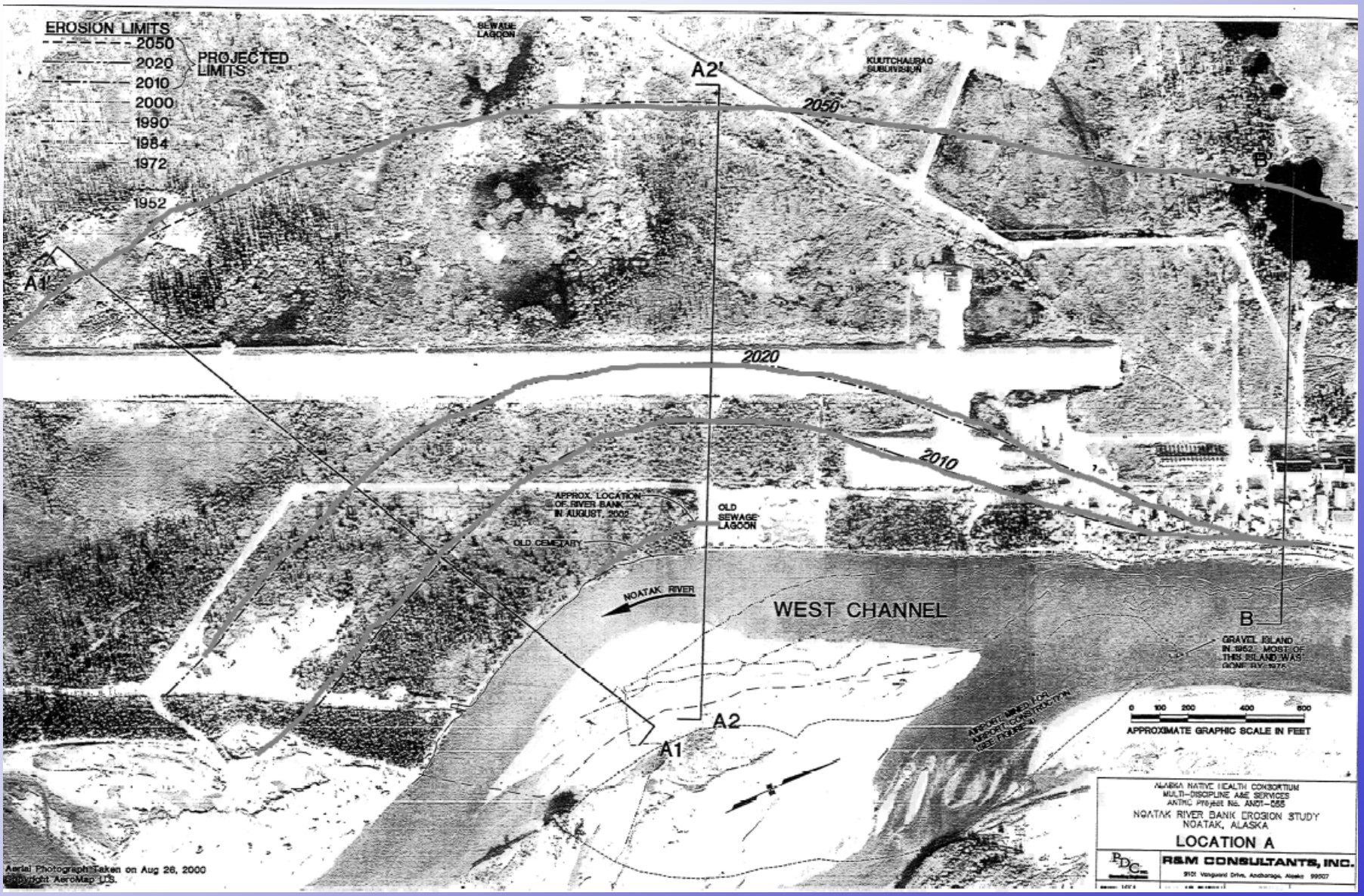
DESIGN GR
DRAWN C.A.B.
CHECKED D.H.

BY	DATE	REVISIONS
	8/21/98	FAA APPROVED

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION–WESTERN DISTRICT–DESIGN & CONSTRUCTION–AVIATION
APPROVED Daniel D. Urbach DATE 3-3-98
DANIEL D. URBACH, P.E. AIRPORT DESIGN GROUP CHIEF

NOATAK AIRPORT
OBSTRUCTIONS & AIRPORT AIRSPACE

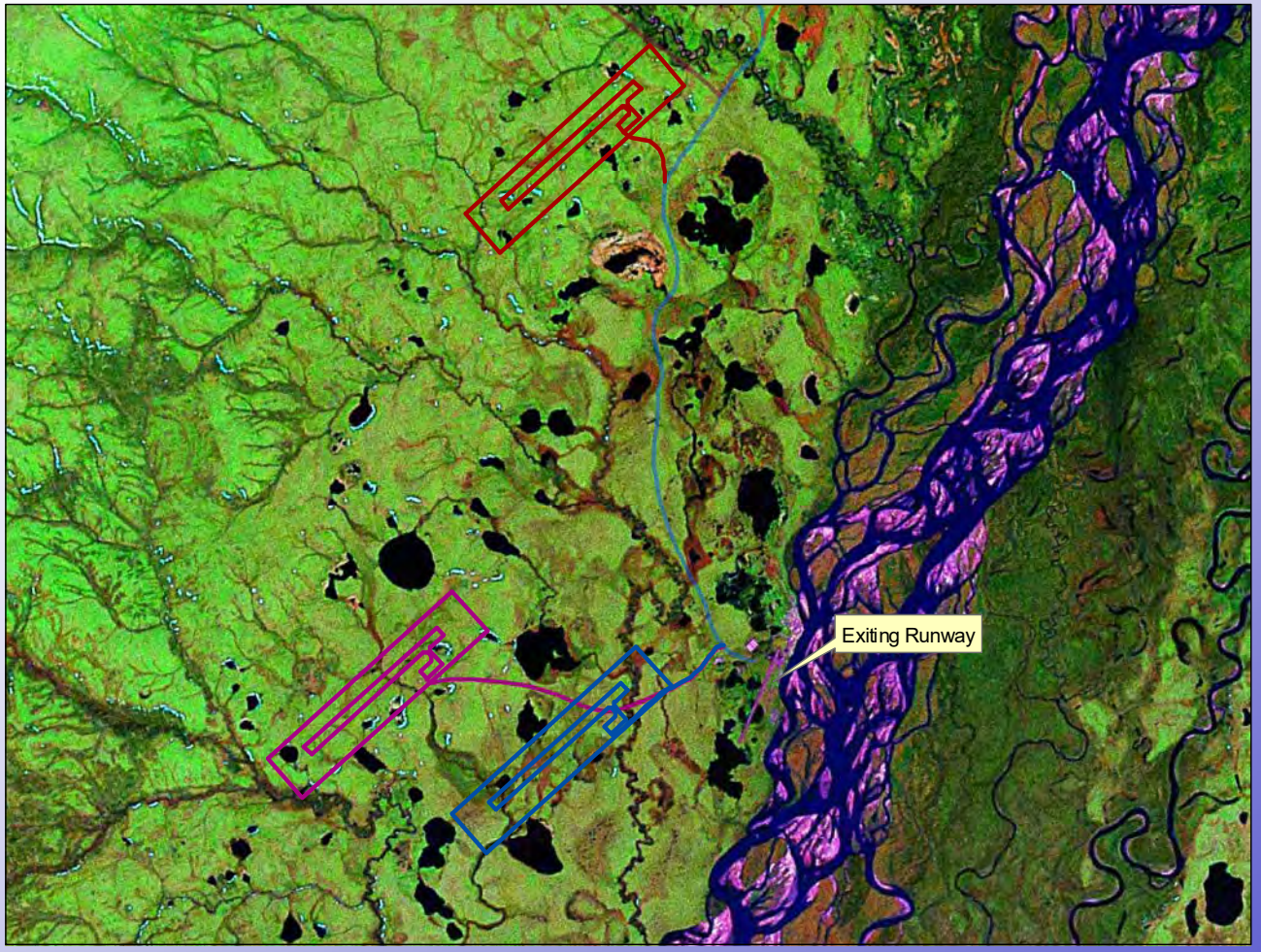
SHEET 2 OF 3


EROSION LIMITS
2050
2020
2010
2000
1990
1984
1972
1952
PROJECTED LIMITS
SEWAGE LAGOON
KIUTCHAUERAQ SUBDIVISION
A2'
2050
B'
A1'
2020
2010
APPROX. LOCATION OF RIVER BANK IN AUGUST, 2002
OLD SEWAGE LAGOON
OLD CEMETARY
NOATAK RIVER
WEST CHANNEL
B
GRAVEL ISLAND IN 1962. MOST OF THIS ISLAND WAS
A2
A1
0 100 200 400 800
APPROXIMATE GRAPHIC SCALE IN FEET
ALASKA NATIVE HEALTH CONSORTIUM
MULTI-DISCIPLINE A&E SERVICES
ANTHC Project No. ANST-058
NOATAK RIVER BANK EROSION STUDY
NOATAK, ALASKA
LOCATION A
R&M CONSULTANTS, INC.
9101 Vanguard Drive, Anchorage, Alaska 99507
Aerial Photograph Taken on Aug 26, 2000
Copyright AeroMap U.S.

Alaska Department of Transportation and Public Facilities

Noatak Road and Airport

Preliminary Airport Options



Airport Options

- A1
- A2
- A3

Source of Data: 2000 Landsat Imagery (NASA)

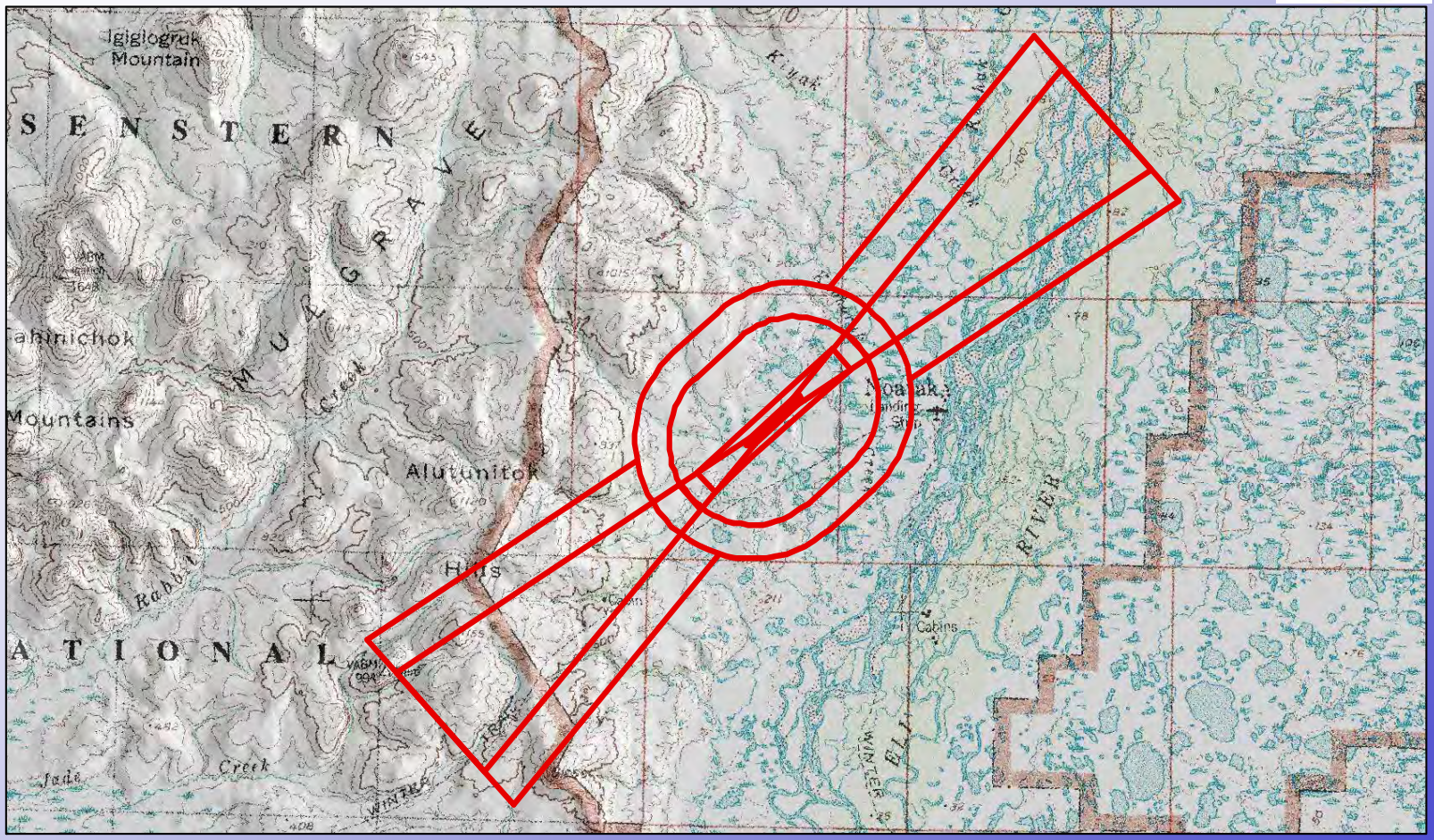
All Runway Alignments are preliminary - based on 1986 wind data. Recent wind data has been collected and archived by the National Climate Data Center since 1998. DOT&PF is currently acquiring this data. The recent data will be used in determining the best alignment for the proposed runway.

N W E S

Miles

0 0.3 0.6 1.2 1.8 2.4

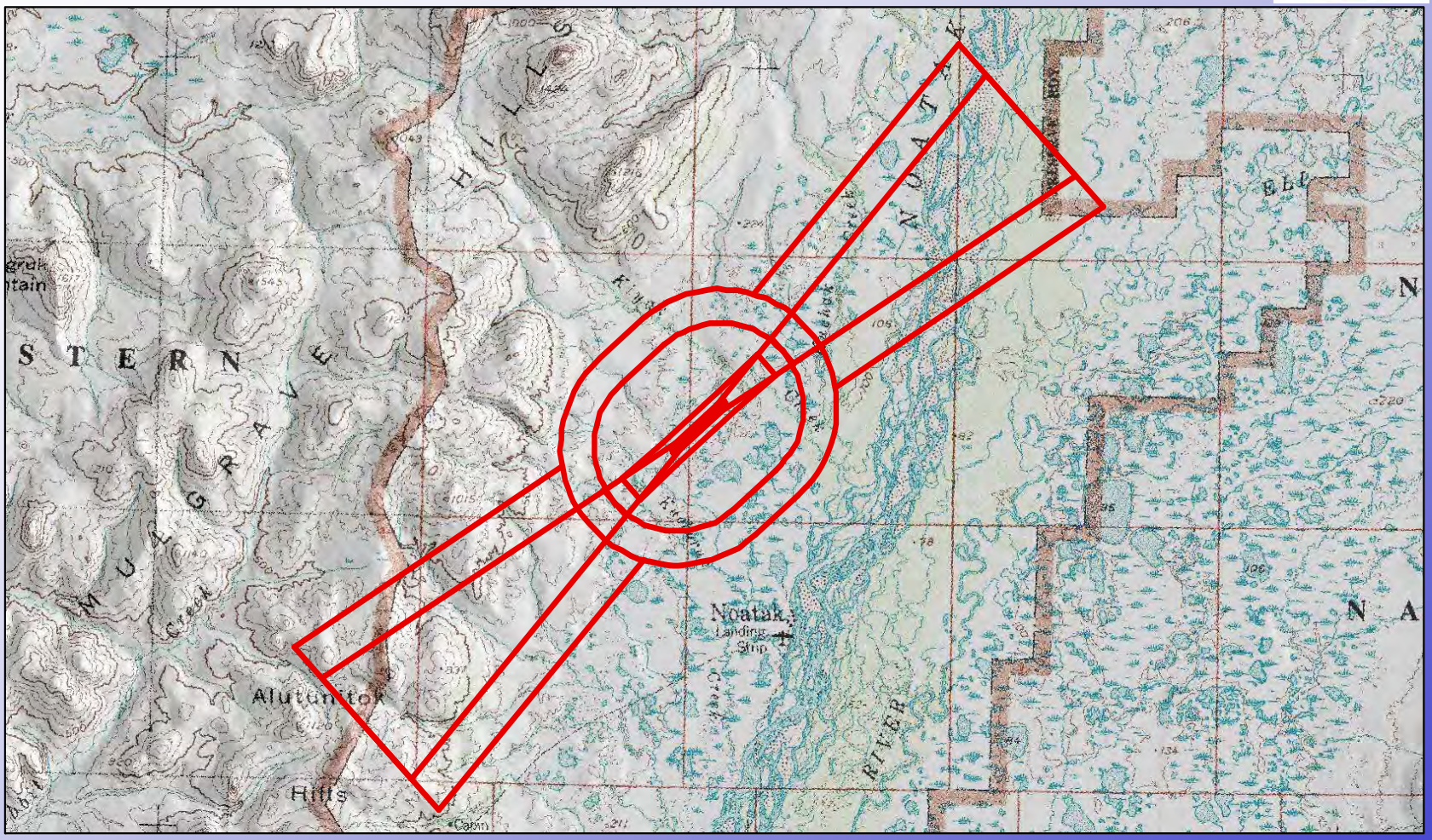
Preliminary Airspace
Option 1



Note:
This drawing details the FAR Part 77 Airspace surfaces required for the proposed option. These surfaces are based on Quad-Map level data, and should be considered preliminary.

0 1 2 4 6 8 Miles

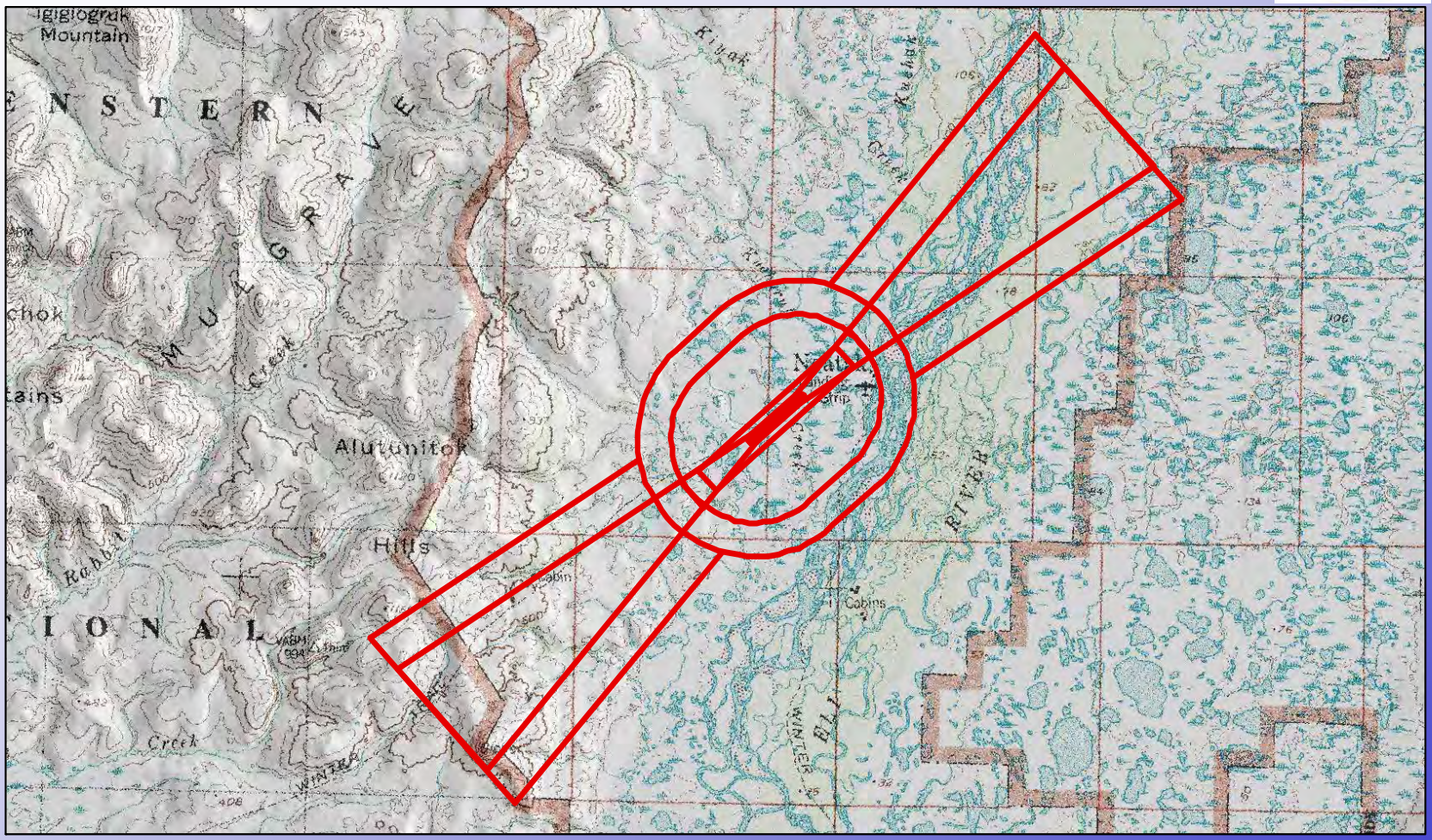
Preliminary Airspace
Option 2



Note:
This drawing details the FAR Part 77 Airspace surfaces required for the proposed option. These surfaces are based on Quad-Map level data, and should be considered preliminary.

0 1 2 4 6 8 Miles

Preliminary Airspace
Option 3



Note:
This drawing details the FAR Part 77 Airspace surfaces required for the proposed option. These surfaces are based on Quad-Map level data, and should be considered preliminary.

Economic Study


Questions?

Noatak Road and Airport

Public Meeting Sign-In Sheet

Noatak

Thursday-November 18, 2004

Name	Mailing Address	Phone	E-Mail
Lola Arey	Box 52 Noatak AK 99761	(907)-485-2328	arey-wtk@msn.com
Enoch Mitchell Sr	Box 85	485-2175	
Jori Booth	Box 78	485-2043	
Alex Danney C	Box 190	∅	∅
Eileen Foster	Box 68	∅	∅
Linda Burns	Box 57	∅	∅
Emma A. Adams	Box 71	485-2145	noatak_kid11@hotmail.com
Eunice Curtis	Box 187	485-2214	
Doralynn Curtis	Box 187	485-2214	
Ezra Curtis	Box 187	485-2214	
Eva Onalek	Box 98	485-2361	
Alice L Adams	Box 51	2200	
Amy Luther	Box 117	2354	
Brian Walton	Box 26	2340	
Louise Sherman	PO Box 97 Noatak AK		
Roger Mitchell Jr	PO Box 64 Noatak AK	485-2257	
Kitty Bucklun	Box 86 Noatak AK 99761		
Rhoda Sours	Box 17 Noatak AK 99761	485-2211	
	Box 30 Noatak AK 9976	485-2191	
	Box 36 Noatak AK 99761	485-2409	

Noatak Road and Airport

Public Meeting Sign-In Sheet

Noatak

Thursday-November 18, 2004

Name	Mailing Address	Phone	E-Mail
[illegible]	BOX 12	485-2375	
Benjamin P Arnold	POBox 17 Noatak 99761	1852211	Riverrider_2211 @hotmail.com
Carl Walton	Box 30 NOATAK AK 99761	485-2191	
Stella Shiedt	Box 45 Noatak, AK 99761		
Jana Adams	Box 25 Noatak AK 99761	485-2380	
Ralph Stalker	Box 16 Noatak AK 99761	485-2415	
Roger Mitchell SR	Box 64 NOATAK AK 99761	4852287	
Carl Wilson	Box 84 Noatak AK 99761		
MYRA NORTON	Box 92 NTK, AK 99761		
Hilda Booth	Po Box 24 Noatak, AK	485 2116	hilda.booth@noatak.org
Vicky Mitchell	Box 113 Noatak, AK 99761	485 2206	Vicky.mitchell@noatak.org
Minnie Stalker	BOX 18 Noatak, AK-99761	485-2113	Rosa.stalker@noatak.org
Violet Mitchell	Box 85 Noatak, AK 99761	485-2103	Violet.mitchell@noatak.org
Ben G Sherman	Box 96 Noatak AK 99761		Benny 99761@fab...com
JUSTIN SCHAEFFER	Box 1, NOATAK, AK 99761	485-2202	
Donald Booth Sr	Box 37 NOATAK AK 99761	485-2208	
Lois L. Sheldon	Box 77 Noatak, AK 99761	485-2297	LSheldon@noatak.org
Herbert Onalik Jr	Box 23 NOATAK AK 99761		
DIANE J. DOWNEY	Box 83 NOATAK, Alaska 99761	907(485-2325	
Mickey G. Ashby	Box 88 Noatak, Alaska 99761	(907) 485-2052	
Edna R. Bailey	BOX 105 NOATAK AK 99761	485-2032	Bailey21.2004@hotmail.com
Margaret Walton	Box 30 Noatak, AK 99761	485-2191	walton_21@hotmail.com

Noatak Road and Airport
Public Meeting Sign-In Sheet
Noatak
Thursday-November 18, 2004

Name	Mailing Address	Phone	E-Mail
William Booth	Box 113 Noatak 99761		— —
Roland Booth	Box 75 Noatak Ak	485-2241	papaikaag@hotmail
Gretchen Booth	P.O Box 75, Noatak, Ak	485 2243	gbooth@maniilaq.org
Pauline Vestal	Box 72 Noatak, Ak	485-2264	pauline.vestal@maniilaq.org
Bernice Monroe	Box 2 " "	485-2209	
Eugene Monroe Sr	Box 02 Noatak, Ak 99761	485-2209	—
Herbert Walton	Box 111 Noatak Ak 99761	485-2177	herbert.walton@[illegible]
Lucy D. Mills	Box 45 Noatak ak, 99761	485-2014	
[illegible] Booth	Box 22 Noatak ak 99761	485-2138	
Peter Luther Sr	Box 70 Noatak ak 99761	485-2033	
[illegible]	Box 44 Noatak ak 99761		
Beatrice Miller	PO Box 189 Noatak 99761	485-2034	beahappy56@hotmail.com
Priscilla Booth	PO Box 34 Noatak 99761	485-2355	⊘
Agnes [illegible]	Box 10 Noatak 99761	4852461/3	
[illegible]	P.O. Box 32 Noatak, Ak	485-2118	
Mary Arey	P.O. Box 110 Noatak, Ak	485-2121	N/A
Barbara [illegible]	P.O Box 50 Noatak Ak	4852314	[illegible]
Emmaline Downey	PO Box 6 Noatak Ak	485-2294	
John Penn	Box 35		
[illegible] Booth Jr	Box 94 Noatak AK 99761	N/A	~
Joey D Walton	PO Box 30 " "	(907) 485-2191	
Melford Booth	P.O. Box 66	485-1952	?

Noatak Road and Airport
Public Meeting Sign-In Sheet
Noatak
Thursday-November 18, 2004

Name	Mailing Address	Phone	E-Mail
Fred Luther Sr	BOX 107 WTK AK 99761		
Ruth Luther	BOX 107 Noatak AK 99761		rluther@noatak.[illegible]
Joe Carter	Box 87 Noatak, Ak 99761	(907) 485-2214	
Jacob Booth Jr	Box 22 Noatak, AK 99761	(907) 485 (2191) (2138)	jnbdr23@yahoo.com
Nora Johnson	Box 108 Noatak AK 99761		
Jerry L Amy	Box 13 Noatak AK 99761	(907) 485-2144	
Daniel Booth	Box 78 Noatak AK 99761	(907) 485-2033	
Chucky Mitchell	Box 85 NOATAK, AK 99761	(907) 485-2175	
Floyd Ulrich	SWAMP St. Box 54	485-2272	FW.com
Leslie D Burns	P.O 15 NOATAK AK 99761	485-2197	
Enoch J Mitchell	Box 85 Noatak, AK 99761	485-2015	
Lucy Adams	Box 71 Noatak		
Loagie Sheldon	Box 77 "	485-2277	
Daniel Onalik	Box 98 "	485-2361	
Woodrow Wilson Jr	Box 89		
Margaret Walker	Box 30 Noatak	485-2191	
	Box 43 Noatak		
Jeremy Avey	Box 52 Noatak	485-2328	
Stella Mitchell	Box 120 Noatak AK 99761	485-2044	
Lena Walton	Box 26 Noatak, AK 99761		
Brandon Booth	Box 24 Noatak, AK 99761	485-2276	
[illegible] Mitchell	Box 112 Noatak AK 99761	485-2007	

NATIVE VILLAGE OF NOATAK
TRIBAL ENROLLMENT
2001

	NAME	
1	ADAMS JR., FRANK	✓
2	ADAMS JR., VERNON	
~~3~~	~~ADAMS, JR., VIRGIL DAVID~~	
4	ADAMS SR., FRANK	✓
5	ADAMS SR., VERNON	✓
3	ADAMS SR., VIRGIL	✓
6	ADAMS, ADAM JOHN	
7	ADAMS, ALICE E.	✓
	~~ADAMS, BILLIE JEAN~~	
8	ADAMS, BESSIE	✓
9	ADAMS, CARRIE	
10	ADAMS, CYRUS D.	✓
11	ADAMS, ELSIE JUNE	
	~~ADAMS, ETHEL EVA~~	
12	ADAMS, GRACE	✓
13	ADAMS, JAMES T.	✓
14	ADAMS, JANICE L.	
15	ADAMS, JANE	✓
16	ADAMS, MICHAEL D.	✓
17	ADAMS, MYRTLE S.	✓
18	ADAMS, ROGER D.	
19	AHVAKANA, EMMA A.	✓
20	AREY, HILDA	✓
21	AREY, JEREMY PETER	✓
22	AREY, JOSEPH J.	✓
23	AREY, MARY	✓
24	AREY, NED	✓
25	AREY, WILLIAM "BILLY"	✓
26	ARNOLD, BENJAMIN P.	✓
27	ARNOLD, DWIGHT	
28	ARNOLD, MARY	
29	ASHBY JR., ROLAND	✓
30	ASHBY SR., ROLAND	✓

NATIVE VILLAGE OF NOATAK
TRIBAL ENROLLMENT
2001

	NAME	
31	ASHBY, HELEN L.	✓
32	ASHBY, IDA J.	✓
33	ASHBY, JOANN	✓
34	ASHBY, MICKEY G.	✓
35	ASHBY, RUTH	✓
36	ASHBY, WILFRED R.	✓
37	BAILEY, BETSY R.	✓
38	BAILEY, BILL C.	✓
39	BAILEY, CHARLIE	
40	BAILEY, EDNA REBECCA	✓
41	BAILEY, LISHA EDNA	
42	BAILEY, PATRICIA S.	✓
43	BARGER JR., CHARLIE R.	
44	BARGER JR., JOHN	✓
45	BARGER SR., CHARLIE	✓
46	BARGER, BARBARA JANET	
47	BARGER, BESSIE	✓
49	BARGER, KIMBERLY	✓
	~~BARGER, MILDRED ESTHER~~	
50	BOOTH JR., ELWOOD	✓
51	BOOTH JR., JOHNSON	✓
52	BOOTH, MILDRED	✓
53	BOOTH SR., ROLAND T.	✓
54	BOOTH SR., WENDELL	✓
55	BOOTH, BRANDON P.	
56	BOOTH, CHARLA	✓
57	BOOTH, CHARLA APRIL Adams	✓
58	BOOTH, CHERYL BAILEY	
59	BOOTH, DOLLY D.	✓
60	BOOTH, DOLLY M.	
61	BOOTH, DONALD M.	
62	BOOTH, FRANK	✓
63	BOOTH, GENE N.	✓
64	BOOTH, GRETCHEN	✓

NATIVE VILLAGE OF NOATAK
TRIBAL ENROLLMENT
2001

	NAME	
65	BOOTH, HILDA J.	
66	BOOTH, IVAN J.	✓
67	BOOTH, JASON A.	✓
68	BOOTH, NORA	
69	BOOTH, PHILIP	✓
70	BOOTH, PRISCILLA	✓
71	BOOTH, THURSTON	
72	BOOTH, VERNON F.	
73	BOOTH, VICTOR C.	✓
74	BOOTH, WARREN	✓
75	BOOTH, WILLIAM K.	
76	BURNS JR., CHESTER	✓
77	BURNS, AMIL E.	✓
78	BURNS, LESLIE D.	✓
79	BURNS, LINDA LOU	✓
80	BURNS, MARTHA	✓
81	BURNS, MARY RUTH	✓
82	BURNS, SHAWN RAY	
83	BURNS, WHITTIER P.	✓
84	CARTER, WHITTIER P.	✓
85	DOWNEY, ALLEN C.	
86	DOWNEY, ADOLPH	✓
87	DOWNEY, DIANE J.	✓
88	DOWNEY, EMMALINE N.	✓
89	DOWNEY, MICHELLE M.	
90	DOWNEY, MYRA	✓
91	DOWNEY, NOAH	✓
92	DOWNEY, PAUL WESLEY	
93	DOWNEY, WALTER WAYNE	
94	FOSTER, EILEEN STELLA	✓
95	GOODRO, ELSIE P.	✓
96	GOODRO, STEVEN C.	
97	GOODRO, VERNON E.	✓
98	HENRY, AMELIA	

NATIVE VILLAGE OF NOATAK
TRIBAL ENROLLMENT
2001

	NAME	
99	HOWARTH SR., ELMER ✓	X
100	HOWARTH, KATHLEEN ✓	X
101	HOWARTH, ROBYN ✓	X
102	HUNNICUTT, JOSEPHINE ✓	X
~~103~~	~~JOHNSEN, AMELIA JANE~~	Give to Kitty
104	JONES, VELMA B.	
105	KIRK, ROBERT J. ✓	X
106	KIRK, TANYA MARIE ✓	X
107	LUTHER SR., FRED S. ✓	X
108	LUTHER, DELLA R. ✓	X
109	LUTHER, DAVID M.	
110	LUTHER, EVA SUE	
111	LUTHER, JOSEPH	OUT
112	LUTHER, MARY H. ✓	X
113	LUTHER, PETER ✓	X
114	LUTHER, RUTH M ✓	X
115	LUTHER, SUSIE ✓	X
116	MARSDEN, ROSELLA	
117	MCDONALD, EVA C. ✓	X
118	MILLER, BEATRICE M. ✓	X
119	MILLS JR., GILBERT	NOT Home
120	MILLS, AXEL ✓	X
121	MILLS, CHRISTINA H. ✓	X
122	MILLS, DAVID E. ✓	X
123	MILLS, ETHEL S.	*
124	MILLS, FLOYD ✓	X
125	MILLS, JANET N. ✓	X
126	MILLS, LUCY D.	
127	MILLS, PAULINE ✓	X
128	MILLS, PAULA	
129	MILLS, ROSE A.	*
130	MILLS, TAMARA S.	
131	MITCHELL, SR., ROGER ✓	X

33 41

NATIVE VILLAGE OF NOATAK
TRIBAL ENROLLMENT
2001

	NAME	
132	MITCHELL SR., ROBERT ✓	X
133	MITCHELL, BESSIE KAREN ✓	X
134	MITCHELL, ELI ✓	X
135	MITCHELL, ENOCH L. ✓	X
136	MITCHELL, GLADYS ✓	X
137	MITCHELL, HAROLD ✓	X
138	MITCHELL, LEELA D.	— OUT
139	MITCHELL, VICKY MARY ✓	X
140	MITCHELL, VIOLET J. ✓	X
141	MONROE JR., EUGENE	NOT HOME ✓
142	MONROE SR., EUGENE	— OUT
143	MONROE, BERNICE	— OUT
144	MONROE, EUGENIA ✓	X
145	MONROE, LYNDA ✓	X
146	MONROE, NORMAN F.	— Red Dog
147	MOO, MARGARET A. ✓	X
148	MOO, RONNIE LYNN ✓	X
149	MOO, SONNY ODIN	— OUT
150	NORTON SR., CYRUS ✓	X
151	NORTON SR., PAUL ✓	X
152	NORTON, ELLEN S. ✓	X
153	NORTON, GUSSIE ✓	X
154	NORTON, KEITH ✓	X
155	NORTON, MYRA PEARL	X
156	NORTON, VIOLA ✓	X
157	ONALIK, EVA M.	✓
158	ONALIK JR., GEORGE	— OUT
159	ONALIK JR., HERBERT ✓	X
160	ONALIK SR., FRANK ✓	X
161	ONALIK SR., HERBERT	— ✓
162	ONALIK, DANIEL E.N.	✓
163	ONALIK, EDITH J.	— ✓
164	ONALIK, EDMUND K.	— ✓
165	ONALIK, HANNAH	— ✓

34

20
21
22
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78

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21
22
78

37

NATIVE VILLAGE OF NOATAK
TRIBAL ENROLLMENT
2001

	NAME	
166	ONALIK SR., VICTOR T.	
167	ONALIK, VICTORIA W.	
168	PENN, AGNES T.	
169	PENN, HARRY C.	
170	PENN, DAVID JOHN JR	OUT
171	PENN, NOAH	
172	PENN, SARAH R.	
173	SAGE, AGNES DOLLY	
174	SAGE, CALEB	
175	SAGE, LENA KOLEAN	
176	SCHAEFFER, FREDERICA	OUT
177	SCHAEFFER, JUSTIN DAVID-ADAMS	
178	SHELDON, ROBERT J.	
179	SHELDON, LORENA	
180	SHERMAN JR, BENJAMIN J.	
181	SHERMAN SR., BENJAMIN	
182	SHERMAN, BENJAMIN G.	
183	SHERMAN, JANET	
184	SHERMAN, LOUISE S.	
185	SHERMAN, MARY P.	
186	SHERMAN, MICHAEL J. SR.	
187	SHERMAN, RACHEL A.	
188	SHY, CHRISTOPHER	
189	SHY, EVELYN	
190	SHY, JERRY L.	
191	SHY, JOSEPHINE M.	
192	SHY, LUCY NORMA	
193	SHY, MATTHEW JR.	
194	SHY, STELLA	
195	SMITH JR., ISAAC	
196	SMITH, JACQUELYN ANN	
197	SOURS, MARY LOU	
198	SOURS-KELSEY, RHODA N.	
199	STALKER SR., RALPH T.	

NATIVE VILLAGE OF NOATAK
TRIBAL ENROLLMENT
2001

	NAME	
200	STALKER, ROSA MINNIE	✓
201	WALTON JR., JONAH	✓
202	WALTON SR., HERBERT	✓
203	WALTON SR., JONAH	✓
204	WALTON, CONNIE	✓
205	WALTON, DAVID	✓
206	WALTON, DAVID ANDREW	
207	WALTON, EUNICE	✓
208	WALTON, GERALD	✓
209	WALTON, JOEY D.	
210	WALTON, LENA G.	✓
211	WALTON, LORETTA	✓
212	WALTON, MARGARET	✓
213	WALTON, MATTHEW	✓
214	WALTON, PAUL F.	✓
215	WALTON, STELLA	✓
216	WESLEY JR. FLOYD ✓	X
217	WESLEY, PERCY J. ✓	X
218	WESLEY, BARBARA K.	✓
219	WESLEY, CHARLES ✓	X
220	WESLEY, EMANUEL FRED	✓
221	WESLEY, GORDON JIM ✓	X
222	WESLEY, ISABELLE ✓	X
223	WESLEY, MARY ✓	X
224	WESLEY, NELLIE CAROL ✓	X
225	WESLEY, PAUL B. ✓	X
226	WESLEY, SUSIE W. ✓	X
227	WESLEY-WOODS, PETER ✓	X
228	WILLIAMS, JOHN JACK ✓	X
229	WILSON, BERNICE	Don't want to
230	WILSON, CARL K. ✓	✓
231	WILSON, PEGGY ✓	X
232	WILSON, WALTER ✓	X
233	WILSON, WOODROW JR. ✓	X

15

as

NATIVE VILLAGE OF NOATAK
TRIBAL ENROLLMENT
2001

	NAME	
234	WOODS, JANET NELLIE	✓
235	WOODS, MARTHA MARY	

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good. lower cost on groceries + gas + oil.

What road option, if any, do you prefer? Why?

Rte Shorter, less maintenance

Do any of the creeks along the road options flood or build up ice in the wintertime?

not that i-know of, but anywhere you put culverts you will have ice build up.

Airport

Is a new airport in Noatak good or bad? Why?

good. ~~Lower~~ Noatak need airport for mail + passenger flights

What airport option do you prefer? Why?

A-1 closer to ~~airport~~ town

If a larger airport was built, would that be better or worse?

better. if Ketzebue is socked in jets could be ~~apt~~able to land.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good. Would be good to go to berry places where we never go to when it's time pick and may be people ~~tweathered~~ in at the mine would be able to ride home.

What road option, if any, do you prefer? Why?

R-1 Closer + shortcut to the Red Dog Road.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Yes.

Airport

Is a new airport in Noatak good or bad? Why?

Good. Because in the long run our airport will erode.

What airport option do you prefer? Why?

Away from the dumpsite. Because there's too many raven, seagulls. on the path.

If a larger airport was built, would that be better or worse?

It would be! better. Maybe then all the things we order from Anchorage would go straight to Noatak

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good
Gas and Stove oil will be
Cheaper also the groceries.

What road option, if any, do you prefer? Why?

A-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Don't Know

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A2 Closer

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good.

What road option, if any, do you prefer? Why?

R2

Do any of the creeks along the road options flood or build up ice in the wintertime?

Both

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A3

If a larger airport was built, would that be better or worse?

Better.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road (good) or bad? Why?

Bring Jobs to our community (hopefully) Be good to have access TO The Road at all times,

What road option, if any, do you prefer? Why?

R-1 - Shorter

Do any of the creeks along the road options flood or build up ice in the wintertime?

No Idea, Do some studies

Airport

Is a new airport in Noatak (good) or bad? Why?

Economic's, hopefully lower the cost of living in NTC

What airport option do you prefer? Why?

A-3

If a larger airport was built, would that be better or worse?

hopefully will make life easier to live here in ATL

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Bad thing. Would cut the caribou migration paths down.

What road option, if any, do you prefer? Why?

None, don't need red dog at Noatak

Do any of the creeks along the road options flood or build up ice in the wintertime?

NO Springtime though.

Airport

Is a new airport in Noatak good or bad? Why?

Dont need another runway

What airport option do you prefer? Why?

None

If a larger airport was built, would that be better or worse?

Don't matter.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

No? that is a break away for civilized people and could would be expandable for our community of Noatak

What road option, if any, do you prefer? Why?

road to Noyorak only 10 miles down river and that would be our own road.

Do any of the creeks along the road options flood or build up ice in the wintertime?

what road? to Noyorak not much of flood here

Airport

Is a new airport in Noatak good or bad? Why?

Yes! because of erosion wearing & taking of properties, and a airport should be explainable for Noatak

What airport option do you prefer? Why?

up behind high land

If a larger airport was built, would that be better or worse?

That might be good for big aircraft that might be helpfull for our community

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

What road option, if any, do you prefer? Why?

R3 + R3A

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

~~A5~~ do to Erosion Id prefer A3

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good, so we can recieve large freight thru barges from there

What road option, if any, do you prefer? Why?

?

Do any of the creeks along the road options flood or build up ice in the wintertime?

?

Airport

Is a new airport in Noatak good or bad? Why?

good, erotton will reach the one we have now

What airport option do you prefer? Why?

?

If a larger airport was built, would that be better or worse?

better, more freight planes to choose from

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

I think it would be a good idea for us Village peoples so at least our Store oil & Gas would be Cheaper also would think of getting dryed good thru them.

What road option, if any, do you prefer? Why?

to 0+2. Most of us would get to-gether & get our Stuff (food-Clothes-Eg) Much Cheaper.

Do any of the creeks along the road options flood or build up ice in the wintertime?

I have 0 idea.

Airport

Is a new airport in Noatak good or bad? Why?

I think it good. We will need to more due to erision!.

What airport option do you prefer? Why?

Building away from the River.

If a larger airport was built, would that be better or worse?

I think it would be good so that someday down the line we might start having good businesses. So a big Airport would be good.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, for the People with husbands and wives.

What road option, if any, do you prefer? Why?

I would Rather Go through the Stake trail.

Do any of the creeks along the road options flood or build up ice in the wintertime?

I wouldn't Know Probably

Airport

Is a new airport in Noatak good or bad? Why?

Good, for the Workers At Red Dog.

What airport option do you prefer? Why?

Ash phalt, less Dusty

If a larger airport was built, would that be better or worse?

Better, I hope

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

it would be awful nice to be getting better prices on our stuff ie. stove oil gas goods etc.

What road option, if any, do you prefer? Why?

R2 safest route

Do any of the creeks along the road options flood or build up ice in the wintertime?

any or all of em floods from time to time

Airport

Is a new airport in Noatak good or bad? Why?

to see those new lear jets fly in here "cool man"

What airport option do you prefer? Why?

south side. closer to people

If a larger airport was built, would that be better or worse?

better more fuel.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

less cost of fuel or stove oil

What road option, if any, do you prefer? Why?

2= its quicker and shorter route

Do any of the creeks along the road options flood or build up ice in the wintertime?

Not that I know of

Airport

Is a new airport in Noatak good or bad? Why?

good because of the cross winds

What airport option do you prefer? Why?

any

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Maybe good; Only if we are able to use the Road at all times, all 4 seasons

What road option, if any, do you prefer? Why?

The Shortest route #2 - connecting to the Red dog Road approx 30 miles

Do any of the creeks along the road options flood or build up ice in the wintertime?

Possibly you will need a Few culverts

Airport

Is a new airport in Noatak good or bad? Why?

Its good, because of the erosion that is depleating large area of land every year

What airport option do you prefer? Why?

The one For 737s

If a larger airport was built, would that be better or worse?

Better, Tourism For area economy growth, especially in the Summer months with all the rafters coming down the Nooksak River

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

I think it would be good. The benefits of cheaper fuel and groceries, Lumber, furniture, parts and ATV's & Sno-gos would be a whole lot cheaper and our economy here in Noatak would flourish and probably create jobs for the local people.

What road option, if any, do you prefer? Why?

The one closer to the River, we could have easy access to the Cemetary and we could also ride up to the hills where the Caribou cross.

Do any of the creeks along the road options flood or build up ice in the wintertime?

I wouldn't know about the flood but they cartainly build up ice, but not to a danger part - it's been safe.

Airport

Is a new airport in Noatak good or bad? Why?

I think it would be excellent! Huge items we order from the South of Alaska would come straight to Noatak and it would be good business for Airlines - like Alaska Airlines, Northern Air Cargo, Frontier Air - etc.. if we have direct flights to down South -

What airport option do you prefer? Why?

The one farthest away from the Village. Noise is not what we need in a remote village. A good access road to the airport would have to be wide because of traffic from town-airport.

If a larger airport was built, would that be better or worse?

Better, as long it's not too close to the Village where noise would be the factor. But I am 100% for a larger airport here.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, might get cheaper fuel from port

What road option, if any, do you prefer? Why?

A-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Some Creeks do

Airport

Is a new airport in Noatak good or bad? Why?

good - but Need Cross wind Runway ~~Option 1~~

What airport option do you prefer? Why?

option 1

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

The road connecting Noatak to Red Dog Mine is good. Why? Because it will help us economically.

What road option, if any, do you prefer? Why?

The blue road. Close to Red Dog Mine and could go hunting or fishing w/ Truck.

Do any of the creeks along the road options flood or build up ice in the wintertime?

I don't know.

Airport

Is a new airport in Noatak good or bad? Why?

A new airport in Noatak is good. Why? Cheaper groceries and oil or gas.

What airport option do you prefer? Why?

A2 why? close to the mine and that way some of our Red Dog workers can truck home.

If a larger airport was built, would that be better or worse?

Better.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Very Good - The cost of fuel and other goods will be more affordable. The opportunities for the people of Noatak to become even more industrious is there

What road option, if any, do you prefer? Why?

R3 - Less creeks to cross and away from the tree'd areas. Also R3 will keep us out of the Nat'l park

Do any of the creeks along the road options flood or build up ice in the wintertime?

All the creeks are pretty shallow - any creek can have a bit of overflow

Airport

Is a new airport in Noatak good or bad? Why?

Good - 1. To get away from the erosion along the river. 2. The larger airport will help with the infrastructure of roads/mine traffic/freight. Residents of Noatak can take advantage of good economic development.

What airport option do you prefer? Why?

A3 - Still close enough to the village for traveling by plane - especially in the winter.

If a larger airport was built, would that be better or worse?

Better - eventually it will provide better service for the next generations to come.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good, haveing fuel by barge would save us alot of money.

What road option, if any, do you prefer? Why?

R1 Shorter Way I guess

Do any of the creeks along the road options flood or build up ice in the wintertime?

have no Idea

Airport

Is a new airport in Noatak good or bad? Why?

good, haveing a bigger runway would be safe if Alaska Air Lines would have to land somewhere.

What airport option do you prefer? Why?

A 2 away from the bank.

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good. it will help our gas and Store oil price's to go lower for our village

What road option, if any, do you prefer? Why?

R3, because it will be off our Natural Monument. and its only 3 to 5 years

Do any of the creeks along the road options flood or build up ice in the wintertime?

NO

Airport

Is a new airport in Noatak good or bad? Why?

~~Bad~~ Good. because Right now our one is that the plones go really close to over our Homes.

What airport option do you prefer? Why?

~~A2~~ A.3 because it is more closer to our college

If a larger airport was built, would that be better or worse?

Better, more lower freight involves.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

OIL & GAS prices would go down Freight Such as Lumber & Building Supplies would go down

What road option, if any, do you prefer? Why?

R3A we don't have to wait for the monument approval.

Do any of the creeks along the road options flood or build up ice in the wintertime?

yes all creeks build up with ice

Airport

Is a new airport in Noatak good or bad? Why?

we need to move it away from the town our existing runway goes over our village if any plane have engine problem it will fall on the houses

What airport option do you prefer? Why?

Knutchavrag A3

If a larger airport was built, would that be better or worse?

better for our Community And it would benefit red dog in their down days

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

THE ROAD IS A GOOD IDEA: ALLOW FOR EASIER FUEL TRANSPORT, AND BARGED GOODS FROM PORTSITE TO RED DOG WOULD BE CHEAPER FOR THE PEOPLE, TO GET TO NOATAK.

What road option, if any, do you prefer? Why?

R3 + R32

Do any of the creeks along the road options flood or build up ice in the wintertime?

DON'T KNOW.

Airport

Is a new airport in Noatak good or bad? Why?

A NEW AIRPORT IS A GOOD IDEA: THE CURRENT AIRPORT MAY NOT LAST TOO MUCH LONGER DUE TO EROSION.

What airport option do you prefer? Why?

A3, STILL CLOSER TO TOWN?

If a larger airport was built, would that be better or worse?

A LARGER AIRPORT WOULD BE BETTER: WE CAN HAVE A PAVED RUNWAY TO ALLOW LARGER AIRCRAFT TO LAND HERE. GOOD FOR ECONOMY!

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, it will be useful to get fuel & help the prices go down. Also the village can use the road for subsistence purposes, like picking berries, hunting & fishing

What road option, if any, do you prefer? Why?

RC - it will help us at fishing & hunting time

Do any of the creeks along the road options flood or build up ice in the wintertime?

I don't know, but if we watch them we will know

Airport

Is a new airport in Noatak good or bad? Why?

good, it will help us in many ways

What airport option do you prefer? Why?

A2 - it is far enough for the noise & dust

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, road to Red Dog mine. gas + oil would be cheaper. + bring jobs to the community, but if a bigger Airport is build, then we don't need road to Red Dog.

What road option, if any, do you prefer? Why?

option R1A it would be closer, + NOT Disturb our Surroundings.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Not if a by pass pipe be put under the road going across the creek.

Airport

Is a new airport in Noatak good or bad? Why?

good, it would be good for big planes to be landing in Noatak. + bring jobs to the village

What airport option do you prefer? Why?

Option II. Further from villages & clear of objects above ground.

If a larger airport was built, would that be better or worse?

better for a big airport. then we would not worry about a road to red dog.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good - for fuel Prices going down for Noatak
Bad - for Vegetation & waterfowl & other
animal migration Patterns.

What road option, if any, do you prefer? Why?

R-3 it would be away from the Noatak River.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Pretty much all major creeks flood
in the Spring Season.

Airport

Is a new airport in Noatak good or bad? Why?

Good - All plain to see that the erosion
is getting closer every year.

What airport option do you prefer? Why?

A1 - It would be farther Back & have a closer access for Norfolk.

If a larger airport was built, would that be better or worse?

depends on what you would use it for.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

[redacted] both, because it will be easier for Red Dog because of the weather, and bad for Noatak, because too many people will try or might to move to Wtk

What road option, if any, do you prefer? Why?

[redacted] R3, directly to Noatak

Do any of the creeks along the road options flood or build up ice in the wintertime?

IDK

Airport

Is a new airport in Noatak good or bad? Why?

good, because our current airport is getting close to the erosion bank.

What airport option do you prefer? Why?

A3, not to far away to WTC

If a larger airport was built, would that be better or worse?

not sure probable worst, because of the lands ecosystem

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good for lower freight/fuel charges if rather than flying.

What road option, if any, do you prefer? Why?

R2

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

very much needed, due to erosion.

What airport option do you prefer? Why?

A3; ~~A2~~ closer to town.

If a larger airport was built, would that be better or worse?

~~Good~~ better for freight/fuel - bigger airport, bigger planes. Good for Red Dog travel as well, create more jobs

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good - so we ladies can have easier access to berry picking

What road option, if any, do you prefer? Why?

R-1 Road and trail to Kivalina

Do any of the creeks along the road options flood or build up ice in the wintertime?

Don't know

Airport

Is a new airport in Noatak good or bad? Why?

Good - so someday will have gas at a cheaper price.

What airport option do you prefer? Why?

A-1 seems closer to the upcoming new school.

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good- The village might have lumber fuel + gas cheaper

What road option, if any, do you prefer? Why?

Winter Trail To Red dog Road - closer

Do any of the creeks along the road options flood or build up ice in the wintertime?

I don't think They flood too bad just in The spring

Airport

Is a new airport in Noatak good or bad? Why?

Good, Riper getting close to old air port -

What airport option do you prefer? Why?

Large airport for other uses

If a larger airport was built, would that be better or worse?

Better, for future use for freight

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good - We have people working there - probably some people if possible they would go buy fuel

What road option, if any, do you prefer? Why?

Noatak - Cemetary - we need that so it will be easier to go w/ Hunia's or Siu-go's if need to.

Do any of the creeks along the road options flood or build up ice in the wintertime?

not sure I don't usually ride out side of the village

Airport

Is a new airport in Noatak good or bad? Why?

good - It's scary when big Planes fly over our village.

What airport option do you prefer? Why?

the new one they were gonna make - so our planes won't fly over our village anymore.

If a larger airport was built, would that be better or worse?

better -

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, its options for our community.

What road option, if any, do you prefer? Why?

R1 short cut to the road

Do any of the creeks along the road options flood or build up ice in the wintertime?

Dont know

Airport

Is a new airport in Noatak good or bad? Why?

Good, it's will be good option for our community, for freight, one way to Anchorage.

What airport option do you prefer? Why?

A3 closer to town!

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good ?

What road option, if any, do you prefer? Why?

R1a closer to Port

Do any of the creeks along the road options flood or build up ice in the wintertime?

?

Airport

Is a new airport in Noatak good or bad? Why?

good ?

What airport option do you prefer? Why?

A3 Closer to village

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

I think that it would be good because it would really help us here in the village alot. Like especially with the gas.

What road option, if any, do you prefer? Why?

I would pick R1 because its the closest and fastest way

Do any of the creeks along the road options flood or build up ice in the wintertime?

no I don't think so.

Airport

Is a new airport in Noatak good or bad? Why?

Yes because the one we have is old and it would be better for us all here.

What airport option do you prefer? Why?

I would prefer A1 because its the closest one, the other ones are too far.

If a larger airport was built, would that be better or worse?

I think that it would be better.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good

What road option, if any, do you prefer? Why?

R1

Do any of the creeks along the road options flood or build up ice in the wintertime?

dont Know

Airport

Is a new airport in Noatak good or bad? Why?

bad

What airport option do you prefer? Why?

A 2

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

NA

What road option, if any, do you prefer? Why?

Airport

Do any of the creeks along the road options flood or build up ice in the wintertime?

I don't know

Airport

Is a new airport in Noatak good or bad? Why?

Good but Bad But
need big Airport

What airport option do you prefer? Why?

N/A

If a larger airport was built, would that be better or worse?

it would be. Better if we get a bigger Airport

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Very good, will help us Noatak People alot

What road option, if any, do you prefer? Why?

any road

Do any of the creeks along the road options flood or build up ice in the wintertime?

yes

Airport

Is a new airport in Noatak good or bad? Why?

good; so we can have cheaper fares, and cheaper food

What airport option do you prefer? Why?

The biggest 1

If a larger airport was built, would that be better or worse?

good. but will need rides to go to it.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Tremendous Idea, To have a better access to our hunting grounds & cheaper fuel & freight

What road option, if any, do you prefer? Why?

R1, Its a better route for our traffic less traffic for migration of caribou

Do any of the creeks along the road options flood or build up ice in the wintertime?

For sure it does with Bridges that is strong & dependable

Airport

Is a new airport in Noatak good or bad? Why?

awesome, we need a run way that is open all season especially in bad weather seasons

What airport option do you prefer? Why?

A3, Not to far away to build a road access to the new airport

If a larger airport was built, would that be better or worse?

Bet Better for airport traffic & we do need one anyways for a good cause especially in emergency situation

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

most likely good if we can get fuel cheaper than what we pay here in Noatak

What road option, if any, do you prefer? Why?

not thru the caribou migration would be the best route

Do any of the creeks along the road options flood or build up ice in the wintertime?

I really wouldn't know altho' it would seem likely

Airport

Is a new airport in Noatak good or bad? Why?

very good with the erosion the way it is every year our airport will be gone in about 10-15 years.

What airport option do you prefer? Why?

A-1, because it's not too far from the town

If a larger airport was built, would that be better or worse?

It would be better because the one we have is not going to last long.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good Help the Noatak people with any + all Shipment of anykind. + Low fuel (oil/gas)

What road option, if any, do you prefer? Why?

R1 Not close to our river

Do any of the creeks along the road options flood or build up ice in the wintertime?

I dont know

Airport

Is a new airport in Noatak good or bad? Why?

Good. We are having an erosion that is going to our airport rd. NOatak tried stopping the erosion but not use. Wasted Millions of money on that project

What airport option do you prefer? Why?

A2 not too close to our town. Not much noise with the jet

If a larger airport was built, would that be better or worse?

Better. We have an erosion problem that can't be stopped. Plus less slo + gas to buy when the freight comes in

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

It would be very good for Noatak. Because we need cheaper stove oil and gasoline, etc. We depend on gasoline for hunting, for subsistence.

What road option, if any, do you prefer? Why?

We would prefer R1 because it is straight to the road.

Do any of the creeks along the road options flood or build up ice in the wintertime?

We don't think the first creek on Nayigaik floods that much. We've always crossed it with sno-machine even in the spring

Airport

Is a new airport in Noatak good or bad? Why?

We need a new airport. We have cross winds every so often which is sometimes rough landing. The present airport is right over the village which is kind of worse [illegible], electrical wire on the way.

What airport option do you prefer? Why?

We prefer A1.
It seems the right place, not too from village and not too close to the houses.

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good
some place to ride

What road option, if any, do you prefer? Why?

The blue line
some place different

Do any of the creeks along the road options flood or build up ice in the wintertime?

Dont Knew maybe

Airport

Is a new airport in Noatak good or bad? Why?

Good
safer for the fuel planes

What airport option do you prefer? Why?

The blue one
not too much wires around

If a larger airport was built, would that be better or worse?

better
more safer for all planes

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, because it will be less cost to transport fuel to red dog. It will also create more jobs. to transport fuel here from noatak to Red dog.

What road option, if any, do you prefer? Why?

R1, because it floods around the river during springtime and a bit shorter.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Yes it floods the whole creek during springtime and freezes fall time.

Airport

Is a new airport in Noatak good or bad? Why?

It has nice landscape and I dont think it will have an erosion near by. I think A2 is best for an Airport. And the other one looks like an erosion will occur over the years, and it is good to get a new one.

What airport option do you prefer? Why?

A2 it has nice landscape and, looks like it wont have an erosion and flat lands around it.

If a larger airport was built, would that be better or worse?

It would be better, even better to haul fuel to red dog and will have more space for our airport, much easier to operate airplanes, and jets.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Yes, lower fuel prices & equipment

What road option, if any, do you prefer? Why?

R3

Do any of the creeks along the road options flood or build up ice in the wintertime?

Don't know

Airport

Is a new airport in Noatak good or bad? Why?

Good, lower prices for fuel & groceries

What airport option do you prefer? Why?

A2, far away from river

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good because we need the Road for hauling gas from the port instead of flying it in.

What road option, if any, do you prefer? Why?

R3 because it's mostly on good ground

Do any of the creeks along the road options flood or build up ice in the wintertime?

Don't Know

Airport

Is a new airport in Noatak good or bad? Why? A2

good because are airport is going to be no more from the water eating the river bank

What airport option do you prefer? Why?

A2

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, cut down on fuel costs

What road option, if any, do you prefer? Why?

R-2a, if 1st or 2nd it will take long time thru monument to get port road, + 3rd it will go thru Kipnuqsuk + have to go up + down thru valley.

Do any of the creeks along the road options flood or build up ice in the wintertime?

yes

Airport

Is a new airport in Noatak good or bad? Why?

Good, our airport will erode in couple years, only main ~~fuel airport~~ transportation for fuel & supplies

What airport option do you prefer? Why?

Option 1, it will further away from erosion

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good, Because our stove-oil + gas is so high maybe it'll help alittle.

What road option, if any, do you prefer? Why?

RIA - Shorter to the road.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Kiyak (a little bit)

Airport

Is a new airport in Noatak good or bad? Why?

good. Straight flights to Arch or Fairbanks

What airport option do you prefer? Why?

A1 other side of the bridge away from the bank falling.

If a larger airport was built, would that be better or worse?

Better.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good. Have a road to go subsistance hunt/berries. Easy access.

What road option, if any, do you prefer? Why?

Route 1. Shorter easier to maintain.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Dont know.

Airport

Is a new airport in Noatak good or bad? Why?

Good. Erosion problem coming up.

What airport option do you prefer? Why?

A2 don't have to worry about erosin for a while

If a larger airport was built, would that be better or worse?

It would be OK. No problems w/ erosm. We have fuel planes all the time it would be safer.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good. The barge makes it over there. Gas prices + Stove Oil prices would be lower if we can get it from there. Also our groceries.

What road option, if any, do you prefer? Why?

Road to Portsite - directly where the barge goes. Also improvement on our roads.

Do any of the creeks along the road options flood or build up ice in the wintertime?

I sure don't know.

Airport

Is a new airport in Noatak good or bad? Why?

The one we have right now is good.

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good - local economy, cheaper pricing
Bad - traffic/noise, air pollution/dust

What road option, if any, do you prefer? Why?

R1 - less costs

Do any of the creeks along the road options flood or build up ice in the wintertime?

N/A

Airport

Is a new airport in Noatak good or bad? Why?

Eventually, we will need a new runway due to permafrost + possibly erosion. So yes will would see benefits from a new airport.

What airport option do you prefer? Why?

A-3, not too far away, but new location.

If a larger airport was built, would that be better or worse?

Better because of natural destruction of ground, more cash into local economy. Worse, because of more traffic/noise.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Would Be Good, There is Alot of Good Options Like Lower Cost of Fuel & ETC.

What road option, if any, do you prefer? Why?

R2

Do any of the creeks along the road options flood or build up ice in the wintertime?

Nope Not With Good Maintenance :)

Airport

Is a new airport in Noatak good or bad? Why?

Good Thing, The Existing Airport is in Danger in the Up Coming Yrs.

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

Better in a way fly in Cargo Plane.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, Jobs for Locals if any.

What road option, if any, do you prefer? Why?

Same R3A, R1A, more assessable to the mine

Do any of the creeks along the road options flood or build up ice in the wintertime?

~~might~~ flood

Airport

Is a new airport in Noatak good or bad? Why?

good, banks fall to close.

What airport option do you prefer? Why?

A3, close to main village

If a larger airport was built, would that be better or worse?

undecided,

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

What road option, if any, do you prefer? Why?

For hunting camping etc.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Yes

Airport

Is a new airport in Noatak good or bad? Why?

Flies Right overhead our house

What airport option do you prefer? Why?

New Airport

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good,

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Not too much

Airport

Is a new airport in Noatak good or bad? Why?

Good,

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, hauling fuel from Port or Mine, get cheaper fuel

What road option, if any, do you prefer? Why?

Al, get cheaper fuel from port

Do any of the creeks along the road options flood or build up ice in the wintertime?

Some creeks do

Airport

Is a new airport in Noatak good or bad? Why?

Good, need crosswind airport

What airport option do you prefer? Why?

Option 1

If a larger airport was built, would that be better or worse?

Good

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good,

What road option, if any, do you prefer? Why?

R-1, NOT TOO FAR

Do any of the creeks along the road options flood or build up ice in the wintertime?

only Kuukichauraq

Airport

Is a new airport in Noatak good or bad? Why?

Good, good to built other one

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

Better, so big jet come good for emergency or medivac

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, the Road will benefit our local People who Are willing to work, if the Road is Approved. since local Jobs Are limited, I think everyone who is willing to work will have a chance at a lifetime to do this kind of work.

What road option, if any, do you prefer? Why?

R1, Because the R1 Road is Already there towards the Red dog Road. it would Probably save a lot of money & Time, Just Because Its Closer & most used for Travel.

Do any of the creeks along the road options flood or build up ice in the wintertime?

I, myself do not know. But Information can be found from elders.

Airport

Is a new airport in Noatak good or bad? Why? it sounds like a good idea, it would bring Jobs or Jobs like the Road project

~~Bad. I~~ ~~think our Airport is the safest & most maintained in our Region, excluding Kotzebue's. since they have pavement instead of gravel. it would be a cost to make another Airport.~~

~~But consider it again in 10 or 15 years.~~

What airport option do you prefer? Why?

A1 - I think 3½ miles would not be too much of a noise problem.

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, cut down on fuel costs

What road option, if any, do you prefer? Why?

R2a, better

Do any of the creeks along the road options flood or build up ice in the wintertime?

yes

Airport

Is a new airport in Noatak good or bad? Why?

Good, our airport will erode in couple years, only main transportation for fuel & supplies

What airport option do you prefer? Why?

Option 1, it will be further away from erosion

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good. We need cheaper fuel prices

What road option, if any, do you prefer? Why?

Route 1. It doesn't go along the river and wouldn't affect the Caribou migration.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Not sure

Airport

Is a new airport in Noatak good or bad? Why?

Good. Its going to erode soon.

What airport option do you prefer? Why?

A1 - Closer to town.

If a larger airport was built, would that be better or worse?

Better, we could have larger airplanes land safely.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good- well we will have a road guide to Kivalina and to the Port, Workers can be picked up thru the road rather then Plane.

What road option, if any, do you prefer? Why?

R1 less of a road, the less work to be done

Do any of the creeks along the road options flood or build up ice in the wintertime?

do not know

Airport

Is a new airport in Noatak good or bad? Why?

Good. we can have our own Hub rather then going to Kotzebue.

What airport option do you prefer? Why?

A3 - closer to town

If a larger airport was built, would that be better or worse?

better for the town, we can ship cargo direct to town.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

?

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

Good & Bad

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Road connecting Noatak to Red dog is good Because it open more jobs opens Anchorage to noatak

What road option, if any, do you prefer? Why?

R 3 because the straghtest route and least amount of water crossings

Do any of the creeks along the road options flood or build up ice in the wintertime?

YES

Airport

Is a new airport in Noatak good or bad? Why?

The new airport is good because it will let more stay more people more money coming in

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Cheaper fuel, gas food

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

2

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A-3

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Yes, because, we could get
lest stove-oil price + gas.

What road option, if any, do you prefer? Why?

Anyone I don't care.
Whatever

Do any of the creeks along the road options flood or build up ice in the wintertime?

I don't Know

Airport

Is a new airport in Noatak good or bad? Why?

OK - lest walking in the
thudre

What airport option do you prefer? Why?

I don't know - whatever

If a larger airport was built, would that be better or worse?

OK

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

Good

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good

What road option, if any, do you prefer? Why?

R-1 closer

Do any of the creeks along the road options flood or build up ice in the wintertime?

no probelm, lowest part

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A-3 closer to town

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good cheaper everything

What road option, if any, do you prefer? Why?

R-2 Closer to river

Do any of the creeks along the road options flood or build up ice in the wintertime?

Dont know

Airport

Is a new airport in Noatak good or bad? Why?

good, costs would go down

What airport option do you prefer? Why?

A-2 closer to town

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

It would help fuel ~~xxxx~~ etc.

What road option, if any, do you prefer? Why?

R-3

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

Good

What airport option do you prefer? Why?

A-1 or A-2

If a larger airport was built, would that be better or worse?

it would help me/ a bigger airport

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good for gas & Food

What road option, if any, do you prefer? Why?

No comm

Do any of the creeks along the road options flood or build up ice in the wintertime?

No Com

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

No Comm

If a larger airport was built, would that be better or worse?

No Comm

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good - fuel is the reason cause we need to get cheaper fuel here.

What road option, if any, do you prefer? Why?

it doesn't matter as long as we get the fuel here.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Not to sure

Airport

Is a new airport in Noatak good or bad? Why?

good - we can get our groceries and hardware and material directly from Anchorage.

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good more road for 4 Wheeling and hunting Fishing and picking Berries

What road option, if any, do you prefer? Why?

R2 along the river for hunting & fishing

Do any of the creeks along the road options flood or build up ice in the wintertime?

not Rarely

Airport

Is a new airport in Noatak good or bad? Why?

Need the airport further Hunting for the Villages A-1 Plus Jobs for us

What airport option do you prefer? Why?

A-1 Suite Farm W/15gc

If a larger airport was built, would that be better or worse?

Better for housing Cargo & Groceries for the Store

2

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, low fuel prices, groceries, materials, more jobs

What road option, if any, do you prefer? Why?

R30, follow the creek

Do any of the creeks along the road options flood or build up ice in the wintertime?

No.

Airport

Is a new airport in Noatak good or bad? Why?

good, the existing one will be gone in less then 5 months

What airport option do you prefer? Why?

A3, closer to the village

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good, Fuel & groc would get cheaper

What road option, if any, do you prefer? Why?

R-1 closest

Do any of the creeks along the road options flood or build up ice in the wintertime?

no probelm

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A-1 better for 16 unit

If a larger airport was built, would that be better or worse?

better w/ bigger Airport

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good for gas prices

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

No problem

Airport

Is a new airport in Noatak good or bad? Why?

good for store prices

What airport option do you prefer? Why?

A-3 closer to town for medical

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good. Easier to do alot of things

What road option, if any, do you prefer? Why?

[redacted]. the bridge way.

Do any of the creeks along the road options flood or build up ice in the wintertime?

I don't know.

Airport

Is a new airport in Noatak good or bad? Why?

good we need a bigger airport.

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

better so we can get Alaska airlines in.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Yes. When weather conditions are bad, employees would have another way to get out or in.

What road option, if any, do you prefer? Why?

R3

Do any of the creeks along the road options flood or build up ice in the wintertime?

I have no idea

Airport

Is a new airport in Noatak good or bad? Why?

good. So maybe we could get bigger things in that we would order + pay alot of frt for.

What airport option do you prefer? Why?

A-1 Closer to town in case of emergencies

If a larger airport was built, would that be better or worse?

probably better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good - maybe fuel could be hauled in from Red Dog to Noatak

What road option, if any, do you prefer? Why?

R1 less caribou traffic

Do any of the creeks along the road options flood or build up ice in the wintertime?

don't know

Airport

A1

Is a new airport in Noatak good or bad? Why?

good - the erosion from the river is getting too close to the existing runway

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

What road option, if any, do you prefer? Why?

R1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

What airport option do you prefer? Why?

closest

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, Because it would be easier to travel to Kivalina

What road option, if any, do you prefer? Why?

R1, Because it is closer to Red Dog

Do any of the creeks along the road options flood or build up ice in the wintertime?

Yes

Airport

Is a new airport in Noatak good or bad? Why?

Good, so it wont be too crowded

What airport option do you prefer? Why?

A2, Because it is far away from the River

If a larger airport was built, would that be better or worse?

I would be better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Maybe good

What road option, if any, do you prefer? Why?

R-1 Shorter

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

good - need new airport

What airport option do you prefer? Why?

A - 1

If a larger airport was built, would that be better or worse?

better - because it'll be bigger

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good

What road option, if any, do you prefer? Why?

R-1 Shorter

Do any of the creeks along the road options flood or build up ice in the wintertime?

Can be fixed

Airport

Is a new airport in Noatak good or bad? Why?

Need new Airport

What airport option do you prefer? Why?

A -3

If a larger airport was built, would that be better or worse?

better - Cheaper oil & gas

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good for road to Red Dog

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

It would be good if we could get cheaper fuel & food. It would benefit our community

What road option, if any, do you prefer? Why?

Number R1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Don't know

Airport

Is a new airport in Noatak good or bad? Why?

It would be good if we could get big planes to lower cost of food, etc.

What airport option do you prefer? Why?

A3, closer to village

If a larger airport was built, would that be better or worse?

better.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

it Would be good for our Village Maybe fuel oil Would be Cheaper

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

A new airport in Noatak Would be good since the airport is to Close to the River

What airport option do you prefer? Why?

A1

If a larger airport was built, would that be better or worse?

it would be better, most planes come to Nuetak = High Wind or fog and wait out the Weather

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good with fuel prices & freight cost the road would be a benefit to the Village

What road option, if any, do you prefer? Why?

A3 it would be built where the caribou least feed and past during migration

Do any of the creeks along the road options flood or build up ice in the wintertime?

R1 & R2

Airport

Is a new airport in Noatak good or bad? Why?

Good if it is build away from the Village it would be safer and the noise compact would be less

What airport option do you prefer? Why?

A1

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good - for fuel - Cheaper

What road option, if any, do you prefer? Why?

R-3

Do any of the creeks along the road options flood or build up ice in the wintertime?

Few spots but can be fixed

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

The Road to Red Dog would Benefit NOATAK for Cheaper fuel, dry goods etc..

What road option, if any, do you prefer? Why?

the one closer to the Airport would Be my option

Do any of the creeks along the road options flood or build up ice in the wintertime?

Depend on the amount of Snow

Airport

Is a new airport in Noatak good or bad? Why?

We need a new Airport Because of erosion it would Benefit Noatak with roads to the hills for gravel source and roads to our Cemetary

What airport option do you prefer? Why?

Any one that would connect to Road to Red Dog.

If a larger airport was built, would that be better or worse?

Better for Red Dog and Noatak.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good

What road option, if any, do you prefer? Why?

one closer to Airport (New)

Do any of the creeks along the road options flood or build up ice in the wintertime?

?

Airport

Is a new airport in Noatak good or bad? Why?

Good

What airport option do you prefer? Why?

Anyone Closer to New Red Dog Road
Will go w/ Dad's ~~Pr~~ Choice

If a larger airport was built, would that be better or worse?

~~better~~

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

GOOD! FUEL IS GOING UP, UP, UP AND MORE UP!

What road option, if any, do you prefer? Why?

WHAT EVER THE PEOPLE ~~PREFER~~ DECIDE.

Do any of the creeks along the road options flood or build up ice in the wintertime?

YES! ALL CREEKS FLOOD IN SPRING TIME.

Airport

Is a new airport in Noatak good or bad? Why?

GOOD! AIRPORT IS GOING TO BE GONE IN FEW YEARS.

What airport option do you prefer? Why?

IN LAND AWAY FROM THE RIVER

If a larger airport was built, would that be better or worse?

IT WOULD BE BETTER FOR THE VILLAGE.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, [redacted] R2

What road option, if any, do you prefer? Why?

R2

Do any of the creeks along the road options flood or build up ice in the wintertime?

I Dont know

Airport

Is a new airport in Noatak good or bad? Why?

Good A3,

What airport option do you prefer? Why?

A3, Closer to town

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good because of the bad weather on traveling days

What road option, if any, do you prefer? Why?

R1, doesn't go along the river

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

good, because the rivers eroding the land

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

I think it would be good maybe fuel wise - because we'd be able to have easier access. & price would be less

What road option, if any, do you prefer? Why?

R2 - would be good for those that do subsistence too.

Do any of the creeks along the road options flood or build up ice in the wintertime?

I don't really know.

Airport

Is a new airport in Noatak good or bad? Why?

It would be good - if you looking to the future & something to look forward for our children & grandchildren.

What airport option do you prefer? Why?

A-2 it seems our village is moving in that direction anyway

If a larger airport was built, would that be better or worse?

I think it would be (good) better.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

It's going to be good in lots of ways; cheaper fuel, finding more berry Picking grounds and hunting.

What road option, if any, do you prefer? Why?

R1 don't have too many lakes in the way

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

Its going to be good because exsisting Airport is close to the erosion

What airport option do you prefer? Why?

A1 would be better because A2 is too far from town and A3 is right over Knutehaurag

If a larger airport was built, would that be better or worse?

It would be better for cheaper costs in cargo and can be used to send critically injured patients to ANC or Seattle

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

could be fixed

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A-3

If a larger airport was built, would that be better or worse?

it could be better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good

More convenient to get supplies and gas to Noatak

What road option, if any, do you prefer? Why?

1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Dont Know

Airport

Is a new airport in Noatak good or bad? Why?

Good

What airport option do you prefer? Why?

?

If a larger airport was built, would that be better or worse?

It would be better, because a larger airport would mean the larger planes would land and would get more supplies in

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good. in a way, Noatak would profit of some gas possibly get to send fright through barge.

What road option, if any, do you prefer? Why?

A1, good for the airport and not too far.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Not sure but Kugurang.

Airport

Is a new airport in Noatak good or bad? Why?

depends, it would be good in a longrun but if it were to be 5 miles out, ~~ed~~ I dont know.

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good

What road option, if any, do you prefer? Why?

R-1 shorter

Do any of the creeks along the road options flood or build up ice in the wintertime?

Can be fixed

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A -3

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good

What road option, if any, do you prefer? Why?

R1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A - 1

If a larger airport was built, would that be better or worse?

better not

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, cheaper fuel delivery, and people won't get lost if traveling.

What road option, if any, do you prefer? Why?

gravel road, Because we might attract too many tourist, besides we don't need alot of trucks, cars, etc going to our village.

Do any of the creeks along the road options flood or build up ice in the wintertime?

They freeze during the winter, they can install culverts to keep the creeks flowing

Airport

Is a new airport in Noatak good or bad? Why?

good, the one we have is getting close to the bank besides the banks are falling everytime the river floods that's why we need to move the airport.

What airport option do you prefer? Why?

Cement airport, So planes can see better with their instruments ratter than gps.

If a larger airport was built, would that be better or worse?

Better, So Cargo planes can bring straight to our village rather than go to otz

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good for workers

What road option, if any, do you prefer? Why?

?

Do any of the creeks along the road options flood or build up ice in the wintertime?

yes

Airport

Is a new airport in Noatak good or bad? Why?

What airport option do you prefer? Why?

?

If a larger airport was built, would that be better or worse?

better

?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

I, Feel that it would benefit, Both WTK and reddog mine

What road option, if any, do you prefer? Why?

Noatak, Reddog, And Kivalina would bring us closer, And we might bond. R1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Bridges, would be the only safe road to build thru creeks, Also it would not harm or alter mother nature

Airport

Is a new airport in Noatak good or bad? Why?

it Would be a good Idea for A3

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good for Cheaper fuel for Barge

What road option, if any, do you prefer? Why?

17 miles

Do any of the creeks along the road options flood or build up ice in the wintertime?

yes

Airport

Is a new airport in Noatak good or bad? Why?

Good Bigger Better probably easier to maintain

What airport option do you prefer? Why?

A-3 Close to Village

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

Good

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, because it brings jobs to our village.

What road option, if any, do you prefer? Why?

1-7 miles because our children would have to be brought to the airport, not to mention, the health aids who have to bring patients.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Yes

Airport

Is a new airport in Noatak good or bad? Why?

Good, our eroding road is going too fast & it would bring jobs to our village

What airport option do you prefer? Why?

1.7 miles it would be just fur enough

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

Good

What airport option do you prefer? Why?

A - 1

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good for fuel prices, gas & food

What road option, if any, do you prefer? Why?

ANY R 3 A

same as Husbands

Do any of the creeks along the road options flood or build up ice in the wintertime?

can be fixed

Airport

Is a new airport in Noatak good or bad? Why?

good, Planes flying over houses right now not good

What airport option do you prefer? Why?

A2

Same as Husbands

If a larger airport was built, would that be better or worse?

dont know

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

It is A good Idea, we need Cheap Fuel, and merchandise, This will help also with Jobs, much needed

What road option, if any, do you prefer? Why?

A Connection through Pit six, or Pit 10 would be okay. Route 1

Do any of the creeks along the road options flood or build up ice in the wintertime?

yes, But with proper Culverts This can be done.

Airport

Is a new airport in Noatak good or bad? Why?

Good IDea, long as it is ALASKA Airlines Compatable again we need To take Advantage of lower freight costs, Also This can be used Also For Red Dog as an Alternative Airport for Them.

What airport option do you prefer? Why?

ALASKA Airlines Compatable
(Concrete the Airport)
Paved 6500 By 500 option 1

If a larger airport was built, would that be better or worse?

That would be good we need
more Business in our Community

Burns

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good our gas & Food will cost Cheaper

What road option, if any, do you prefer? Why?

NO comm

Do any of the creeks along the road options flood or build up ice in the wintertime?

NO comm

Airport

Is a new airport in Noatak good or bad? Why?

Good - Need A cross wind Airport, need Bigger Airport for Bigger Airplane

What airport option do you prefer? Why?

N/O com

If a larger airport was built, would that be better or worse?

N/O com

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Very good! More jobs for our people I hope!

What road option, if any, do you prefer? Why?

#2 - just because ☺

Do any of the creeks along the road options flood or build up ice in the wintertime?

I don't know!

Airport

Is a new airport in Noatak good or bad? Why?

good maybe - cause incase of whatever

What airport option do you prefer? Why?

anyone – just so we get new one

If a larger airport was built, would that be better or worse?

maybe better ☺

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good - prices for fuel + staples will go down.

What road option, if any, do you prefer? Why?

R1 - closer to Noatak

Do any of the creeks along the road options flood or build up ice in the wintertime?

Some overflow

Airport

Is a new airport in Noatak good or bad? Why?

Good - bring fuel in, cost will go down

What airport option do you prefer? Why?

A2 - quieter For our village

If a larger airport was built, would that be better or worse?

No comment (don't really know)

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, so we could have cheaper gas & oil prices

What road option, if any, do you prefer? Why?

Any

Do any of the creeks along the road options flood or build up ice in the wintertime?

no

Airport

Is a new airport in Noatak good or bad? Why?

good, lower the prices of oil & gas

What airport option do you prefer? Why?

the long one

If a larger airport was built, would that be better or worse?

Better, we could make runs to Anchorage

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

it could be useful if someones lost or something theres a road.

What road option, if any, do you prefer? Why?

the closest route from Noatak to red Dog

Do any of the creeks along the road options flood or build up ice in the wintertime?

not to sure

Airport

Is a new airport in Noatak good or bad? Why?

cheaper air fare, save gas, good weather most of the time

What airport option do you prefer? Why?

Where ever

If a larger airport was built, would that be better or worse?

Safer, the bigger the safer

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

It would be good, if it can happen because everything is so expensive here. Maybe we'd get direct service

What road option, if any, do you prefer? Why?

#A2 would be my personal preference because we would have to deal with so much road easement. Just direct route from village to airport to Haul Road.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Yes R1 has two creeks but the others are the same. R3 would have one major one would be my second choice from R1 which is the shortest but crosses the Monument which could cause a delay (maybe)

Airport

Is a new airport in Noatak good or bad? Why?

It would be good because it's going down the river if the erosion continues the way it has

What airport option do you prefer? Why?

Either 2 one

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Should be good - Cause sometimes when the weather is bad its dangerous also if theres an emergency the jet lands in Red dog + that could be help to Noatak

What road option, if any, do you prefer? Why?

Noatak to the nearest Red dog road Because its closer

Do any of the creeks along the road options flood or build up ice in the wintertime?

I think its all ground

Airport

Is a new airport in Noatak good or bad? Why?

good - Because if they can't land in Kotz, - they can land here in Noatak the big jet.

What airport option do you prefer? Why?

Wider + longer so the big jets can land in Noatak + Maybe have direct flight to Anch without stopping in Kotz.

If a larger airport was built, would that be better or worse?

It would be better cause Noatak is a growing Village

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, Maybe than Will get our gas and Oil Cheaper than our N.N.S. plus our people wouldnt be storm bound. the ones that Work in red dog.

What road option, if any, do you prefer? Why?

R1 It looks like shorter to the red Dog Mine.

Do any of the creeks along the road options flood or build up ice in the wintertime?

build up ice, Maybe — but they do freeze up

Airport

Is a new airport in Noatak good or bad? Why?

good, because of the erosion

What airport option do you prefer? Why?

A3 - Because its Closer to town

If a larger airport was built, would that be better or worse?

better yet.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good, lesson Fuel costs, Food etc

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Dont Know

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A-3

If a larger airport was built, would that be better or worse?

better; Lessen Costs; work

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

?

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

good

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

it will be good for our Red Dog workers, Ben

What road option, if any, do you prefer? Why?

?

-

Do any of the creeks along the road options flood or build up ice in the wintertime?

?

-

Airport

Is a new airport in Noatak good or bad? Why?

we do need New Airport; our Airport right now. is to close to River now)

What airport option do you prefer? Why?

7

-

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good

What road option, if any, do you prefer? Why?

R 1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Don't Know

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

Good

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good for Noatak,
benefit our economy

What road option, if any, do you prefer? Why?

None, make sure none is connected to ours.

Do any of the creeks along the road options flood or build up ice in the wintertime?

yes, break up time

Airport

Is a new airport in Noatak good or bad? Why?

good.
all that dust and fumes always blow and fall on Noatak.

What airport option do you prefer? Why?

#1

If a larger airport was built, would that be better or worse?

better for our next generation

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, Cheaper groceries stove oil and gas.

What road option, if any, do you prefer? Why?

R1. A lot closer to Red Dog Road

Do any of the creeks along the road options flood or build up ice in the wintertime?

Not sure of this, Haven't seen it before.

Airport

Is a new airport in Noatak good or bad? Why?

Good. The erosion that happens in summer is getting closer to our runway.

What airport option do you prefer? Why?

A2, It is further up and looks like a good place.

If a larger airport was built, would that be better or worse?

Better.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good

Reduce Cost of Fuel, Freight (Economy)

What road option, if any, do you prefer? Why?

R3A Over All Cost Efficient

Do any of the creeks along the road options flood or build up ice in the wintertime?

No

Airport

Is a new airport in Noatak good or bad? Why?

Good

Due to Erosion A New Airport will have to Happen Anyway

What airport option do you prefer? Why?

A1 - A3 -

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good for work

What road option, if any, do you prefer? Why?

Leave it to elders choice

Do any of the creeks along the road options flood or build up ice in the wintertime?

?

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

Leave it up to elders

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good. It provides lower fuel costs and groceries & other big items we can't get through the air.

What road option, if any, do you prefer? Why?

The shortest possible routing because it limits the encroachment of untapped wilderness -

Do any of the creeks along the road options flood or build up ice in the wintertime?

?

Airport

Is a new airport in Noatak good or bad? Why?

Good. it will provide jobs for the Noatak community and be a closer project adjacent to our village

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

I think the road would be good things like gas + oil would be more Cheaper.

What road option, if any, do you prefer? Why?

The road that is the shortest would be better

Do any of the creeks along the road options flood or build up ice in the wintertime?

I would have no idea

Airport

Is a new airport in Noatak good or bad? Why?

Would be good, cause of the erosion problem we would have in the future

What airport option do you prefer? Why?

The one close to Nortak or little Dutton Which ever

If a larger airport was built, would that be better or worse?

Would be good, Cause we would get larger planes in or jets

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good cheaper oil & gas

What road option, if any, do you prefer? Why?

R. 3 better ground

Do any of the creeks along the road options flood or build up ice in the wintertime?

Don't know

Airport

Is a new airport in Noatak good or bad? Why?

good better landing

What airport option do you prefer? Why?

A1 not so close to the village

If a larger airport was built, would that be better or worse?

Don't know

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good: is that we might get fuel oil and gas at a lower price. Bad; kids riding on the road with atv's.

What road option, if any, do you prefer? Why?

RI, less bridges to make.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Some of the have overflows.

Airport

Is a new airport in Noatak good or bad? Why?

I don't know.

What airport option do you prefer? Why?

A3, Closer to Village.

If a larger airport was built, would that be better or worse?

I don't know

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good - economic benefits, fuel, freight, etc.

bad - subsistence and cultural activities

This is an invitation to extremely rapid growth to The area. currently struggling with high costs, but more traditional lifestyle.

What road option, if any, do you prefer? Why?

if the majority chooses yes, than I would prefer 1a

Do any of the creeks along the road options flood or build up ice in the wintertime?

yes along 1a

Airport

Is a new airport in Noatak good or bad? Why?

Very Good, The safety of the village comes first, I dont like DC-3's or DC-6's full of fuel flying directly over my house.

What airport option do you prefer? Why?

North of NOATAK

If a larger airport was built, would that be better or worse?

Better, safe flying for all aircraft. and larger payloads.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

travelers could go thru their

What road option, if any, do you prefer? Why?

Do any of the creeks along the road options flood or build up ice in the wintertime?

ice need to flow thru

Airport

Is a new airport in Noatak good or bad? Why?

Good for cross wind
& Bigger

What airport option do you prefer? Why?

A1 far from river

If a larger airport was built, would that be better or worse?

The best. bigger would be better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, it would help to us to have fuel from Red Dog, fuel will be cheaper.

What road option, if any, do you prefer? Why?

R-1, it's shorter.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Don't Know

Airport

Is a new airport in Noatak good or bad? Why?

Good, eroison is getting closer to airport at Noatak

What airport option do you prefer? Why?

A-3, it closer to new housing

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good

What road option, if any, do you prefer? Why?

Rig, so it won't bother caribou

Do any of the creeks along the road options flood or build up ice in the wintertime?

Yes, creek freeze winter flows time

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A1

If a larger airport was built, would that be better or worse?

good, big airport

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Real good to have Road Airport

What road option, if any, do you prefer? Why?

R1 R1A

Do any of the creeks along the road options flood or build up ice in the wintertime?

Yes

Airport

Is a new airport in Noatak good or bad? Why?

Good

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

Better & good

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good!

What road option, if any, do you prefer? Why?

R1

Do any of the creeks along the road options flood or build up ice in the wintertime?

flood

Airport

Is a new airport in Noatak good or bad? Why?

good!

What airport option do you prefer? Why?

A-1

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good. Because it would be good to haul fuel so we could possibly have reduced fuel prices. For economic development.

What road option, if any, do you prefer? Why?

R 1. It would be on the Noatak to Kivalina sno-go trail.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Bridges would be good where the road would cross creeks. The creeks are not large enough to wash away a good bridge.

Airport

Is a new airport in Noatak good or bad? Why?

Good. A large airport would let large freight planes haul just about anything. It'll help with economic development.

What airport option do you prefer? Why?

Any one. As long as it is away from the Noatak River because of erosion.

If a larger airport was built, would that be better or worse?

Better. It might help to reduce freight rates hauling more in bigger planes. Heavy equipment and other large ticket items would be shipped as well.

With future economic development, the infrastructure would have to be built first. So a good start would be a larger airport and a road connecting Noatak to the Red Dog Road.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Very, Very Good for us Noatak Residence
We have a high cost of living on fuel, gas + food, supplies.
It would help the whole village of low cost of fuel/gas.
Flying fuel/gas right now it's too high cost of living, esp. lot low income families.

What road option, if any, do you prefer? Why?

R1,
The fastest, quickest way.

Do any of the creeks along the road options flood or build up ice in the wintertime?

I really don't know about that question, I haven't travel to KVL for years.

Airport

Is a new airport in Noatak good or bad? Why?

Very, Very Good.
Our Riverbank is eroding so fast + we need one asap.

What airport option do you prefer? Why?

A 2

Because of riverbank eroding towards airport, it would be better to

If a larger airport was built, would that be better or worse?

That really, really would be better, intelligent, excellent. It would be good to have a terminal since our town is growing. Water & Sewer facilities. It would be good if Red Dog Charter could shuttle our village since it's (Kotlik) is closest in the region.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good Idea about time - we herd cheaper stove oil + gas prices.

What road option, if any, do you prefer? Why?

R3

Do any of the creeks along the road options flood or build up ice in the wintertime?

I don't Know

Airport

Is a new airport in Noatak good or bad? Why?

A1 - It should not be near the house.

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

It would be good. Safe for Red Dog Workers. And When people need to fly to a Village they wont have to wait for days.

What road option, if any, do you prefer? Why?

It R 1
It's farther from the river.

Do any of the creeks along the road options flood or build up ice in the wintertime?

I would think they would

Airport

Is a new airport in Noatak good or bad? Why?

I think it would be good because the old one is too close to the River.
~~Too close~~

What airport option do you prefer? Why?

A 1

[redacted] It won't be far for emergencies.

If a larger airport was built, would that be better or worse?

Probably better, We've been getting large planes coming in and it would be safer for both the Airplane and the Village.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good

What road option, if any, do you prefer? Why?

R-1 better

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A-3

If a larger airport was built, would that be better or worse?

good

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

GOOD

FREIGHT COSTS REDUCED / ALSO FUEL

What road option, if any, do you prefer? Why?

RI

SHORTEST DISTANCE

LESS DISTURBANCE TO WILDLIFE

Do any of the creeks along the road options flood or build up ice in the wintertime?

YES - KIYAK OVERFLOWS

Airport

Is a new airport in Noatak good or bad? Why?

GOOD

OLD ONE DANGEROUSLY CLOSE TO RIVER

EROSION - ALSO FLIGHT ZONE PATH IS RIGHT OVER TOWN AND LAND CAN BE USED FOR FUTURE BUILDING

What airport option do you prefer? Why?

A1

A3 TOO CLOSE TO CREEK (HAS OVERFLOW PROBLEM)

If a larger airport was built, would that be better or worse?

BETTER

SCHOOL REDD DOG (IF ROAD IS BUILT - CAN BUS WORKERS)

DAILY PROVISIONS WILL BE MORE RELIABLE

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, The fuel would go down a bit, also the groceries would also so down.

What road option, if any, do you prefer? Why?

R1 Closer to the village

Do any of the creeks along the road options flood or build up ice in the wintertime?

(?) Don't Know

Airport

Is a new airport in Noatak good or bad? Why?

Good

What airport option do you prefer? Why?

A 1

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

GOOD, ECONOMICS.

What road option, if any, do you prefer? Why?

R1, SHORTEST ROUTE, SO WE WONT DISTURB THE CARIBOU MIGRATION

Do any of the creeks along the road options flood or build up ice in the wintertime?

DONIT KNOW

Airport

Is a new airport in Noatak good or bad? Why?

GOOD

What airport option do you prefer? Why?

A 3

If a larger airport was built, would that be better or worse?

BETTER

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good, because when the weather is down they can come on threw the road.

What road option, if any, do you prefer? Why?

R1 because it is closer.

Do any of the creeks along the road options flood or build up ice in the wintertime?

I don't know.

Airport

Is a new airport in Noatak good or bad? Why?

A. I good because if the old one erode we will have a new airport

What airport option do you prefer? Why?

R-1

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good - we will have more jobs, pay less for gas/stove oil.

What road option, if any, do you prefer? Why?

Which ever one that is good for Subsistence, Because we really rely on subsistence.

Do any of the creeks along the road options flood or build up ice in the wintertime?

don't know

Airport

Is a new airport in Noatak good or bad? Why?

Good. Because the bank is getting close to the one we have.

What airport option do you prefer? Why?

A-1 / Because it will be good.

If a larger airport was built, would that be better or worse?

Better so we can have more freight planes + might get cheaper to bring large stuff to town.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good

What road option, if any, do you prefer? Why?

R-1 Closer

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

Good - ~~I~~ were still to Close to village

What airport option do you prefer? Why?

A-1 better

If a larger airport was built, would that be better or worse?

Maybe worse might scare animals

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

the choice was a 30 mile Road of Gravel to a barge cite that would provide subsistance activitys for Residents.

What road option, if any, do you prefer? Why?

down south of the Village

Do any of the creeks along the road options flood or build up ice in the wintertime?

yes But Bridges are possible

Airport

Is a new airport in Noatak good or bad? Why?

Good, South of the Village Because of fuel in the plains that come and pass ove the Village

What airport option do you prefer? Why?

more northeasterly Because of prevailing winds for smaller air craft

If a larger airport was built, would that be better or worse?

?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good: there will be a way for fuel + gas, maybe cheaper

What road option, if any, do you prefer? Why?

RI. Closer

Do any of the creeks along the road options flood or build up ice in the wintertime?

I dont know

Airport

Is a new airport in Noatak good or bad? Why?

good: the erosion here is going fast. too close to airport

What airport option do you prefer? Why?

A1. alot closer than the other. Don't think people would want to go too far from town

If a larger airport was built, would that be better or worse?

better. now days there are more jets coming to the villages.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good because it could save more money on s/o & possibly R/T to Anchorage from here.

What road option, if any, do you prefer? Why?

Road 3 because it's closer to Noatak

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

Yes so we could fly straight to Anchorage

What airport option do you prefer? Why?

A3 closest to town

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good;

What road option, if any, do you prefer? Why?

?

Do any of the creeks along the road options flood or build up ice in the wintertime?

?

Airport

Is a new airport in Noatak good or bad? Why?

Good;

What airport option do you prefer? Why?

7

-

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

good & Bad. good for prices on fuel & gas - food & Bad for traffic

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

?

Airport

Is a new airport in Noatak good or bad? Why?

good

What airport option do you prefer? Why?

A-3

If a larger airport was built, would that be better or worse?

better & worse

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Bad

The caribou migrates between Noatak and the Red Dog Mine

What road option, if any, do you prefer? Why?

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

Bad,

Airport options are where we hunt, geese and other animals.

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

worse.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Bad, The caribou migration will change and it will be harder for us to catch caribou

What road option, if any, do you prefer? Why?

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

Bad, The jets will scare off animals, and more drugs will be sold

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

No Road at great to Red Dog.

What road option, if any, do you prefer? Why?

R-1

Do any of the creeks along the road options flood or build up ice in the wintertime?

No floods

Airport

Is a new airport in Noatak good or bad? Why?

Bad to Noatak People too much Noise When landing take off.

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Bad. Contamination

What road option, if any, do you prefer? Why?

R3. further away from town.

Do any of the creeks along the road options flood or build up ice in the wintertime?

don't really know

Airport

Is a new airport in Noatak good or bad? Why?

good. building options

What airport option do you prefer? Why?

A3 not too far or close.

If a larger airport was built, would that be better or worse?

better.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Bad, people coming into our village from outside

What road option, if any, do you prefer? Why?

None

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

Yes, lower prices for fuel and groceries

What airport option do you prefer? Why?

A1 – because can't Migrate on option A2

If a larger airport was built, would that be better or worse?

better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

bad idea -

What road option, if any, do you prefer? Why?

roads to go out hunting!

Do any of the creeks along the road options flood or build up ice in the wintertime?

don't know.

Airport

Is a new airport in Noatak good or bad? Why?

good idea - cheaper prices on groceries and fares.

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

better - for all

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

BAD, our Caribou has just changed it's migrating PATTERN ~~thru~~ thru pit 6 and down our Valley. It would affect the migration Again.

What road option, if any, do you prefer? Why?

thru the Bridge and ~~th~~ thru the Valley. Do Not much traffic thru that side.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Yes, and some don't freeze

Airport

Is a new airport in Noatak good or bad? Why?

good - more freight by the Bulk and might be Cheaper

What airport option do you prefer? Why?

A 1 - LESS NOISE AND BETTER CROSSWINDS.

If a larger airport was built, would that be better or worse?

BETTER.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

bad, it wouldnt benefit our community and our hunters would violate the State law & could be charged.

What road option, if any, do you prefer? Why?

RAI

Do any of the creeks along the road options flood or build up ice in the wintertime?

Dont know

Airport

Is a new airport in Noatak good or bad? Why?

Good - because our Bank always eroding every year a new ~~a~~ airport Sounds great.

What airport option do you prefer? Why?

A2 it is further away from our river

If a larger airport was built, would that be better or worse?

would be better we would have bigger planes come in.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

too many reasons for both good and bad

What road option, if any, do you prefer? Why?

R-1 shortest route

Do any of the creeks along the road options flood or build up ice in the wintertime?

don't really know about the creeks that way

Airport

Is a new airport in Noatak good or bad? Why?

depends on how we use the airport

What airport option do you prefer? Why?

A-2, looks like good spot to put it

If a larger airport was built, would that be better or worse?

depends on how they utilize the airport for better or worse

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

it would be good if we could get cheaper fuel & Gas. as fuel oil cost 225.00 a 53 gal. drum. & haul it from the portside

What road option, if any, do you prefer? Why?

R 3A

[redacted] ~~Less noise when landing & flying~~ as caribous migrate through R2 & R2A

Do any of the creeks along the road options flood or build up ice in the wintertime?

not that I know of

Airport

Is a new airport in Noatak good or bad? Why?

bad as my house is lined up with the air port. Big planes shake my house when they go over my house

What airport option do you prefer? Why?

A 2 not too far and not too close to the Village

If a larger airport was built, would that be better or worse?

don't know

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good - More opportunities

What road option, if any, do you prefer? Why?

Road to Red Dog.

Do any of the creeks along the road options flood or build up ice in the wintertime?

No, Put a little Bridge over the Creeks.

Airport

Is a new airport in Noatak good or bad? Why?

Bad, Erosion, Too dangerous to fly over the Village & Take off. too loud.

What airport option do you prefer? Why?

Between Noatak / Red Dog

If a larger airport was built, would that be better or worse?

Worse,

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Bad, Its bad because soon you'll get Road's from Anchorage, fairbanks and lower 48, Trains over populat with white. this land won't be ours any more you'll see! Mark my word.

What road option, if any, do you prefer? Why?

Why do you need a road? answer that. Why not Consider Ice roads like North slope. Summer it will be gone. no environmental impact.. you all Know it will have a big Inviornmental impact.

Do any of the creeks along the road options flood or build up ice in the wintertime?

yes

Airport

Is a new airport in Noatak good or bad? Why?

Good. because in 15 years this airport will be in the River!

What airport option do you prefer? Why?

Other side the Creek it'll take a life time till it goes in the River.

If a larger airport was built, would that be better or worse?

Better. It may save lives if Wether is bad in OTZ, Nome Red Dog. It also may benafit us with Cheaper fuel food if we get them in large bulk.

But you know its not my decision Im just doing this for the Hell of it.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

What road option, if any, do you prefer? Why?

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

Yes:
Erosion of old Airport

What airport option do you prefer? Why?

Option 2 - Close to town

If a larger airport was built, would that be better or worse?

Better

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

CONSULT WITH OUR ELDERS

What road option, if any, do you prefer? Why?

CONSULT WITH OUR ELDERS

Do any of the creeks along the road options flood or build up ice in the wintertime?

DONT KNOW

Airport

Is a new airport in Noatak good or bad? Why?

GOOD

What airport option do you prefer? Why?

DON'T KNOW

If a larger airport was built, would that be better or worse?

BETTER

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

What road option, if any, do you prefer? Why?

leave it to the elders

Do any of the creeks along the road options flood or build up ice in the wintertime?

Airport

Is a new airport in Noatak good or bad? Why?

What airport option do you prefer? Why?

leave to the elders

If a larger airport was built, would that be better or worse?

Good!!

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good & Bad

What road option, if any, do you prefer? Why?

A-3 closer

Do any of the creeks along the road options flood or build up ice in the wintertime?

?

Airport

Is a new airport in Noatak good or bad? Why?

What airport option do you prefer? Why?

If a larger airport was built, would that be better or worse?

better, bigger planes, cheaper freight prices maybe

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good, it will provide lower cost of fuel, housing material etc. Also, income for the village in the future. Potential employment for our children.

What road option, if any, do you prefer? Why?

?

Do any of the creeks along the road options flood or build up ice in the wintertime?

?

Airport

Is a new airport in Noatak good or bad? Why?

Bad, close to erosion - and it won't be long before our children have to deal w/ it.

What airport option do you prefer? Why?

A 1

If a larger airport was built, would that be better or worse?

Better, more convient for Red Dog also.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

Good. When there no traffic, it would give us access to use the road instead of the tundra

What road option, if any, do you prefer? Why?

A 2, It would give us more of a straight road than A1.

Do any of the creeks along the road options flood or build up ice in the wintertime?

Yes

Airport

Is a new airport in Noatak good or bad? Why?

Bad. It flies right over those occupied homes and rattles the house.

What airport option do you prefer? Why?

Same as #2.

If a larger airport was built, would that be better or worse?

To me it would be better for emergency landing. Not sure re always foggy and we do need an big airport for that.

Noatak Road and Airport Questionnaire

Road

Is a road connecting Noatak to Red Dog Mine road good or bad? Why?

No Road

What road option, if any, do you prefer? Why?

~~Red~~ Road

Do any of the creeks along the road options flood or build up ice in the wintertime?

Never Flood

Airport

Is a new airport in Noatak good or bad? Why?

What airport option do you prefer? Why?

7
2

If a larger airport was built, would that be better or worse?

better

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

NORTHERN REGION PRECONSTRUCTION

FRANK H. MURKOWSKI, GOVERNOR

2301 PEGER ROAD
FAIRBANKS, ALASKA 99709-5399
TELEPHONE: (907) 451-2274
TDD: (907) 451-2363
FAX: (907) 451-5126

March 6, 2006

Re: Noatak Airport Relocation
Project Number: 61478

Subject: Request for Scoping Comments

The Alaska Department of Transportation and Public Facilities (ADOT&PF), in cooperation with the Federal Aviation Administration (FAA), is proposing a project to relocate the Noatak Airport. The Noatak Airport does not meet current FAA safety guidelines for aircraft using the runway. The safety area length and width are deficient, the apron has an insufficient set back distance from the runway, and there are airspace obstructions. In addition, a recent riverbank erosion study conducted by the Alaska Native Tribal Health Consortium on the Noatak River indicates that the airport embankment will be at risk by 2010. For these reasons, this project is being developed to re-locate the airport to a more suitable location.

The village of Noatak is approximately 55 miles north of Kotzebue and 70 miles north of the Arctic Circle. The existing airport is located on the west shore of the Noatak River, south of the village of Noatak, at approximately 67.57° North (N) Latitude and 162.97° West (W) Longitude, within Sections 16, 17, 20 and 21; Township (T) 25N; Range (R) 19W; Kateel River Meridian (KRM). This location is identified on Figure_1.

The new facility will be designed to accommodate large, cargo-hauling aircraft. This typically requires a runway length between 3,300 to 5,000-feet (ft). It will include an apron and taxiway that meet FAA safety guidelines and an airport access road. The proposed new airport site is west of the existing airport, in Sections 18, 19 and 30; T 25N; R 19W; KRM. The proposed airport access road alignment is based on the selection of a bridge site location at Kuchoruk Creek. These locations are shown on Figure_2. In addition, an aboveground electric line would be extended to the proposed airport site from the village.

Two local material sites have been proposed to supply construction fill for this project and are being evaluated. One site is located at the northwest end of the proposed airport location, in Sections 28-32, T 25N, R 19W, KRM. The other site is located on a gravel bar within the Noatak River, approximately 3-4 miles downstream from the village, in Sections 12 and 13, T 25N, R 20W, KRM.

In order to ensure potential impacts are properly identified, your agency's input at this time is important. Identifying environmental concerns early will help facilitate an efficient project development process.

ADOT&PF requests your comments on the proposed project, particularly in regard to resources under your jurisdiction. Your comments will be included in the project environmental document.

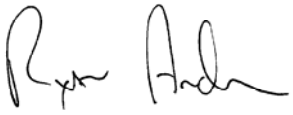
ADOT&PF expects to complete an Environmental Assessment (EA) to comply with the National Environmental Policy Act (NEPA) requirements for this project. Construction is currently scheduled to begin as early as Summer 2007.

The enclosures summarize preliminary research results for your review. Based on agency and public input, and additional engineering evaluations, the goal is to refine the project scope and identify issues of concern.

We are requesting that you send your written comments to our office no later than April 7, 2006.

If you have any questions regarding the proposed project, please contact me at 907/451-5129. You may also submit comments by mail to ADOT&PF, Attn: Ryan Anderson, P.E., 2301 Peger Road, Fairbanks, Alaska 99701, or e-mail your comments to ryan_anderson@state.ak.us.

Sincerely,



Ryan Anderson, P.E.
Engineering Manager

Enclosures: Appendix – Preliminary Research Results
Figure 1 – Location & Vicinity Map
Figure 2 – Airport Site Map (Aerial Photograph with Material Sites)

cc: Robert McLean, DNR/OHMP, Fairbanks
Christine Ballard, DNR/OPMP, Anchorage
Larry Bright, USFWS, Fairbanks
Jeanne Hanson, NMFS, Anchorage
Michiel Holley, USACE
Marcia Combes, EPA, Anchorage
James Helfinstein, USCG, Juneau
Mayor Ross Schaeffer, NWAB
Walter Porter, NWAB, Kotzebue
Helen Bolen, Maniilaq Association, Kotzebue
Marie Greene, NANA Corp., Kotzebue
James Adams, Native Village of Noatak

Chuck Howe, ADOT&PF, Fairbanks
Pamela Lewis, ADOT&PF, Fairbanks
Patty Dalley-Miller, ADOT&PF, Fairbanks
Bill O'Halloran, ADOT&PF, Fairbanks
Andrew Niemiec, ADOT&PF, Fairbanks
John F. Bennett, ADOT&PF, Fairbanks
Patrick Kelliher, ADOT&PF, Fairbanks
Howard Thies, ADOT&PF, Fairbanks

Preliminary Research Results

Contaminated Sites, Spills, and Underground Storage Tanks:
A search of the Alaska Department of Environmental Coordination (ADEC) databases found there have not been any contaminant releases, spills, or underground storage tank leaks within the area proposed for development by this project.

Anadromous Fish Streams:
According to the Alaska Department of Fish and Game (ADF&G) Anadromous Waters Catalog, the Noatak River (ADF&G No. 331-00-10290) has Chinook salmon, sockeye salmon, coho salmon, chum salmon, pink salmon, Dolly Varden, and whitefish. Kuchoruk Creek is not listed in the ADF&G Anadromous Waters Catalog because the ADF&G has not surveyed this stream. However, J Johnson of ADF&G stated chum salmon are likely to be present in Kuchoruk Creek (Personal Communication, 02/09/06).

Federal and State Refuges, Critical Habitat Areas, and Sanctuaries:
The project site lies approximately 6 miles west of the Noatak National Preserve, 12 miles east of the Cape Krusenstern National Monument, and 80 miles northwest of the Selawik National Wildlife Refuge. A review of the ADF&G publication *State of Alaska Refuges, Critical Habitat Areas, and Sanctuaries* found that there are no state refuges, critical habitat areas, or sanctuaries in the project vicinity.

Historical, Archeological and Cultural Properties:
A review of the *Alaska Heritage Resources Survey* on October 6, 2005, indicates there are no identified historic properties within 2 miles of the airport and within 1.5 miles of town.

Coastal Zone Management:
The project area is within the Coastal Zone and the Northwest Arctic Borough Local District. A Coastal Project Questionnaire and Certification Statement would be filed with the DNR Office of Project Management and Permitting for this project.

Navigability:
The U.S. Army Corps of Engineers (USACE) Navigable Waters web page indicates the Noatak River is navigable. Kuchoruk Creek is not listed as a navigable waterway by the USACE.

Wetlands:
No wetlands data was available on the *National Wetlands Inventory* maps. However, aerial photography and topographic maps suggest the greater part of the project vicinity is wetlands, which are likely jurisdictional to the USACE. A wetland delineation will be performed to obtain a jurisdictional determination form the USACE.

Threatened and Endangered Species:
The U.S. Fish & Wildlife (USFWS) Threatened & Endangered (T&E) Species System (TESS) indicates there are 12 T&E animal species and 1 T&E plant species in Alaska. Animal species include the Short-tailed Albatross, Eskimo Curlew, Spectacled Eider, Steller's Eider, Canada Lynx, Northern Sea Otter, Leatherback Sea Turtle, Steller Sea-lion (eastern population), Steller Sea-lion (western population), Bowhead Whale, Finback Whale, and Humpback Whale. The plant species is the Aleutian Shield Fern. Noatak lies within the migratory pathway of 2 threatened species - Stellar's Eiders and Spectacled Eiders. However, the project vicinity does not lie within the breeding or wintering range of these species. In accordance with Section 7 of the Endangered Species Act, the USFWS and National Marine Fisheries Service (NMFS) will be consulted to confirm there are no known T&E species in the project vicinity.

Eagles:
The project vicinity is a wetland characterized by barren tundra and interspersed small lakes, which is not indicative of habitat for eagles. Research on the breeding range for eagles further suggests the project vicinity lies outside their range. An eagle survey may be conducted if available information is outdated.

Essential Fish Habitat (EFH):
The Noatak River, on the east side of the Noatak Airport, is designated as EFH for 5 species of salmon per 50 CFR 600.10 because the river's aquatic habitat provides for spawning, breeding, feeding, or growth to maturity for the species' full life cycles. Pink and chum salmon are known to spawn in this reach of the waterbody. Kuchoruk Creek has not been surveyed by the ADF&G. However, J Johnson of ADF&G stated chum salmon are likely to be present in Kuchoruk Creek, which would designate this stream as EFH (Personal Communication, 02/09/06).

U.S. Department
of Transportation

**Federal Aviation
Administration**

AIRPORTS DIVISION

FAA Alaskan Region
222 W. 7th Avenue, Box 14
Anchorage, Alaska
99513-7587

March 7, 2006

Noatak Airport Relocation
Government-to-Government Consultation Initiation

James Adams
President
Native Village of Noatak
P.O. Box 89
Noatak, Alaska 99761

Dear Mr. Adams,

The Federal Aviation Administration (FAA) in cooperation with the Alaska Department of Transportation and Public Facilities (DOT&PF), owner and operator of Noatak Airport, is proposing to relocate Noatak Airport as described below (Figure 1, Location and Vicinity Map, enclosed).

Purpose of Government-to-Government Consultation
The primary purpose of government-to-government consultation as described in Federal Executive Order 13175 "Consultation and Coordination with Indian Tribal Governments" and FAA's Order 1210.20 "American Indian and Alaska Native Tribal Consultation Policy and Procedures" is to ensure that Federally Recognized Tribes are given the opportunity to provide meaningful and timely input regarding proposed FAA actions that uniquely or significantly affect Tribes.

Consultation Initiation
With this letter, the FAA is seeking input on concerns that uniquely or significantly affect your Tribe related to planned and proposed airport improvements. Early identification of Tribal concerns will allow the FAA and the airport owner and operator to consider ways to avoid and minimize potential impacts to Tribal resources and practices as project planning and alternatives are developed and refined. We would be pleased to discuss details of the proposed project with you.

Project Information
Noatak is approximately 55 miles north of Kotzebue and 70 miles north of the Arctic Circle. The project site is located south of the village, which is on the west shore of the Noatak River at approximately 67.57° North Latitude and 162.97° West Longitude (Sections 16-21 & 28-32 - T25N, R19W; Sections 12 & 13 - T25N, R20W; Kateel River Meridian). As shown on Figure 2, the proposed project will relocate the airport approximately 1.5 miles west of its current location.

The Noatak Airport does not meet current FAA safety guidelines for aircraft using the runway. The safety area length and width are deficient; the apron has an insufficient set back distance from the runway; and, there are airspace obstructions. In addition, a recent riverbank erosion study conducted by the Alaska Native Tribal Health Consortium on the Noatak River indicates

that the airport embankment will be at risk by 2010. For these reasons, this project is being developed to relocate the airport to a more suitable location.

The new facility will be designed to accommodate large, cargo-hauling aircraft. This typically requires a runway length between 3,300 to 5,000-feet (ft). It will include an apron and taxiway that meet FAA safety guidelines and an airport access road. The proposed new airport site is west of the existing airport, in Sections 18, 19 and 30; T 25N; R 19W; KRM. The proposed airport access road alignment is based on the selection of a bridge site location at Kuchoruk Creek. These locations are shown on Figure 2. In addition, an aboveground electric line would be extended to the proposed airport site from the village. Construction could begin as early as 2007.

Two local material sites have been proposed to supply construction fill for this project and are being evaluated. One site is located at the northwest end of the proposed airport location, in Sections 28-32, T 25N, R 19W, KRM. The other site is located on a gravel bar within the Noatak River, approximately 3-4 miles downstream from the village, in Sections 12 and 13, T 25N, R 20W, KRM. Figure 2 shows the proposed material sites.

Confidentiality

We understand that you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional, and cultural importance to the Tribe. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

FAA Contact Information

If you wish to provide comments related to this proposed project, please contact Matt Freeman, FAA Project Manager, at the address above, at 907-271-5455, or by e-mail at matthew.freeman@faa.gov; or please feel free to contact me directly.

Airport Owner and Operator Contact Information

In addition, you may wish to include the Airport owner and operator, DOT&PF, in your response so that they may be aware of your comments. The DOT&PF's point of contact for this project is:

Ryan Anderson, Engineering Manager
DOT&PF, Preconstruction
2301 Peger Road
Fairbanks, Alaska 99709-5316
(907) 451-5129
ryan_anderson@dot.state.ak.us

Project Consultation Options Form

Your timely response will greatly assist us in incorporating your concerns into project planning. For that purpose, we respectfully request that you complete the enclosed Project Consultation Options form and forward it to the FAA within 30 days of your receipt of this correspondence.

Sincerely,

Patricia A Lee

for Debbie Roth
Deputy Manager
Airports Division

Enclosures:

Tribal Consultation Options form
Figure 1 - Location and Vicinity Map
Figure 2 - Airport Site Map (Aerial Photograph with Material Sites)

Cc: Matt Freeman, FAA Project Manager
Chuck Howe, DOT&PF Regional Environmental Coordinator
Ryan Anderson, DOT&PF Engineering Manager

Tribal Consultation Options

The Village of Noatak

Project Name: **Noatak Airport Relocation**
Federal/State Project Numbers: **PENDING/61478**

Please check the appropriate response:

____ The **Village of Noatak** will continue coordination for this proposed project directly with Owner / Operator of the airport. *Please note that if the Tribe initially chooses to consult / coordinate with the airport owner/operator, the Tribe may later decide to consult directly with the FAA.*

____ The **Village of Noatak** is a federally recognized tribe, and would like to consult directly with the Federal Aviation Administration in a government-to-government relationship for this proposed project.

____ The **Village of Noatak** has no interest associated with this proposed project and further consultation is not required.

Use the back of this form or additional sheets if you would like to make additional comments.

_____ _____
Tribal Leader (Please print) Telephone

_____ _____
Tribal Leader (Signature) Date

Mail:

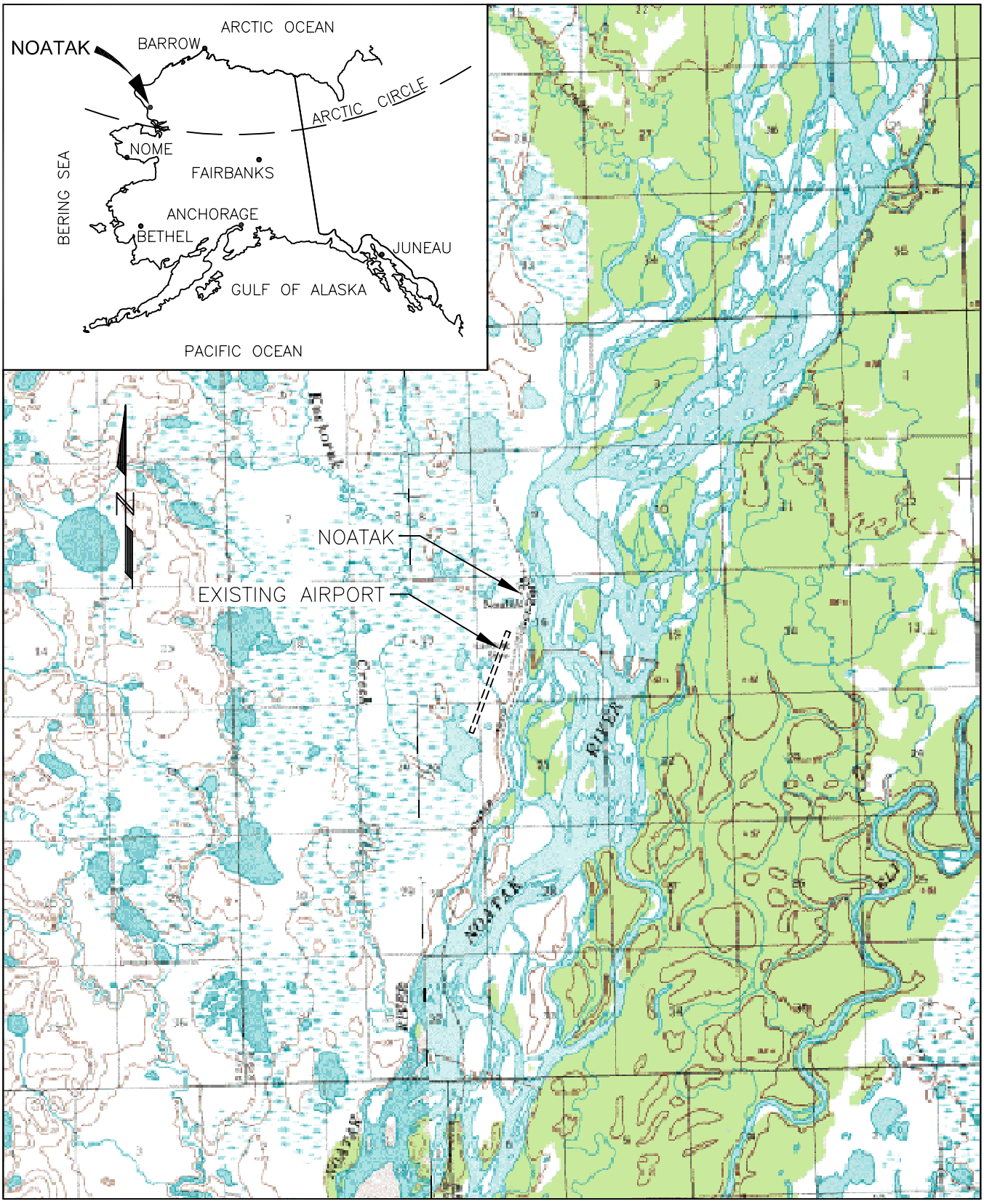
Phone:
Fax:
e-mail:
Other: (please describe)

If you have chosen to proceed with consultation, please identify a Tribal Representative for the consultation.

_____ _____
Name of Formal Tribal Representative (Please print) Telephone

_____ _____
Name of Formal Tribal Representative (Signature) Date

Please mail to: Debbie Roth, Assistant Manager Airports Division, FAA Alaska Region, 222 W. 7th Ave., Box 14, Anchorage, AK 99513-7587
Or, fax to: 907-271-2851

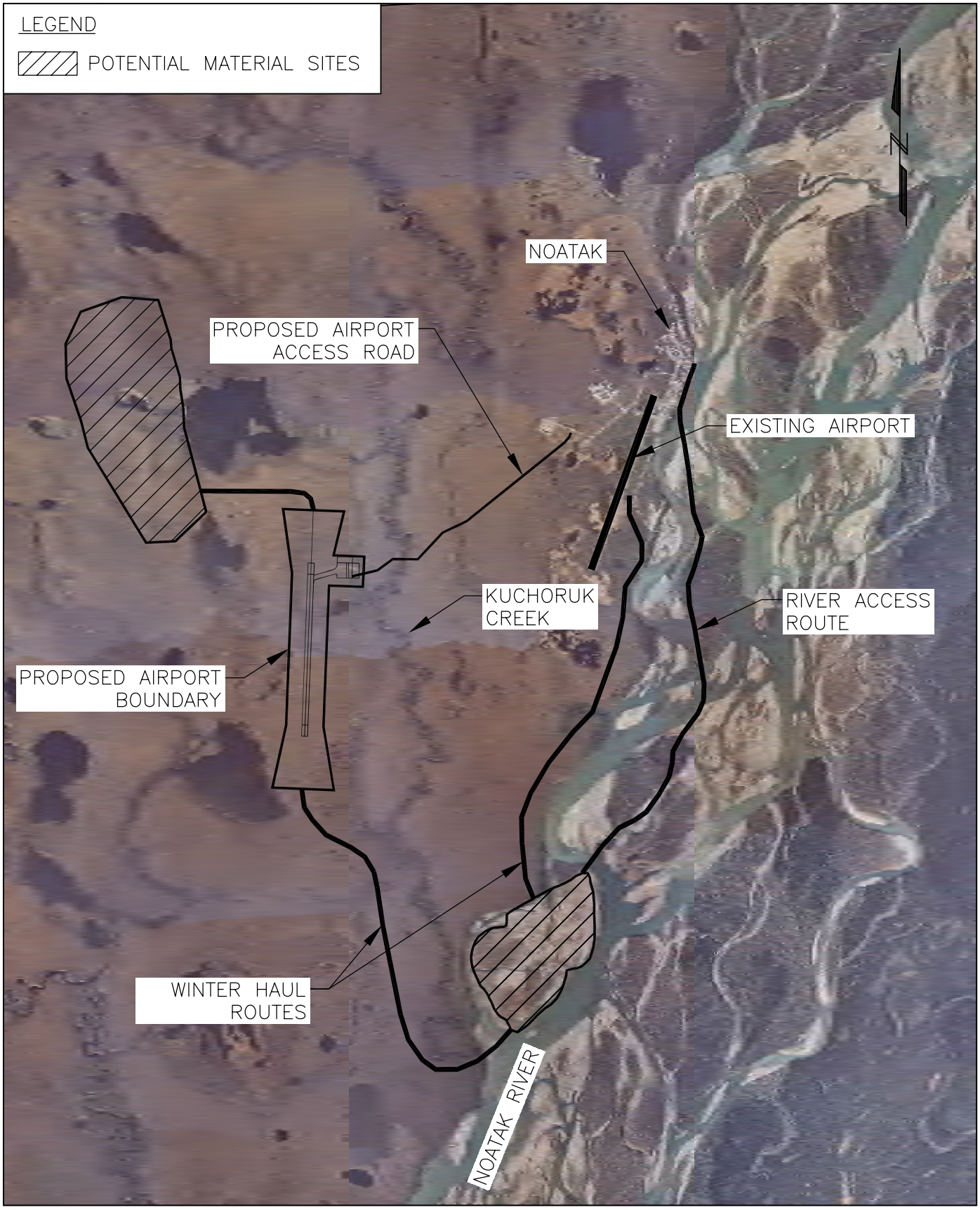


PROJECT SITE

Sec. 16–21, 28–32;
T 25 N, R 19 W
Sec. 12, 13; T 25 N, R 20 W
Kateel River Meridian
NOT TO SCALE

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

PROJECT NO.		FIGURE
61478	LOCATION & VICINITY MAP	1



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SCALE IN MILES

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

PROJECT NO. 61478	AIRPORT SITE MAP	FIGURE 2

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Fairbanks Fish and Wildlife Field Office
101 12th Avenue, Box 19, Room 110
Fairbanks, Alaska 99701
May 12, 2006

Mr. Ryan Anderson, P.E.
ADOT&PF – Design
2301 Peger Road
Fairbanks, AK 99709

Re: Noatak Airport Relocation

Dear Mr. Anderson,

Thank you for your letter and e-mail regarding endangered and threatened species pursuant to Section 7 of the Endangered Species Act of 1973, as amended (Act). Based on your letter, we understand that you are developing a NEPA document for a proposed project to relocate the airport in the Village of Noatak. The location provided is Sections 16, 17, 20, and 21, T25N, R19W, Kateel River Meridian. Two local material sites will provide fill material for the project.

This area is on the fringe of the breeding range of the threatened spectacled eider (*Somateria fischeri*), and is within their migration route. The Alaska-breeding population of Steller's eiders (*Polysticta stelleri*), also listed as threatened, breeds and winters outside the range of the proposed project, but possibly migrates through the area.

The information available on the migration routes of these listed species suggests that the few are likely to pass through the immediate project area, and there are no contemporary records suggesting that either species breeds along the Noatak River. The Service therefore concludes that the proposed sale is not likely to adversely affect listed species. Preparation of a Biological Assessment or further consultation under section 7 of the Act regarding the issuance of this permit is not necessary.

This conclusion applies only to endangered and threatened species under our jurisdiction. It does not preclude the need to comply with other environmental legislation or regulations such as the Clean Water Act. Thank you for your cooperation in meeting our joint responsibilities under the Act. If you need further assistance, please contact Sarah Conn at (907) 456-0499.

Sincerely,

Ted Swem

Ted Swem
Branch Chief,
Endangered Species

Noatak Airport Relocation
Project No. 61478

Project Update
July 24, 2006

We continue to perform preliminary design and environmental work for the project. The project is currently scheduled for Construction for 2008 or later depending on funding.

Current Design Status:

- Phase 1 of the Geotechnical program is complete. Sufficient drilling is complete to develop runway alignments. More geotechnical work is needed to identify other potential material sites.
- Preliminary Design work evaluating feasibility of runway/access road alignments, as well as material site locations is in progress.

Current Environmental Status:

- Completed oral history and archival research for historic and cultural resources.
- Completed wetlands mapping using aerial photography.
- Agency and Tribal scoping in progress.
- Environmental Document preparation in progress.

Upcoming Work:

- Environmental Fieldwork Noatak to evaluate accuracy of Wetlands and Habitat Mapping.
- DOT&PF site visit to evaluate material sites.
- Public Meeting in Mid to Late August (Meeting notices will be sent soon).

Feel free to contact the DOT&PF project manager with questions/comments:

Ryan Anderson, P.E.
Alaska DOT&PF, Northern Region
2301 Peger Road
Fairbanks, AK 99709

907-451-5129

Noatak Airport Relocation Project
Notice of Public Meeting

The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Aviation Administration (FAA) is planning to relocate the Noatak Airport. In addition to the current airport experiencing significant erosion, the existing runway is too short, too narrow, and has non-standard runway safety areas. The purpose of this project is to construct an airport in Noatak that meets the forecasted aviation demands for the community. DOT&PF is holding a Public Meeting in Noatak on August 17th at 1:00 PM to discuss the proposed project and gather community input.

Potential Project elements:

- Airport relocation to a more suitable site
- Runway adequate for design aircraft
- Apron and taxiway designed to meet FAA safety guidelindes
- Airport access road
- Electric line extension
- Property acquisition for new airport site and access road

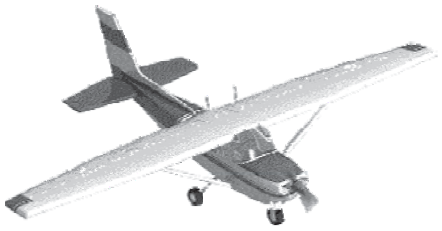
How does this impact the local community? Consultants for DOT&PF are preparing an Environmental Assessment (EA) to assess local impacts. Preliminary research and resource agency comments indicate the following impact areas are of special concern :

- Material site impacts
- Wetland fill
- Fish and wildlife habitat
- Property acquisition

DOT&PF requests your attendance at the Public Meeting to learn about the project, ask questions, and provide comments.

What has happened so far?

DOT&PF has selected a preferred airport location and access road alignment. On-going materials investigations have identified potential material sites. A cultural resource investigation has identified areas of potential concern and a wetlands delineation is scheduled to determine wetland impacts. DOT&PF has solicited input from resource agencies about the project. DOT&PF contracted with USKH, Inc. to complete environmental and public involvement activities.



What is happening now?

DOT&PF is holding a Public Meeting to discuss the project on August 17th at 1:00 PM at the Noatak School. Refreshments will be available. If you have questions, please contact Ryan Anderson at the contact information below.

WE WOULD LIKE TO HEAR FROM YOU!

PLEASE SUBMIT WRITTEN COMMENTS TO:

Ryan Anderson, P.E. DOT&PF
Engineering Manager
Northern Region DOT&PF Design
2301 Peger Road
Fairbanks, AK 99709
Phone: (907) 451-5129
Fax: (907) 451-5126
Email: ryan_anderson@dot.state.ak.us

BOX HOLDER
Noatak, ALASKA 99761

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

Computations

For.....

Item No. _____
DATE _____
Project No. _____
Project Name _____
Calc. by _____
Checked by _____

Noatak Airport Relocation

Sign in Sheet

Name	Phone #
Ryan Anderson	451-5129
Ken Karle	683-2811
Eugene Monroe Sr.	485-2209
Bernice Monroe	485-2209
Vincent Onalik	485-2039
Elsie J. Adams	485-2039
Alex Onalik	485-2197
Leslie D Burns	485 2054
Charlie K Barger Sr	
Joan L Booth	485-2138
Andrew Booth	485-2406
Adrienne Mitchell	485 2287
Roza Mitchell	
Karen Mitchell	485-2052
Victor Onalik Sr	485-2052
Edith Onalik	485-2177
Herbert Walton	485-2251
Benjamin Shaw Sr.	485-2144
Matthew Sky Jr	485-2088
Nozmond F Monroe	

Sheet_____ of____ Sheets_____

25D-120 (5/84)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

Computations

Item No. ________
DATE ________
Project No. ________
Project Name ________
Calc. by ________
Checked by ________

For..

James Adams	Phone #
	485-2308
Dolly Sage	485-2228
Mary Arey	485-2121
Polly Vestal	485-2095
Myrtle Adams	485-2300
Eugene Monroe Jr.	485-2209
Roger Mitchell JR	485-2287
Elsie Goodwin	
Philip Booth	485-2276
Barbara Wesley	485-2314
Rosella Penn	485-2027
Arlene Moo	485-2190 or 2172 work
[illegible]	485-2358
David Luther	485-2444
Robert Kirk	485-2126
Della Luther	485-2354
Janet N. Mills	485-2189
Leonard Walton	
[illegible]	485-2139 hm
Johnson Booth Jr.	485-2001 (home)
Cheryl Booth	485-2032 (home) 485-2162 (wk)
Danny Adams	485-2039
Bessie Bargen	485-2053

Sheet____ of ____ Sheets______
25D-120 (5/84)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

Computations

For Comment Sheet

Item No. _____
DATE _____
Project No. _____
Project Name _____
Calc. by _____
Checked by _____

Name	Comment
Frank Adams Sr.	- Need to have new gravel pit either in the Hills or other place beside old one. - Road to Airport should be wide enough for inbound & outbound vehicles. - Bridge need to be wide Also for vechiles trucks. Four wheelers etc...

Return to DOT&PF staff or mail to:
DOT&PF
Ryan Anderson
2301 Peger Rd
FBKS, AK
99725

Sheet _____ of _____ Sheets _____

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

Computations

For Comment Sheet

Item No. _____
DATE _____
Project No. _____
Project Name _____
Calc. by _____
Checked by _____

Name	Comment
Barges	Get the Gravel from UP river to get our Channel BACK. So that the Barges would Haul our Groceries & fuel

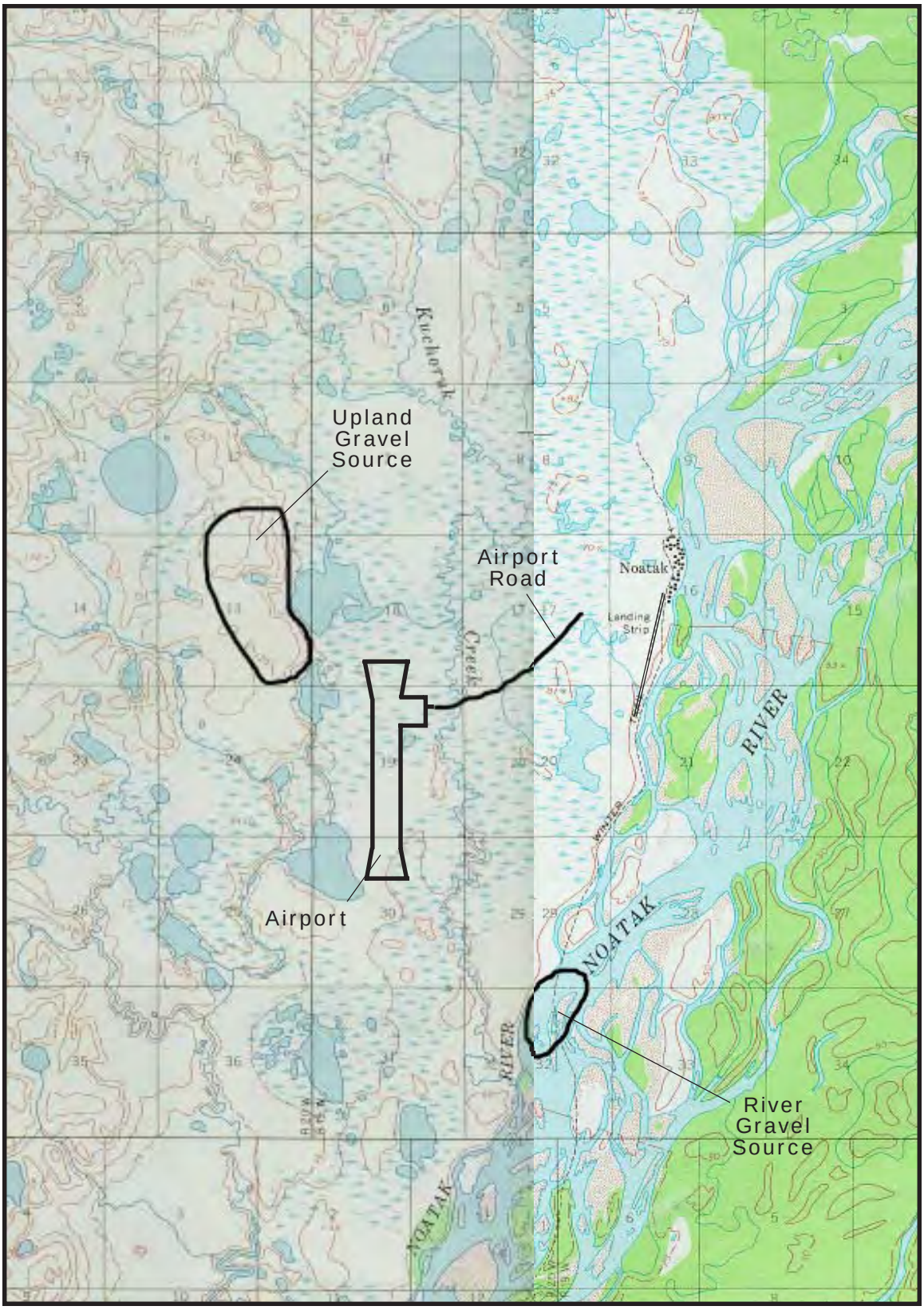
Return to DOT&PF staff or mail to:
DOT&PF
Ryan Anderson
2301 Peger Rd
FBKS, AK
99725

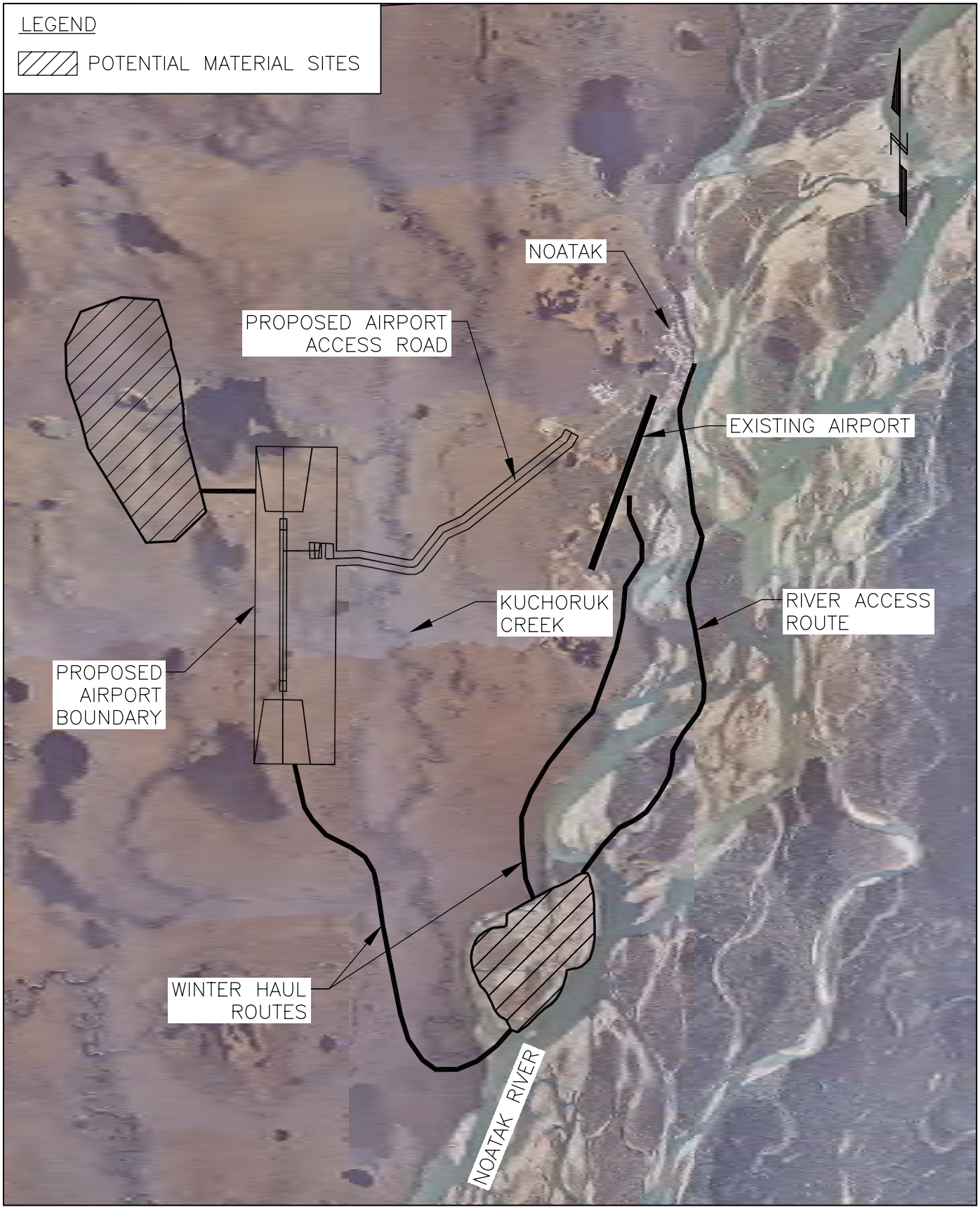
Sheet _____ of ____ Sheets _____

NOATAK AIRPORT RELOCATION

ENVIRONMENTAL ACTIVITIES SCHEDULE

Field Work and Data Gathering	**Summer 2006**
Resource Agency Scoping	**Summer 2006**
Public Meeting	**August 2006**
Draft Permits	**Fall 2006**
Draft Environmental Assessment	**January 2007**
EA Review	**February 2007**
Final EA and Decision Document	**March 2007**
Final Permits	**Spring 2007**


Upland
Gravel
Source
Airport
Road
Airport
River
Gravel
Source
Kuchorak
Creek
Noatak
Landing
Strip
NOATAK
RIVER



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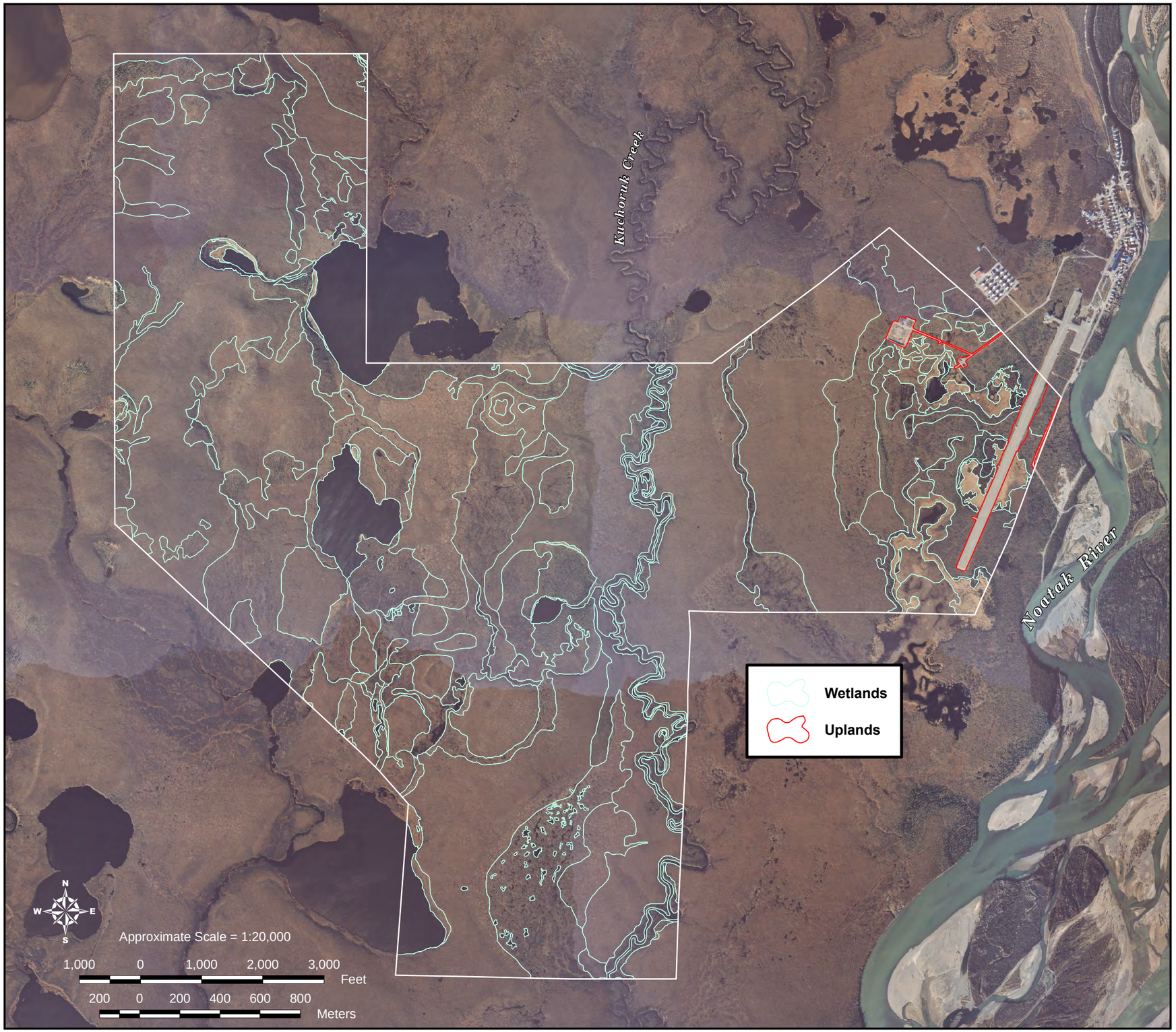
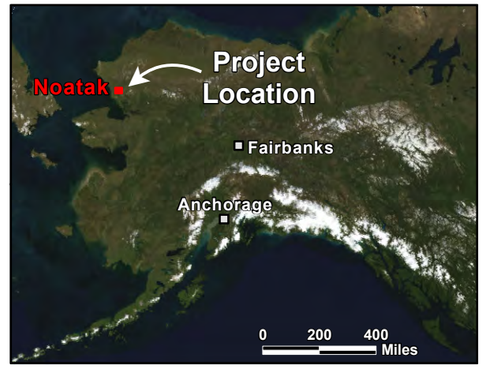
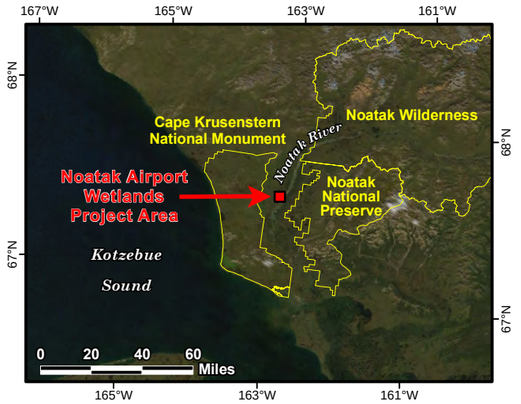
SCALE IN MILES

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

PROJECT NO. 61478	AIRPORT SITE MAP	FIGURE X







Notes:
Wetland map imagery is true-color photography acquired October 2005 by AeroMap U.S.
Map projection: ASP Zone 7, NAD83, US foot
Inset map imagery: Blue Marble Next Generation, NASA

Wetlands Determination and Habitat Assessment of Noatak Airport, Alaska

Figure 1. Wetland Boundaries

map prepared by:
ABR, Inc. *environmental research & services*

9 March 2006 | ABR File: Noatak_Airport_Wetlands_Photo_06-201-1.mxd

Noatak Airport Relocation Project #: 61478
Project Update
Public Meeting Notes

September 24, 2009
3:30 P.M. – 5:30 P.M.
School Gym

Meeting Summary:

DOT&PF project personnel opened the meeting by updating the group about the airport relocation project. The DOT&PF and USKH project team described: 1. the project scope; 2. what work has been completed to date; 3. where the project is today; and 3. next steps. DOT&PF and USKH staff answered questions from the community and generally discussed the project in an open house format. Meeting attendees and individual community comments are identified on the attached sign-in sheets and comment forms.

Comments from the Community during General Discussion:

- Use the existing trail for the access road and use the northern apron option - would be closer to the subdivision.
- Maybe keep the old bridge as a backup or to be used for different purposes.
- What about relocating fuel tanks closer to the airport? Move fuel farm.
- Is airport in a place where you could expand 20 years down the road? Yes, ROW acquisition would accommodate future expansions.
- What happens to the fuel bladders at the airport? Erosion from the Noatak River could pose a threat to the bladders.
- What is the status of the road to the port site project? Previously DOT&PF had discussed a road to the port site, and how an airport could be an alternate for Red Dog. Do the current runway plans take into account a runway suitable to meet Red Dog's needs?
- 5000' may not be long enough. A longer runway is needed.
- Northern Air Cargo flies into Noatak on occasion with their DC-6's. If we have a longer runway they may fly in with 737's.
- From an engineering standpoint, which apron option will be selected? What is being considered when thinking about apron sites?
- If a bridge is constructed, who will perform the maintenance and how will it be performed?
- We are worried about the cost to drive to the new airport. Gas is very expensive. Closer is better.
- Where will the material come from?
- Erosion from the Noatak has been significant since the 1950's.
- Be sure to address the fuel issues at the new airport. A new system will be needed to get the fuel from the airport to Noatak.

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

PUBLIC MEETING

SIGN IN SHEET

PROJECT NAME: Noatak Airport Relocation **DATE: September 24, 2009**

NAME (PLEASE PRINT)	*MAILING ADDRESS	*EMAIL	PHONE
MARY AREY	P.O. Box 110	—	(907) 485-2121
Rachel Sherman	P.O. Box 33	kellyriver12@yahoo.com	(907) 485 2251
Carl Wilson	P.O. Box 54		
Clark Swan	Box 12		485 2054
David Luther	Box 70		485 - 2444
MATT CLARK	BOX 140	MClark@noatak.org	485 3376
Caleb Sage	Box 56		485-2228

PROJECT NAME: Noatak Airport Relocation **DATE: September 24, 2009**

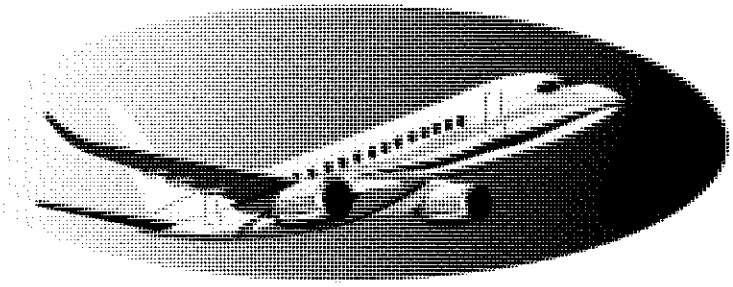
NAME (PLEASE PRINT)	*MAILING ADDRESS	*EMAIL	PHONE
Mary Wesley	11 Noatak AK 99761		485-2240
George Onalik	Noatak AK 99761		485-2455
Elsie Dooka	Noatak AK 99761		485-2376
Alvin Ashby Sr	PO Box 181 Noatak	tribeadmen@nautaag.org	485-2173
Tina Mills	Box 104 Noatak		485-2165
Lonnie Arnold	Box 17 Noatak		485-2211
Barbara Wesley			
Janet Mills	Box 58 Noatak	jmills@noatak.nwarctic.org	485-2189
Louise Sherman	PO Box 91 Noatak AK	lsgsherman@msn.com	485-2284
Michael Sherman Sr	Box 97 Noatak AK	mykezmyk@yahoo.com	485-2284

PROJECT NAME: Noatak Airport Relocation **DATE: September 24, 2009**

NAME (PLEASE PRINT)	*MAILING ADDRESS	*EMAIL	PHONE
Stella Shy	Box 95 Noatak AK 99761	educationcoordinator @ nautaaq.org	485-2173 Ext. 47
Dolly M. Booth	Box 34 Noatak, AK. 99761-0034		485-2355
Walter Downey	Box 61 Noatak AK 99761 walter.downey@yahoo.com	—	412-0376
Cyril Norton	Box 38 Noatak AK. 99761	wayne_wtk@yahoo.com	485-1900
Bessie Monroe	Box 147 Noatak, AK 99761	polaris 500xc0l@yahoo	485-2198
Leslie D Burns	P.O Box 15 Noatak AK 9976	—	485-2197
Wilford Booth	Box 64	MBooth@otz.net	485-2117
Joey Walton	POBOX30 NoatakAK99761	N/A	485-2425
Paul Nordonsc	Box 69	—	485-2164
Vincent Onalik Sr	Box 141 Noatak AK.	Tripletwins@yahoo	485 2068

PROJECT NAME: Noatak Airport Relocation **DATE: September 24, 2009**

NAME (PLEASE PRINT)	*MAILING ADDRESS	*EMAIL	PHONE
Emmanuel K. Ashby	P.O. Box 88 Noatak, AK 99761		(907) 485-2173 message
Walter Wilson	P.O. Box 42		



NOATAK AIRPORT RELOCATION

September 24, 2009

Comments Are Welcome

Please take a moment to fill out this comment sheet so that we can respond to any comments or questions you may have. If you do not finish the comment sheet today, please mail to Ryan Anderson, P.E., Engineering Manager, Northern Region DOT&PF Design, 2301 Peger Road, Fairbanks, AK 99709; FAX to (907) 451-5129; or email Ryan Anderson@dot.state.ak.us. *Thank you!*

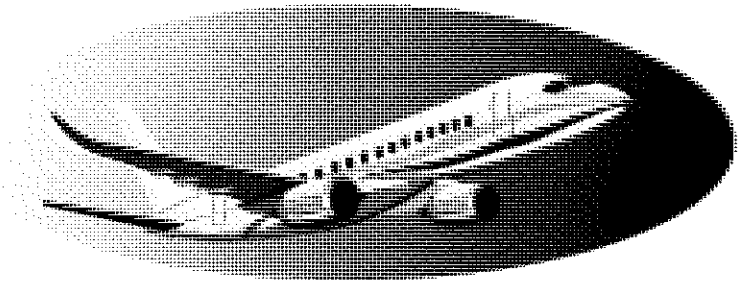
Name: MARY AREY

Address: P.O. Box 110 Noatak, Ak 99761-0110

Telephone:

Please add comments that you think may be helpful during the design development process. Are there any specific elements of the planned improvements that you feel may cause a particular problem?

We Will Need a good warm building for a Waiting Room. If the plane from Otz can make it in 15 or 20 min. We Will have to have a good Agents to Announce before the plane leaves. Or if the plane should Return back due to Weather between here + Otz. How are We going back home if our diner return back ~~to the plane leaves~~ home If the plane Never Make it here As Schedule? We Will Need something for Announcing to Call back home. especially for us Elders.



NOATAK AIRPORT RELOCATION

September 24, 2009

Comments Are Welcome

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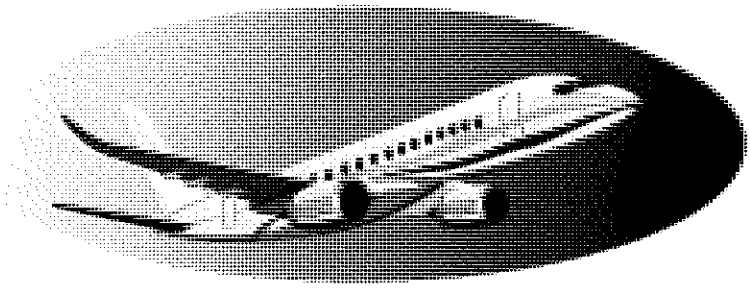
Name: Janet N Mills

Address: Box 58, Noatak AK 99761

Telephone: (907) 485- 2189

Please add comments that you think may be helpful during the design development process. Are there any specific elements of the planned improvements that you feel may cause a particular problem?

I think I would prefer the Northern Apron Option for the specific reason being that may be DOT can build a hanger to house passengers in inclement weather in the winter. Also will be hard on our elders if they were left out in the cold. Another comment is try & choose the shortest ~~road~~ road possible due to high gas prices.



NOATAK AIRPORT RELOCATION

September 24, 2009

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Name: Bernice Monroe

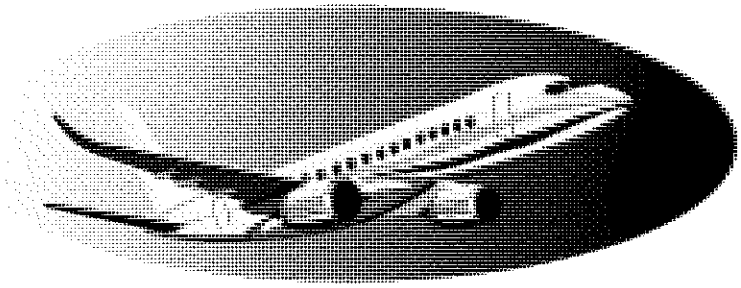
Address: Box 02 Noatak, AK 99761

Telephone: (907) 485-2209

Please add comments that you think may be helpful during the design development process. Are there any specific elements of the planned improvements that you feel may cause a particular problem?

3 Miles Airport is Too Far For elders also For people that will be Transported to Airstrip From the clinic. How many minuits would it take us to go Airport?

I think we are doing okay W/our Air Strip



NOATAK AIRPORT RELOCATION

September 24, 2009

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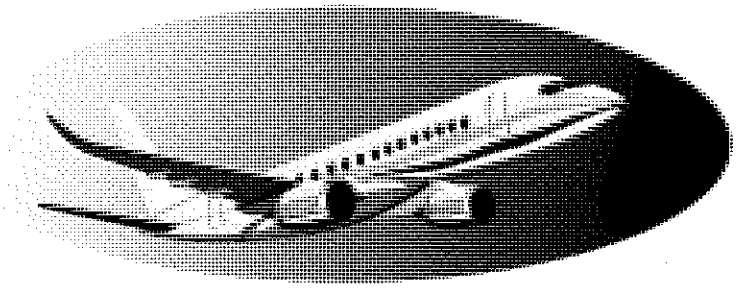
Name: Michael J. Sherman Sr.

Address: P.O. Box 97

Telephone: (907) 485-2284

Please add comments that you think may be helpful during the design development process. Are there any specific elements of the planned improvements that you feel may cause a particular problem?

Any way Noatak can establish it's own ~~DOT~~ to do maintenence on the airport and road



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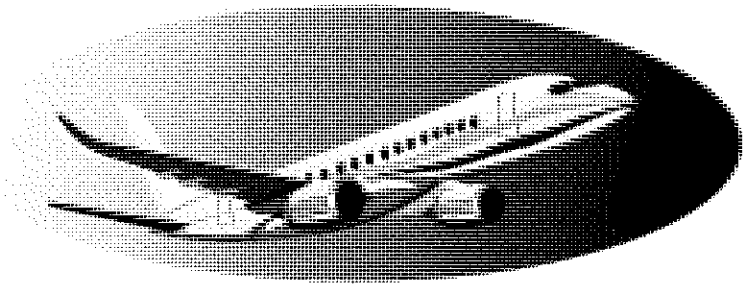
Name: Alvin Ashby Sr

Address: Po Box 131 Noatak, AK 99761

Telephone: (907) 485-2139

Please add comments that you think may be helpful during the design development process. Are there any specific elements of the planned improvements that you feel may cause a particular problem?



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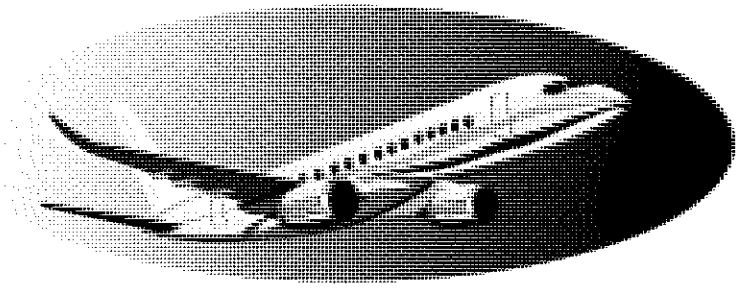
Name:

Address:

Telephone:

Please add comments that you think may be helpful during the design development process. Are there any specific elements of the planned improvements that you feel may cause a particular problem?

Warm up Building with Phone, Turn offs.
local hire, Dot maintained,



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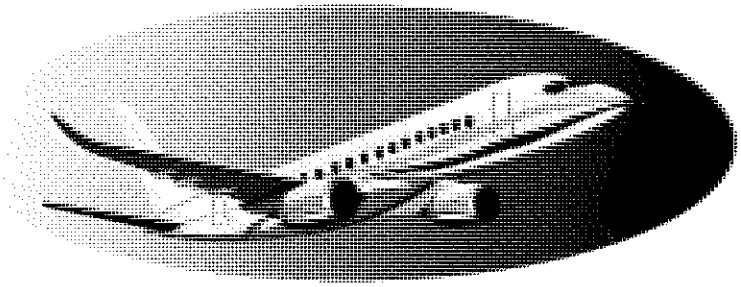
Name:

Address:

Telephone:

Please add comments that you think may be helpful during the design development process. Are there any specific elements of the planned improvements that you feel may cause a particular problem?

Need local Hire if Necessary



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Name:

Address:

Telephone:

Please add comments that you think may be helpful during the design development process. Are there any specific elements of the planned improvements that you feel may cause a particular problem?

Need a shelter built if Airport built away out of town, please.

STATE OF ALASKA
Department of Transportation & Public Facilities
Northern Region

Public Meeting

Noatak Airport Relocation

Project Update

Door Prizes!

Thursday, September 24, 2009
3:30-5:30 p.m.
School Gym

A short summary of the project scope and schedule will be presented at the meeting, after which the project team members will be available to discuss the proposed project, answer questions and take public comments.

The Alaska Department of Transportation and Public Facilities (DOT&PF) in cooperation with the Federal Aviation Administration (FAA) is planning to relocate the Noatak Airport. In addition to the river eroding in the direction of the airport, the existing runway does not meet FAA standards, and has non-standard runway safety areas. The purpose of this project is to relocate the Noatak Airport away from the actively eroding river and to upgrade the facility to meet current and forecasted aviation demands for the community.

The airport relocation may use material available from a material site within the Noatak River approximately 2 miles downstream of the Noatak. If this site was used, material hauling would take place during the winter using ice roads.

How does this impact the local community?

Consultants for DOT&PF are completing an Environmental Assessment (EA) to assess local impacts. Research was completed on impacts to resources in your area that include:

- Wetlands
- Cultural resources
- Material sites
- River Erosion
- Fish Habitat

WE WOULD LIKE TO HEAR FROM YOU!

PLEASE SUBMIT WRITTEN COMMENTS TO:

Ryan Anderson, P.E.
Project Manager
ADOT&PF, Northern Region
2301 Peger Road Fairbanks, AK 99709
Phone: (907) 451-5129
Fax: (907) 451-5126
Email: ryan_anderson@dot.state.ak.us

DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES NORTHERN REGION

Open House

for
Noatak Airport Relocation Project

March 25, 2015

The Department of Transportation & Public Facilities (DOT & PF) is holding an open house to discuss the proposed Noatak Airport Relocation Project. The public is invited to join DOT & PF staff on Wednesday, March 25 at the Napaaqtugmiut School at 6pm. Comment forms will be provided for public input, and DOT & PF designers and environmental staff will be available to answer questions and discuss the project.

This meeting will be held on March 25, 2015, at 6:00p.m. at the Napaaqtugmiut School in Noatak, Alaska.

For further information regarding the meeting or the project, or if you would like to submit comments outside the public meeting, you can contact Chris Johnston, P.E., Engineering Manager, at (907) 451-2322 or send email to *chris.johnston@alaska.gov*. You can also fax your comments to (907) 451-5126.

If you require special accommodations in order to participate in this meeting, please call so arrangements can be made to assist you. To correspond by text telephone (TDD), call (907) 451-2363.

Noatak Airport Relocation Project #: 61478
Project Update
Public Meeting Notes

March 25, 2015
6:00 P.M. – 8:00 P.M.
Napaaqtuġmiut School Gymnasium

Meeting Summary:

The Alaska Department of Transportation & Public Facilities hosted a public meeting and updated the community members of Noatak about the airport relocation project. The DOT&PF presented the descriptions of the project scope work that has been completed to date which includes: imagery of proposed airport, access road alternatives, bridge design, and introducing the next steps toward completion and an estimated projection of construction dates. The DOT&PF held an open Q&C at the end of our discussion and received valuable feedback from various entities and community members sharing their thoughts and concerns.

Questions, Comments, and Responses:

- As riverbank erosion speeds up, would the potential of getting this project pushed forward increase? *Possibly. It will depend on where this project ranks in relation to all the other airport projects in the State.*

- Because we've encountered an average of -40 degree Fahrenheit temperatures, would the design of a new bridge be able to withstand such conditions for an extended period of time? *The bridge will be designed to State highway standards which includes accounting for cold arctic temperatures.*

- Does the access road go through the new airport and who would be responsible for maintaining it? *The airport access road will go from the community to the new airport. Several alternatives are still being considered for where the road will start. The State will be responsible for maintaining the new road unless the community accepts maintenance responsibility.*

- How do we (the community) develop the land, depending upon ownership where the current runway exists? *Who owns the land would depend on the FAA grant assurances and how the land was originally acquired. The FAA may require the community to purchase the land from the State.*

- What does the community or state do with the materials from the existing runway, taxiway and apron? *Unless the gravel can be used for the new airport, the State will likely not have a use for the material. If the community ends up with the land, it could be a local gravel source for community expansion*.

- Who would be responsible for replacement or demo of the existing fuel line which runs from the airport to the native store? If need be, would the contractor be responsible for constructing a road around the existing fuel line in order to preserve and continue its regular usages? *Construction of a fuel line to the new airport and demo of the old line would likely be the community's responsibility. If the old line is still in place, the State's contractor would be responsible for protecting due to construction as well as any other utilities.*

- The community of Noatak owns and contracts Teck Cominco to operate a truck which hauls heating fuel which Teck sells to the community at a lower rate than the local sources. It might be possible to transfer this truck with a tank and use this as a method of fuel transportation from the relocated airport to distribute to houses or the native store. *The fuel transportation will ultimately need to be decided by the community and fuel company. We will design the road to meet Federal Highway and State highway standards so the road would accommodate large vehicles the same as for major highways on the road system.*

- What type of ROW acquisitions would be needed to construct a new road and what determines the geometric properties of this new road? *For new roads, we generally want a 200' to 300' wide right-of-way for the road. This allows room for areas where the road embankment needs to be wider as well as space for utilities or other transportation infrastructure which is often within a road right-of-way. The geometrics (road with, curve radii, slopes…) will be design to the State highway* standards for roads with low traffic volume.

- What if future expansion of the runway is required? *If a longer runway is needed in the future, the state would go through our design and permitting process and likely need to obtain more right-of-way for the expansion.*

- Would the DOT be required to supply more heavy machinery to maintain the new runway and access roads*? Our M&O section will determine if additional equipment is needed to maintain the new airport and road and purchase it. The new snow equipment removal building will be designed for what's needed.*

- If the contractor decides to remove material from the bedrock of the Noatak River, would the environment and fish be harmed in any way? *We plan on removing only 2-3 feet of material to use which ultimately won't have any major effects on the environment or the fish migratory patterns. We will need to obtain permits from the Alaska Department of Fish and Game for a river material site and they will review our project to make sure we're not impacting the fish habitat. DOT&PF will also need to get permission from the Alaska Department of Natural Resources for a river gravel source.*

- How will you keep dust down? *A dust palliative will be applied to the new runway. Air quality would be improved for the community because of the runways' distance away.*

- Who would be allowed to determine the location of accessible materials? The contractor, the state or the community members? *It mainly depends on the composition and quality of the materials nearby. The State will provide information on what material is available in the project area and then the contractor will determine where they get the material from. The State or contractor will need to get permission from the land owners for any material site and haul routes.*

- Consider the decreasing slopes of the proposed bridge location. *We will look at keeping road slopes to a minimum.*

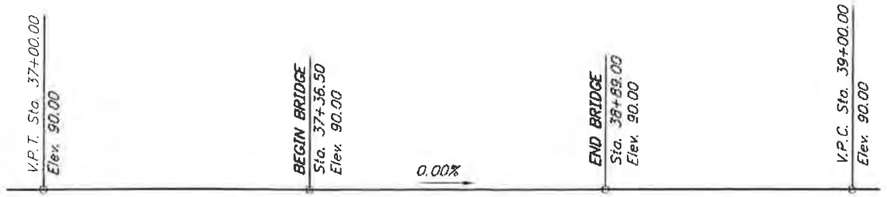
- Is there a way that the DOT can create a road off the proposed airport access road to make the cemeteries more accessible? *This project can only build a road to the airport.*

  Since the proposed location of the new airport is in a more open area where it would typically be windier, what would the potential of forming snow drifts in the winter be and would it be a danger to consider for people who might have a form of sight disabilities or color blindness? *Snow drifting will be considered in our design of the new road and airport. In other locations, we've been able to keep snow drifting on roads to a minimum by keeping the embankment several feet high.*

- Another concern is that the last contractor who came here used up all of the Native Store's diesel fuel and left the community with very little. This created a major issue for people who need this to survive during the harsh conditions of the winter. *It's up to the store who it sells its fuel to. If we know in advance that the contractor will not be able to get fuel in town, we can put that information in our plans and specifications so the contractor knows he will have to bring in fuel for the project.*

- The last contractor here filled our landfill and left the community to deal with their scrap materials, how do we guarantee that our landfills are not to be used by the contractor? *If the community won't let the contractor use the landfill, we can require the contractor to ship trash out but it will add cost to the project. If the contractor does not abide with the State contract, the state will not compensate the contractors and it will become their responsibility to address properly.*

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA		2007		



PROFILE GRADE DATA

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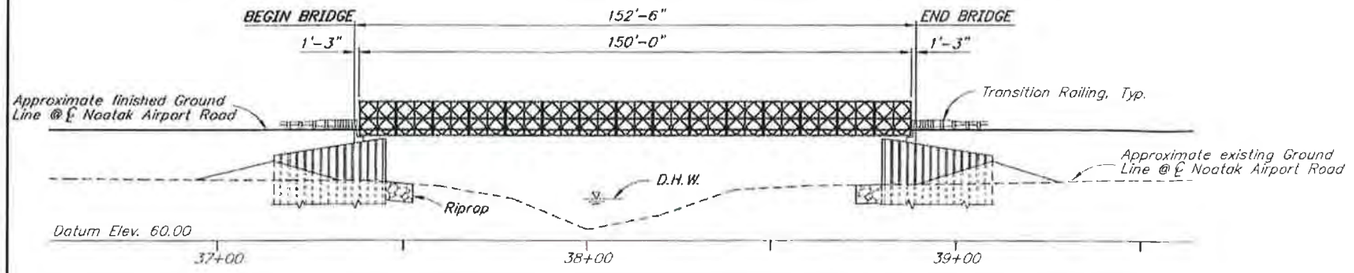
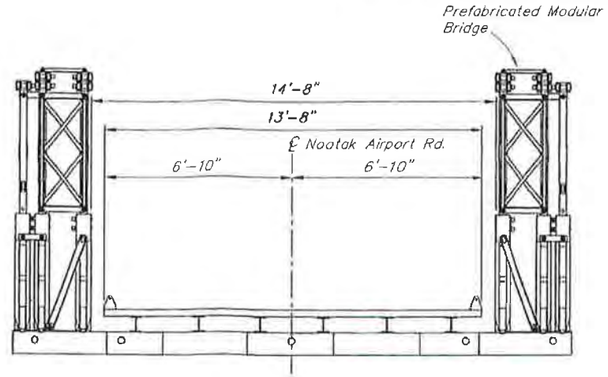


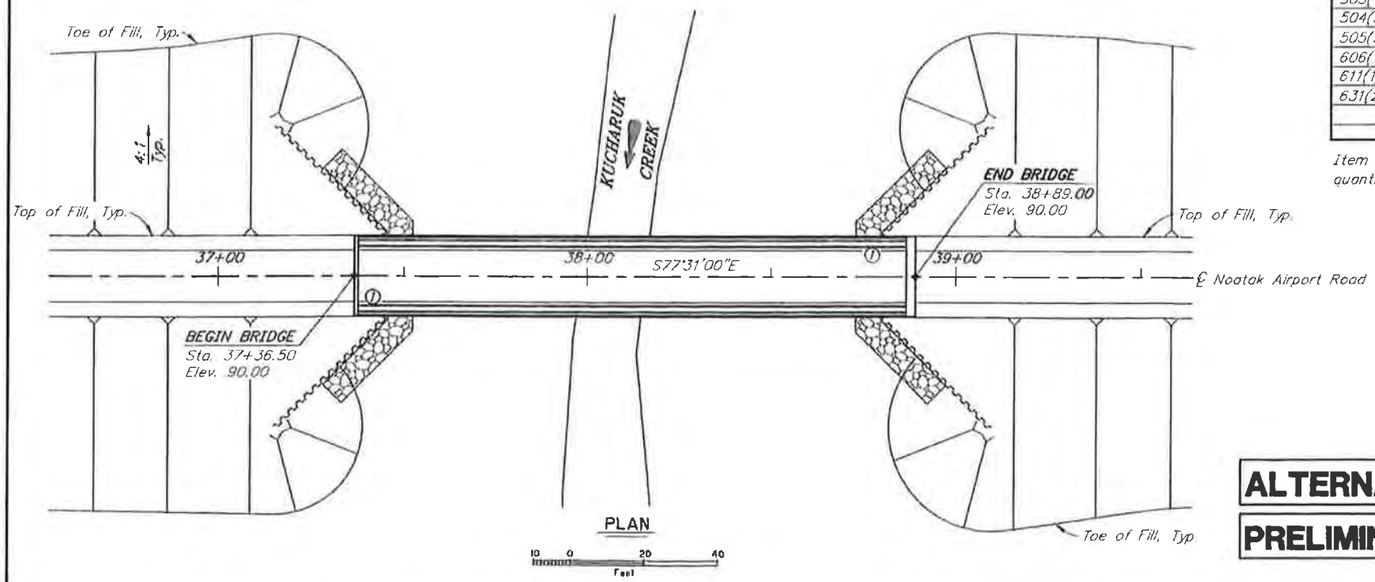


TYPICAL SECTION

12 0 4 8 In. Feet

ELEVATION

10 0 20 40 Feet



PLAN

10 0 20 40 Feet

BRIDGE BASIS OF ESTIMATE

ITEM NO.	ITEM	PAY UNIT	ESTIMATING UNIT	SUBST.	SUPERST.	TOTAL
501(1)	Class A Concrete	LS	CY			
503(1)	Reinforcing Steel	LS	LBS			
504(3)	Prefabricated Modular Bridge	LS	LBS			
505(9)	Structural Steel Sheet Piles	SF	SF			
606(12)	Guardrail / Bridge Rail Connection	EA	EA			
611(1)	Riprap, Class II	CY	CY			
631(2)	Geotextile, Erosion Control, Class 1	SY	SY			

Item numbers are for reference only. Quantities shown are not necessarily the pay quantities nor the total quantity of the particular item.

BRIDGE DRAWING INDEX

TITLE	DWG. NO.
GENERAL LAYOUT	1
SITE PLAN	2

ALTERNATE 1

PRELIMINARY PLAN

① Approximate location of Bridge Number Plate.

DESIGNED BY: Elmer Marx	CHECKED: Engineer	LAYOUT BY: Elmer Marx	CHECKED BY: Engineer
DRAWN BY: Sam Sollie	CHECKED: Elmer Marx	SPECIFICATIONS BY: Elmer Marx	P S & E COMPARED: Engineer
QUANTITIES BY: Elmer Marx	CHECKED: Engineer	APPROVAL RECOMMENDED BY: Rich Pratt	

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
BRIDGE SECTION

KUCHARUK CREEK BRIDGE

NOATAK INTERNATIONAL AIRPORT ROAD

GENERAL LAYOUT

BRIDGE NO. 2221

DWG NO. 1

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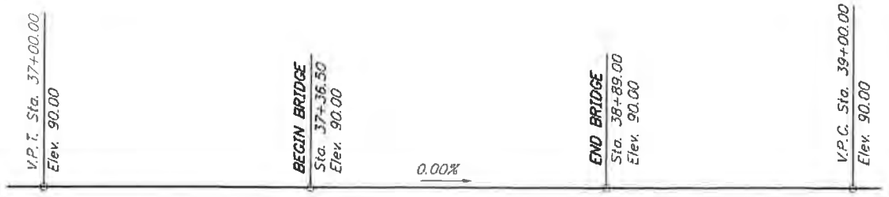
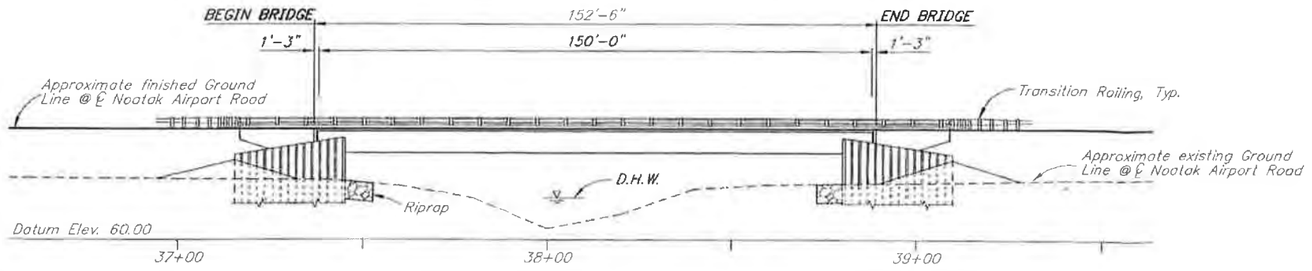
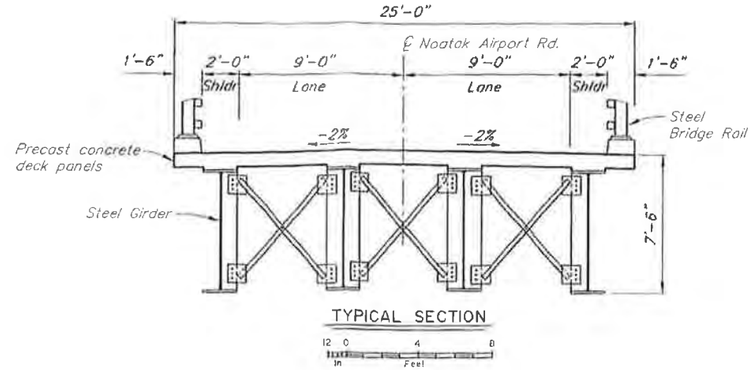
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA		2007		



PROFILE GRADE DATA

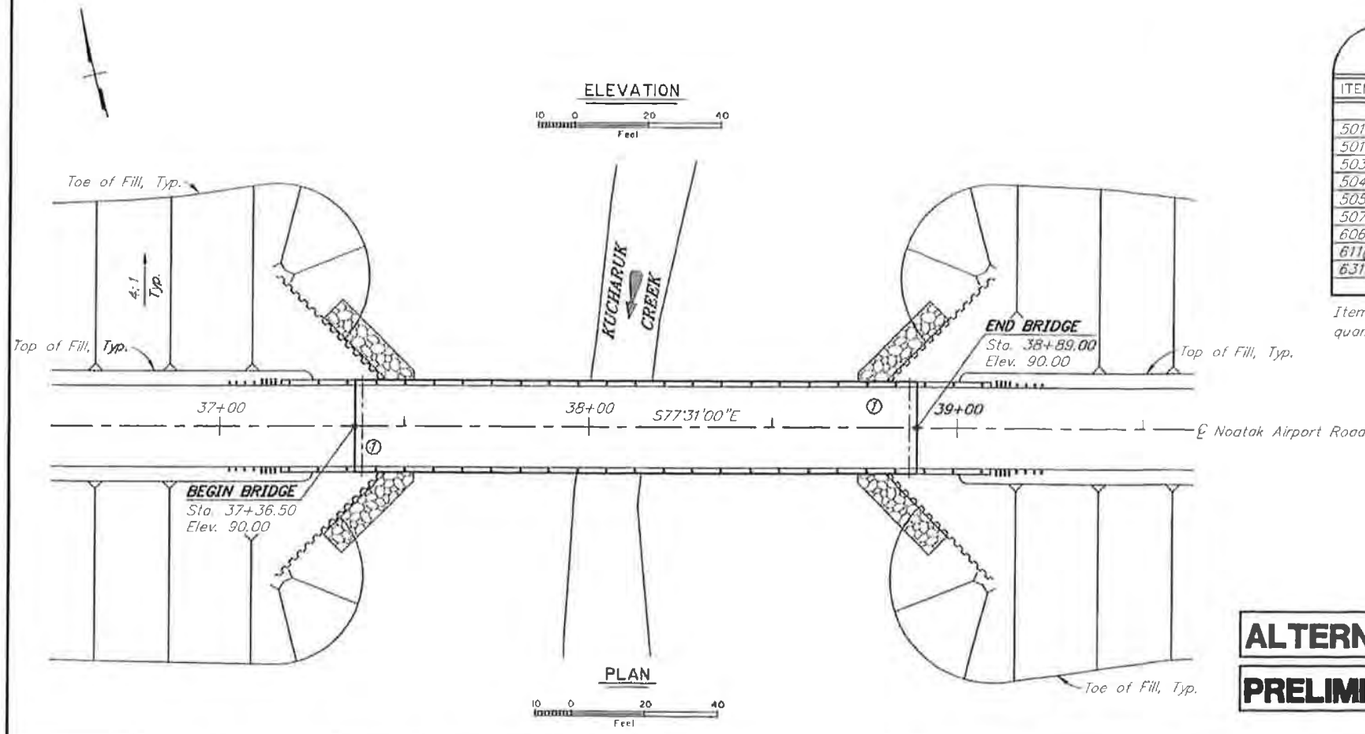
No Scale





TYPICAL SECTION

12 0 4 8
In Feet



BRIDGE BASIS OF ESTIMATE

ITEM NO.	ITEM	PAY UNIT	ESTIMATING UNIT	SUBST.	SUPERST.	TOTAL
501(1)	Class A Concrete	LS	CY			
501(7)	Precast Concrete Member (Deck Panel)	EA	EA			
503(1)	Reinforcing Steel	LS	LBS			
504(1)	Structural Steel	LS	LBS			
505(1)	Structural Steel Sheet Piles	SF	SF			
507(1)	Steel Bridge Railing	LF	LF			
606(12)	Guardrail / Bridge Rail Connection	EA	EA			
611(1)	Riprap, Class II	CY	CY			
631(2)	Geotextile, Erosion Control, Class 1	SY	SY			

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BRIDGE DRAWING INDEX

TITLE	DWG. NO.
GENERAL LAYOUT	1
SITE PLAN	2

ALTERNATE 2

PRELIMINARY PLAN

① *Approximate location of Bridge Number Plate.*

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DRAWN BY: Sam Sollie	CHECKED: Elmer Marx	SPECIFICATIONS BY: Elmer Marx	P S & E COMPARED: Engineer
QUANTITIES BY: Elmer Marx	CHECKED: Engineer	APPROVAL RECOMMENDED BY: Rich Pratt	

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
BRIDGE SECTION

KUCHARUK CREEK BRIDGE

NOATAK INTERNATIONAL AIRPORT ROAD

GENERAL LAYOUT

BRIDGE NO. 2221
DWG. NO 1

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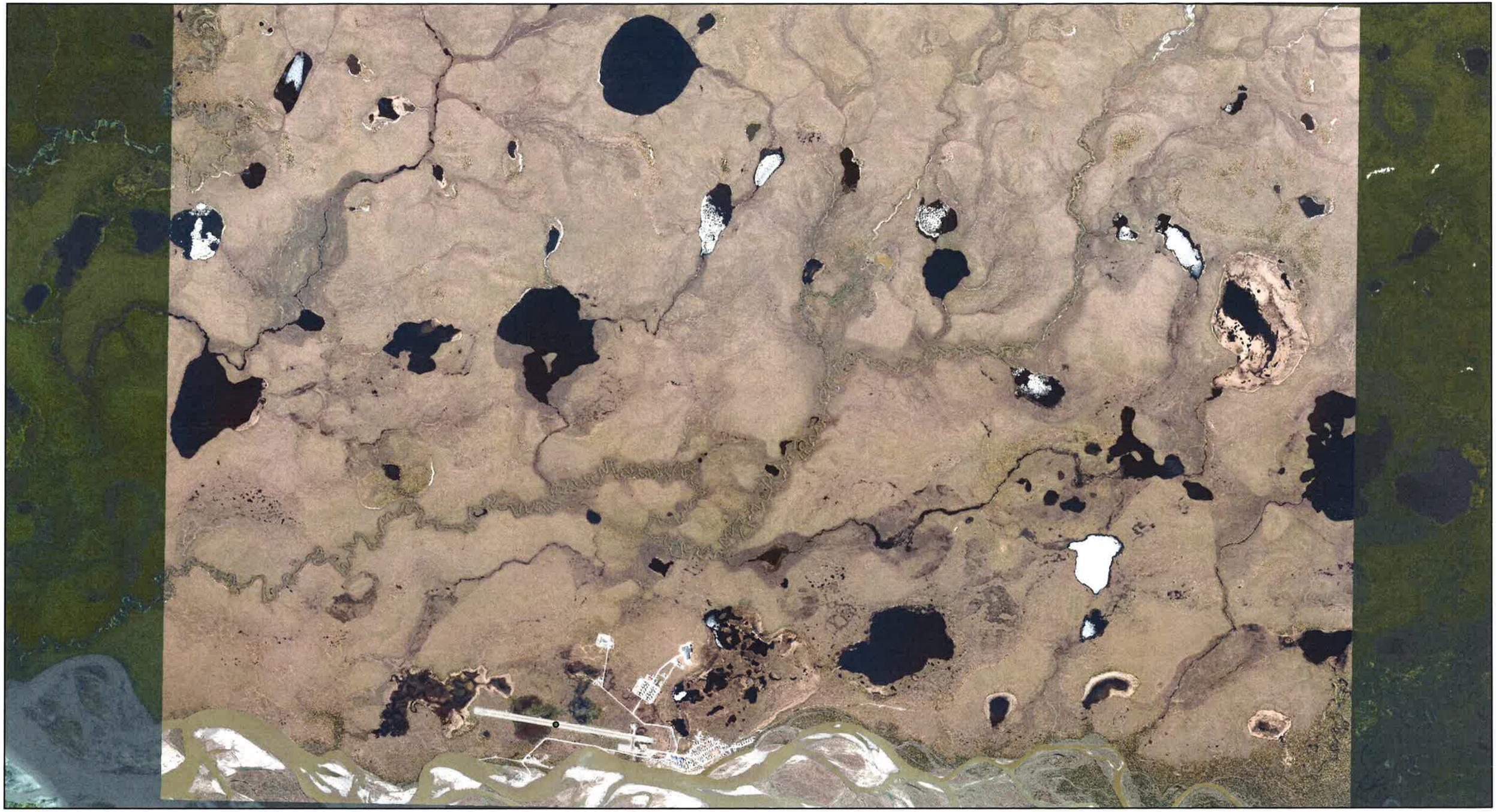


Community & Airport
Noatak, Alaska

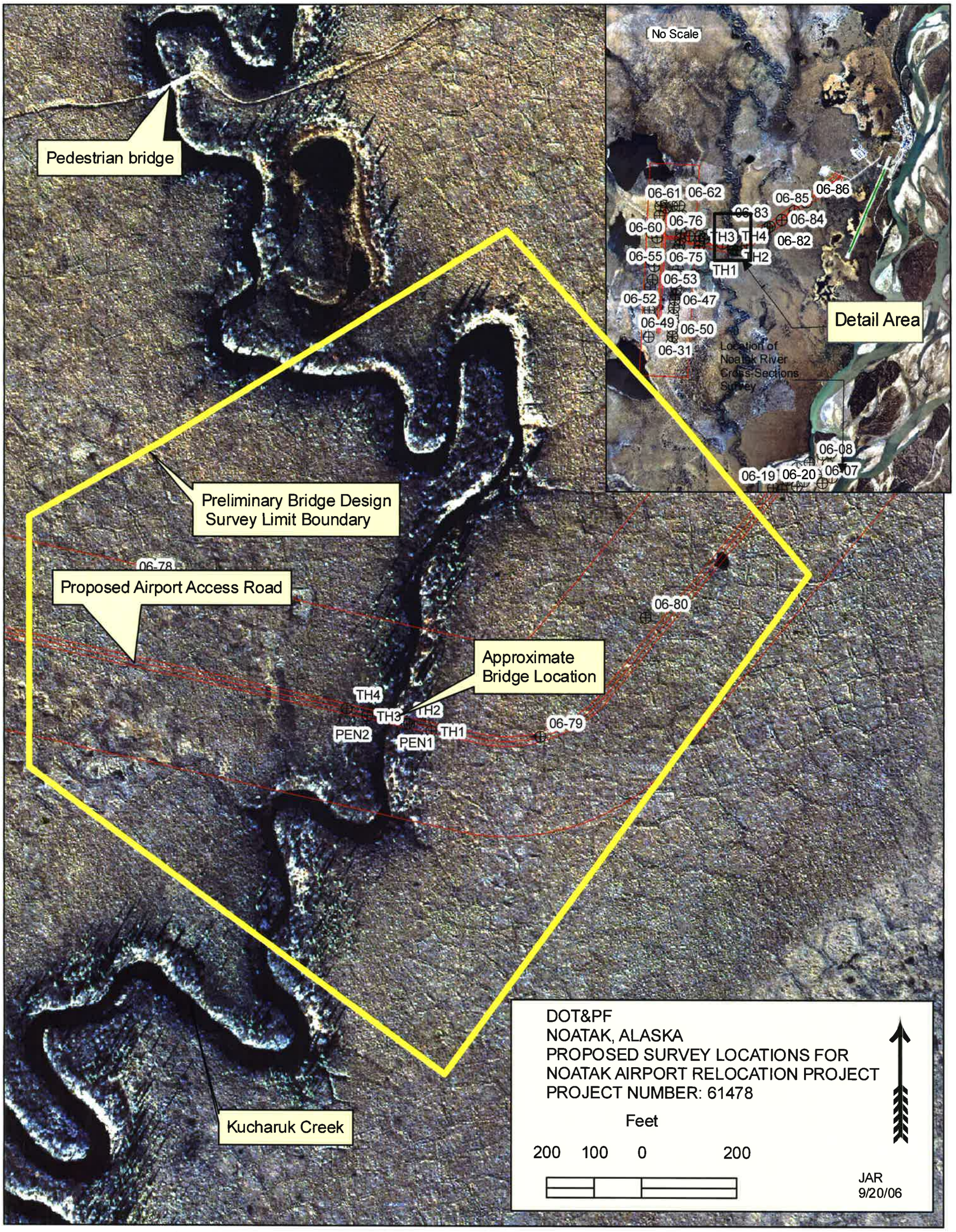
0 0.10.2 0.4 0.6 0.8
Miles

Aerial Coverage Photo
Dated as of Feb 13

STATE OF ALASKA

Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

Date: February 2015 | Drawing: BJK


No Scale
Pedestrian bridge
Preliminary Bridge Design
Survey Limit Boundary
Proposed Airport Access Road
Approximate
Bridge Location
Kucharuk Creek
Detail Area
Location of
Noatak River
Cross-Sections
Survey
06-61
06-62
06-85
06-86
06-83
06-84
06-76
06-60
TH3
TH4
06-82
06-55
06-75
TH2
TH1
06-53
06-52
06-47
06-49
06-50
06-31
06-08
06-19
06-20
06-07
06-78
06-80
TH4
TH3
TH2
TH1
PEN2
PEN1
06-79
DOT&PF
NOATAK, ALASKA
PROPOSED SURVEY LOCATIONS FOR
NOATAK AIRPORT RELOCATION PROJECT
PROJECT NUMBER: 61478
Feet
200 100 0 200
JAR
9/20/06

Legend

- Borehole Test Locations
- Materials Test Sites
- Alternative Runway 1
- Alternative Runway 2
- Native Allotments

Noatak Airport

0 0.3 0.6 1.2 1.8 2.4 Miles

STATE OF ALASKA

Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

Date: February 2015

Drawing: BJK

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
STATEWIDE AVIATION
NORTHERN REGION AVIATION LEASING
2301 PEGER ROAD
FAIRBANKS, ALASKA 99709-5399

NOTE TO FILE
MEETING SUMMARY

Meeting Date: **Thursday, April 28, 2016, 9:00am-10:00am**
Location: NR Leasing Office Conference Room

Attendees:		
	Nanette Pineault	DOT&PF/ROW
	Penny Adler	DOT&PF/Leassing
	Tom Kowalczyk	DOT&PF/Leasing
	Mark Moore	Native Village of Noatak (Village)
	Jay Hermanson	WH Pacific
	Ingemar Mathiasson	Northwest Arctic Borough (NWAB)

Airport: Noatak Airport

Lease(s):		
	Northwest Arctic Borough (NWAB)	Northwest Arctic Borough School District (NWABSD)
	ADA-70284	ADA-71774
	Parcel C	Parcel I

RE: Native Village of Noatak inquiry regarding transferring of title to the old elementary school building *and* premises from the NWAB to the Village verses having the NWAB remove the improvements in conjunction with the AIP project to relocate the airport at Noatak.

1. The meeting began with introductions and an explanation from Mark Moore that Jay Hermanson/WH Price was attending because of Jay's involvement with a number of pending Village renovation project plans, including a potential renovation of the subject school building.

2. Mark explained that they were aware of the pending DOTPF airport relocation project and the requirement to have the school removed, but that they were looking for any alternatives that would allow the Village to take possession of the school building and allow it to remain after the airport was relocated.

3. Mark and Jay further explained that the cost of shipping materials to Noatak for any project is at least 50% or more of the overall project cost, and if the existing facility could be repurposed at its existing location, it could save the Village a lot of money, in new materials and construction expenses, in demo and disposal expense, and also allow available funding to go toward other needed Village projects.

4. We provided Mark, Ingemar, and Jay copies of the Noatak Land Occupancy Drawings (LO), Property Plan, and Section 16 Patent # 1229347, dated October 24, 1962, which describes the requirements the State must adhere to if the land is no longer needed for an airport and must be relinquished by the State. A copy of the NWAB Lease ADA-70284, including the yet unsigned Supplement No. 3, was also provided. Ingemar mentioned that he would take his copy back to the NWAB admin office and follow-up on the unsigned supplement.

5. Nanette explained that the Bureau of Land Management (BLM) would be the U.S. Government agency involved when the State relinquishes the airport, and she would provide a point of contact at the BLM for subsequent questions and follow-up by the Village or NWAB.

6. At that point we explained that when the new airport was ready for use and we no longer needed the existing airport land for use as an airport, we are obligated under the Patent to restore and return the existing airport to the BLM in a reasonable and acceptable condition, as determined by BLM and the FAA, which includes being free from any out grants such as leases and associated improvements, and in an acceptable environmental condition.

7. We explained that we do not have a date specific yet as to when the project will start, but that it is in the State's AIP list, and anticipate that it could occur within the next 5 years, with the environmental phase potentially beginning as early as 2018. We explained that during the environmental phase we begin acquiring title to the land needed for the new airport as well as initiate actions to be sure the old airport will be in a condition acceptable to the BLM by the time the new airport is ready for use; this includes actions to end existing leases and require all improvements be removed and property vacated.

8. a) In the course of the discussion Mark explained that the Village had received a Quit Claim Deed (QCD) from the NWAB for the NWAB School buildings in Noatak, including the old elementary school building located on the airport.

   b) I explained that we had received a previous phone inquiry from the NWAB about a possible transfer of the school to the Village, but that we had responded that were reluctant to even consider it, given the non-aeronautical use and the overall facility being located so close to the runway. No formal request to assign the lease from the NWAB to the Village was ever received.

   c) Penny further explained that regardless of the QCD, the NWAB remains the lessee of record for Lease ADA-70284. As such, we are required to deal with the NWAB as the lessee and owner of the school building and tank farm. Any issues between the NWAB and Village as to who owns the improvements under this lease need to be worked out between the NWAB and Village, and in accordance with the terms and conditions of the lease.

9. We explained that we have been communicating by telephone and in writing, by email and US Mail, with the NWAB since 2013 about ending this lease. We also have been communicating with the NWABSD in the same manner since early 2014, due to their fuel pipeline which is connected to the NWAB's tank farm and crosses the airport under their separate Permit ADA-71774.

10. We closed the meeting with a recap of the State's obligations when returning the existing airport back to BLM; being the removal of improvements, clean up, and restoration of the airport to a condition acceptable to BLM. Nanette explained that unless BLM tells the State that it does not have to remove existing improvements, clean up, and restore the airport, we have no choice but to require the removal of the school, tank farm, and NWABSD fuel pipeline from the airport. Nanette further explained that the state actions under these obligation's will begin as soon as the airport relocation project moves into the environmental stage, so time is of the essence if the Village wishes to pursue any sort of follow-up with BLM.

NAME: Tom Kowalczyk, Leasing Officer
DATE: May 5, 2016

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Transportation and Public Facilities

Northern Region
Design and Engineering Services

301 Peger Road

Fairbanks, Alaska 99709-5316
Main: 907-451-2237
Toll free: 800-451-2363
Fax: 907-451-5126

November 22, 2017

Re: Noatak Airport Relocation
Project Number: Z614780000
Subject: Request for Scoping Comments

Dear Agency Contact,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), proposes to relocate the Noatak Airport to provide the Village of Noatak with a safe, reliable, and cost effective facility. This facility would provide the community with adequate access, support the community's long-term development goals, and conform to current FAA safety regulations.

The existing Noatak Airport and adjacent community are located on the west bank of the Noatak River, 55 miles northwest of Kotzebue (Figure 1). The proposed airport relocation would be located approximately 1.5 miles west of the existing airport. A new 2-mile long airport access road would be constructed from the Village of Noatak to the new airport location (Figure 2).

DOT&PF is requesting updated scoping comments to support preparation of an environmental document for the proposed project in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). Public involvement and agency consultation were conducted between 2006 and 2007 and several comments were received. Due to the time lapse since the last scoping effort, DOT&PF is re-initiating formal scoping to gather any additional or updated comments you may have on the proposed project. Your responses will help provide us with the necessary input to develop and design a proposed final project that avoids and minimizes as many potential adverse environmental and human impacts as possible.

Purpose and Need

Noatak, a community of approximately 546 people is the only settlement on the 400-mile long Noatak River, just west of the 6-million acre Noatak National Preserve and east of the Cape Krusenstern National Monument. There are no roads connecting the community to outside urban

areas and barge service on the river was suspended in 1992 due to inadequate channel depth of the Noatak River near the community. While small boats, all-terrain vehicles, and snow machines are used for inter-village and subsistence travel, Noatak relies solely on air transportation for major commerce, supplies, fuel, access, and medical evacuation needs. Use of the existing airport, however, is threatened by bank erosion along the Noatak River. Recent studies show that the river, coupled with other erosive processes, is actively eroding the bank and will likely wash out the apron and impact the runway at some point in the near future. In addition, the existing aircraft parking apron, runway protection zone (RPZ), approach slope, and runway safety area (RSA) are deficient in meeting the safety needs of the aircraft currently using the airport.

Proposed Action

Multiple airport location and access road alternatives have been considered since project inception. Currently, DOT&PF is considering one build alternative for the new airport location (Figure 2), although additional alternatives may be identified during scoping. The Proposed Action includes the following elements (Figures 2-3):

- **Airport:** A new airport including a new runway, taxiway, apron, and Snow Removal Equipment Building (SREB) would be constructed approximately 1.5 miles west of the existing airport location. The new runway would be 4,000 ft. long, 75 ft. wide, with a 4,600 ft. long, 150 ft. wide RSA. New medium intensity runway lights and apron site lighting would also be installed. The SREB would be constructed on the apron.
- **Access Road:** A new airport access road (approximately 2.2 miles long and 20 ft. wide) would be constructed from one of two possible locations originating from the Village of Noatak to the new airport location (Figure 2).
- **Bridge:** A single-span bridge over Kuchoruk Creek would be constructed at the new airport access road crossing.
- **Electric Line:** An overhead electric line for airport lighting and the SREB would be constructed from the Village of Noatak to the new airport location along the new airport access road alignment. Poles would be spaced up to 250 ft. apart.
- **Material Sites and Haul Routes:** Two potential local material sources would be used to construct the proposed project. A material source on the Noatak River approximately two miles downstream from the village, and an inland material site approximately 0.75 miles northwest of the new runway may be developed to provide necessary material for the project. Material extraction, hauling, and contractor equipment access to the new airport site is anticipated to occur when the ground is frozen. Potential material haul routes are shown on Figure 2. An additional overland haul route from the Red Dog Port site may also be used in winter to transport needed equipment and materials.
- **Land Acquisition and Disposal:** Land would be acquired for construction of the proposed project and the existing airport property would be disposed of in accordance with FAA grant assurances. Land would be purchased or right-of-way obtained for the new airport, access road, and material site.

Independent, preliminary research and review of project area resources has been conducted and is summarized in the attached Appendix A.

We respectfully request your written comments no later than December 22, 2017. Please mail them to: DOT&PF Attn: Melissa Jensen 2301 Peger Road Fairbanks, AK, 99709; or you may e-mail comments to: melissa.jensen@alaska.gov.

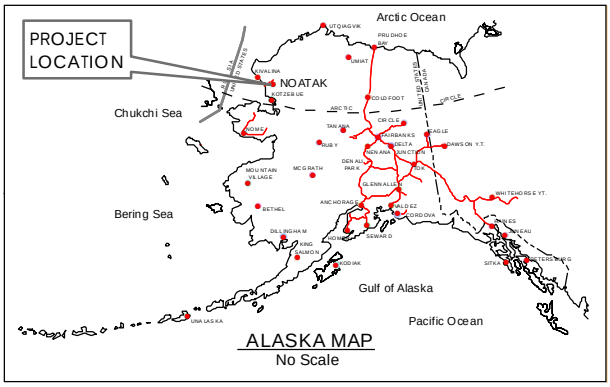
Thank you for your attention to this request, if you have any questions regarding the proposed project, you may contact Melissa at (907) 451-5377.

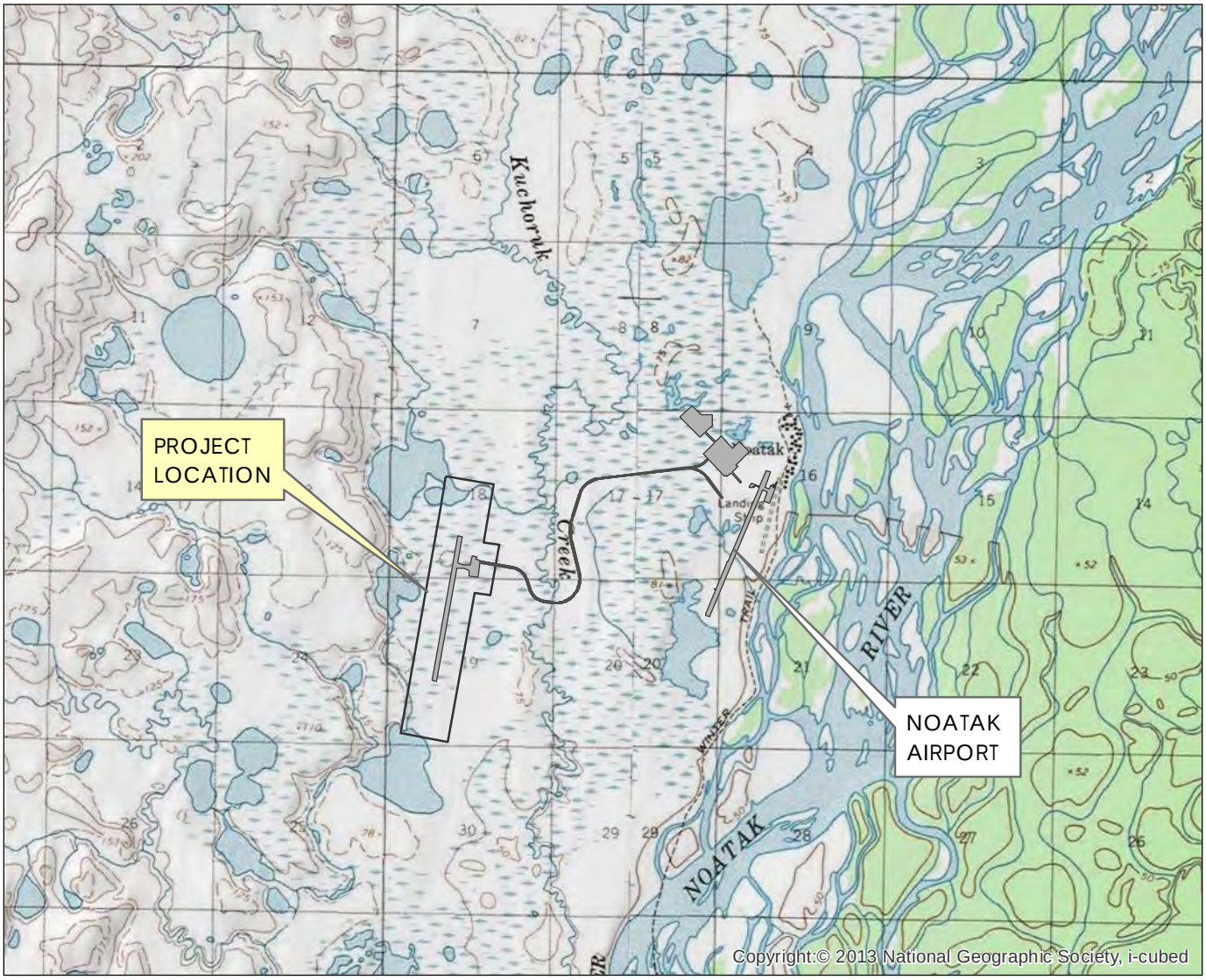
Sincerely,

Christopher Johnston, P.E.
Engineering Manager

Enclosures: Figure 1 – Location & Vicinity Map
Figure 2 – Proposed Action
Figure 3 – Proposed Action Site Plan
Appendix A – Preliminary Review of Project Study Area Resources

cc: James Rypkema, ADEC, Anchorage
Audra Brase, ADF&G, Fairbanks
Judy Bittner, ADNR, Anchorage
Jeanne Proulx, ADNR, Fairbanks
Jeanne Hanson, NOAA-NMFS, Anchorage
Matthew Eagleton, NOAA-NMFS, Anchorage
Ryan Winn, USACE, JBER
Jennifer Curtis, USEPA, Anchorage
Robert Henszey, USFWS, Fairbanks
Bonnie Million, BLM, Anchorage
Rhea Hood, NPS, Anchorage
Sally Cox, DCCED, Fairbanks
Paul Napaqtuq Anderson, NANA Regional Corporation Lands Manager
Sergeant Rodney Johnson, Alaska State Troopers, Kotzebue
Tim Gilbert, Maniilaq Association, Kotzebue
Vernon Adams Sr., Native Village of Noatak
Noah Naylor, NAB Planning Director
Andrew Crocitto, FAA Air Traffic Organization
Robert Beans, Alaska Village Electric Cooperative Board Chairman
Annmarie O'Brien, Northwest Arctic Borough School District Superintendent
Jane Dale, Alaska Air Carriers Association Executive Director





Graphics developed by Stantec Consulting Services, Inc.

Project Origin: City of Noatak
Kotzebue Recording District,
Section 16-21, 28-32,
Township 25N, Range 19W
Kateel River Meridian
Noatak Airport
USGS: NOATAK (C-2) ALASKA
673357 N 1625840 W

0 0.5 1 2 Miles
1:63,360 (at original document size of 8.5x11)

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Location & Vicinity Map

DATE: October, 2017

FIGURE **1**

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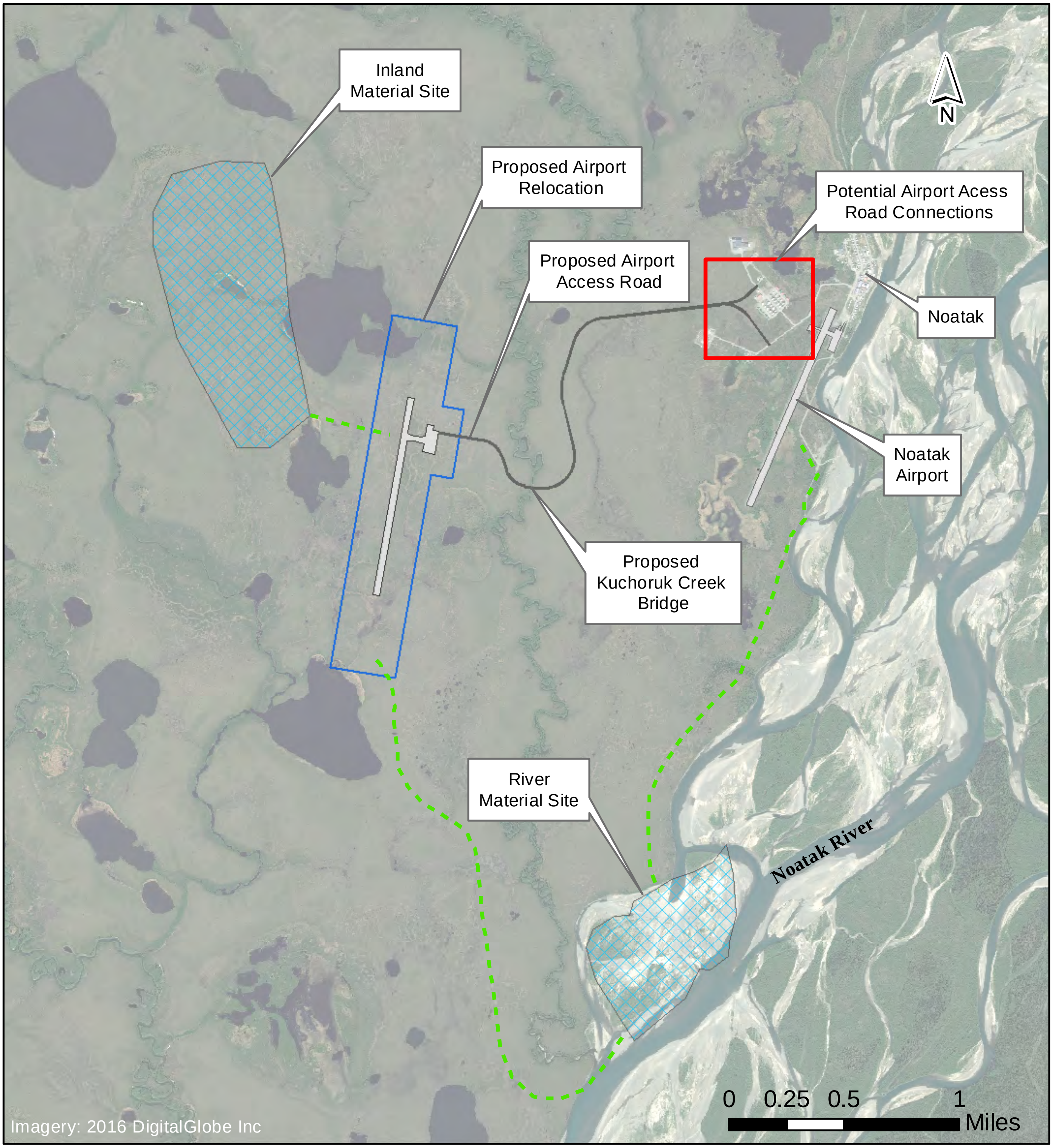


LEGEND

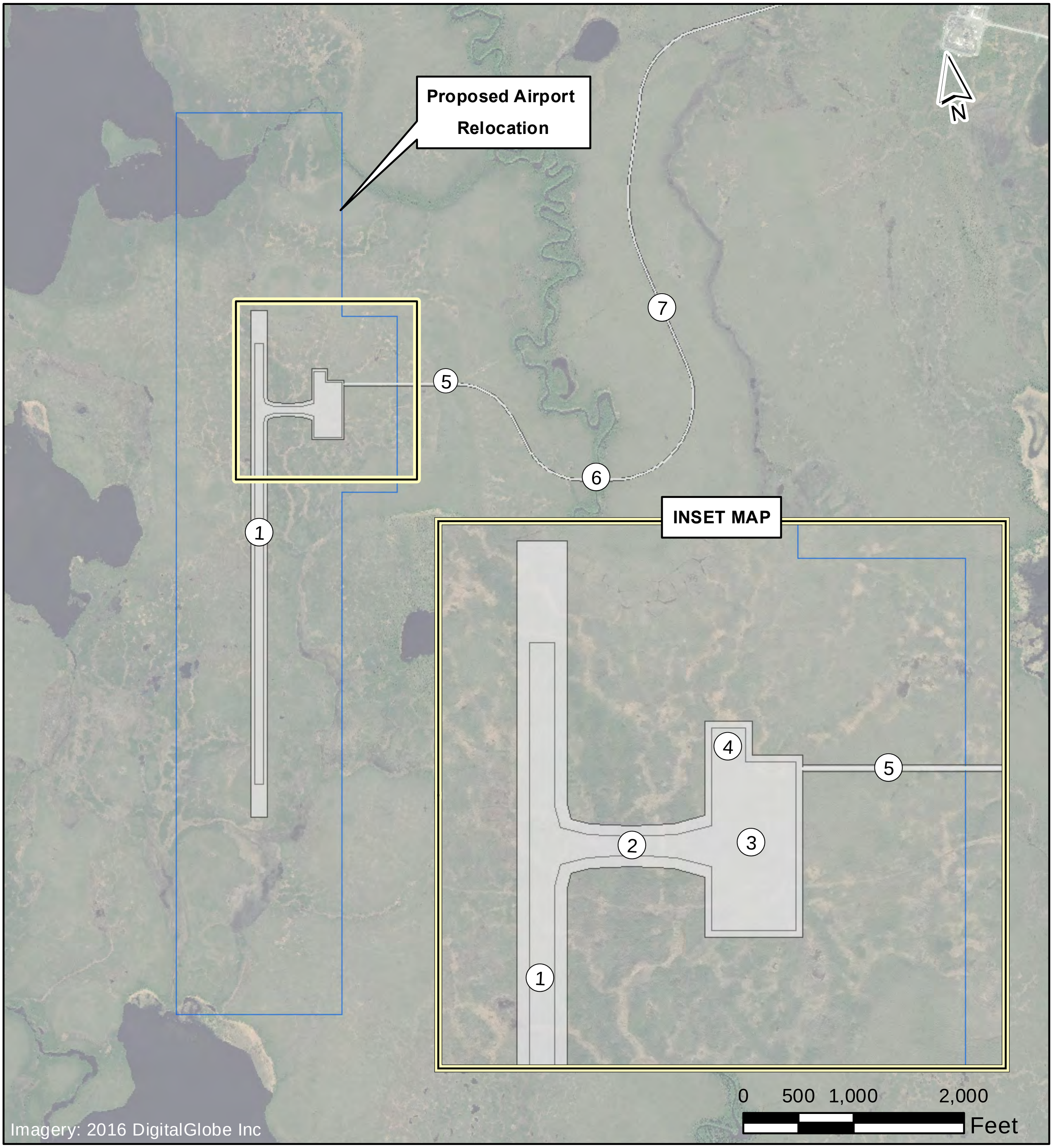
- Proposed Winter Haul Route
- Proposed Airport Access Road
- Proposed Runway & Apron
- Proposed Material Site

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Proposed Action

DATE: October, 2017	FIGURE **2**



PROPOSED ACTION:

1. Runway Safety Area and Navaids
2. Taxiway
3. Apron
4. SREB
5. Airport Access Road
6. Kuchoruk Creek Bridge
7. Above Ground Electric Line

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Proposed Action Site Plan

DATE: October, 2017	FIGURE **3**

U:\2047059000\GIS\mxd\Scoping\2047059000_SC_Fig-03_Proposed_Action_Site_Plan.mxd Revised: 2017-10-04 By: cpannone

Air Quality

A review of the Alaska Department of Environmental Conservation (ADEC) *Air Non-Point Mobile Source* website (ADEC, 2017a) indicated the proposed project is not in an air quality maintenance or non-attainment area for National Ambient Air Quality Standards. However, Noatak is a community with reported dust problems and is undergoing routine PM_{10} monitoring. Dust during construction would be regulated using Best Management Practices (BMPs) and compliance with the Alaska Pollutant Discharge Elimination System Construction General Permit.

Biological Resources (Fish, Wildlife, & Plants)

Fish

A review of the Alaska Department of Fish and Game (ADF&G) *Fish Resource Monitor* (ADF&G, 2017) and the National Oceanic and Atmospheric Administration (NOAA) Essential Fish Habitat (EFH) mapper (NOAA, 2017) found the following information. The Noatak River (331-00-10290), an anadromous fish stream is located approximately 730 feet away from the proposed access road and one of the material sites is an island of the Noatak River. Chum salmon, Coho salmon, Chinook salmon, pink salmon sockeye salmon, Dolly Varden, Inconnu/sheefish, and whitefish are present in the Noatak River. Kuchoruk Creek (not listed by ADF&G) is located within the project area and would require bridge construction to cross the creek by the proposed airport access road. Kuchoruk Creek has not been surveyed by ADF&G so is not listed in the *Fish Resource Monitor*; however, ADF&G stated during initial project scoping that chum salmon are likely present in Kuchoruk Creek (personal communication with J. Johnson, 02/09/06). Noatak River is considered EFH under the Magnuson-Stevens Fishery Conservation and Management Act. An EFH assessment and coordination with the National Marine Fisheries Service will be completed.

Wildlife

The United States Fish and Wildlife Service (USFWS) *Information for Planning and Consultation* (IPaC; USFWS, 2017) lists the polar bear (a threatened species) that may be present within the proposed project area, although no critical habitats are listed within the proposed project area. The proposed project is within the migratory ranges for Spectacled Eider (*Somateria fischeri*) and Steller's Eider (*Polysticta stelleri*); however, it does not overlap with designated critical habitat for either eider species. IPaC also lists a few migratory bird species that may be present within the proposed project area including American golden-plover, bar-tailed godwit, black turnstone, buff-breasted sandpiper, dunlin, red knot, red-throated loon, semipalmated sandpiper, whimbrel, and yellow-billed loon. Migratory bird species may travel through the proposed project area and be disturbed by clearing operations; however, vegetation clearing associated with the project and would follow the USFWS recommended time-period to avoid vegetation clearing (May 1-July15).

Favored eagle nesting habitat does not exist in the immediate project vicinity. No known eagle nests are located within the project area. If Bald Eagle nests are sighted within the project area during or prior to construction, DOT&PF will seek guidance from the USFWS on how to proceed.

Plants
The Alaska Exotic Plants Information Clearinghouse (AKEPIC, 2017) was reviewed and the database mapper indicated that no data is available for the proposed project area. The project is anticipated to involve vegetation loss in association with construction of the new airport and access road. DOT&PF would comply with Executive Order 13112 (Invasive Species) by; 1) ensuring that ground disturbing activities are minimized, and disturbed areas are re-vegetated with seed recommended for the region by Alaska Department of Natural Resources (ADNR)'s *A Revegetation Manual for Alaska*; 2) construction equipment would be inspected and cleaned prior to enter and exiting the construction site to minimize spread of vegetative materials; and 3) erosion and sediment control materials would be locally produced products to minimize potential importation of new propagules from outside Alaska.

Climate
FAA Order 1050.1F, Change 1, Guidance Memo #3, *Considering GHGs and Climate under the NEPA: Interim Guidance*, includes guidance for evaluating greenhouse gas emissions with proposed projects under the National Environmental Policy Act (NEPA). The guidance states GHG emissions resulting from the proposed action should be evaluated qualitatively or quantitatively. There is no GHG emission data available for Noatak. GHG emissions are expected to be minimal and short-term during construction. The proposed project would not permanently increase aviation traffic; therefore, no net change in GHGs are anticipated.

Coastal Resources
The Alaska Coastal Management Program expired on June 11, 2011 and is no longer in effect. Although a state coastal consistency determination is no longer required, the *NAB Comprehensive Plan* (1993) and the *Northwest Area Plan for State Lands* (DNR, 2008) would be evaluated to ensure no adverse coastal impacts occur within the study area and the project is consistent with coastal resource management referenced in these plans.

Department of Transportation Act, Section 4(f)
The National Parks Service (2017a) and U.S. Forest Service (2017) websites were reviewed for publicly owned lands including public parks, recreation area, wildlife or waterfowl refuges of national, state, or local significance, or land from a historic site of national, state, or local significance within the project area. The project area is located within the Cape Krusenstern National Historic Landmark boundary. Additionally, winter mobilization of goods and materials to Noatak for construction of the proposed action may include construction of an ice road through portions of the Cape Krusenstern National Monument, located 12 miles west of the proposed new airport location.

Farmlands
According to the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) (USDA, 2017), there are no designated soils of local importance, nor prime or unique farmland within the project area.

Hazardous Materials, Solid Waste, and Pollution Prevention

A search of ADEC's Contaminated Sites Program database identified one active site and one informational site within the vicinity of the proposed project (ADEC, 2017b). One active site, AKARNG Noatak FSA (Hazard ID 2496), is located approximately 440 feet northeast of the proposed airport access road. This site is listed for petroleum contamination, in 2005 a workplan was set in place, in 2006 a method III cleanup level was approved. One informational site, Noatak Former Dumpsite (Hazard ID 4318), is located approximately 190 feet east of the proposed airport access road. This site was listed due to a use as a community dump from 1970-1995 before it was covered with 18 inches of gravel. The site was found to have all contaminates below cleanup levels, the Environmental Protection Agency status is no further remedial action planned, and the site has been archived. A Phase I Environmental Site Assessment would be completed for the existing airport.

Historical, Architectural, Archeological and Cultural Resources

On September 11, 2017, the ADNR Alaska Heritage Resources Survey (AHRS) online database was searched to ascertain the presence of cultural and historic resources within or adjacent to the proposed project. There are 11 sites listed within the project area; however, the proposed action is not anticipated to disturb known cultural resources eligible for the National Register of Historic Places. On December 21, 2007 DOT&PF, on behalf of FAA, determined that no historic properties would be affected by the proposed action, and SHPO concurred with DOT&PF's determination on January 31, 2008 (File No.: 3130-IRFAA). In accordance with Section 106 of the National Historic Preservation Act, DOT&PF and FAA will review the Area of Potential Effect (APE) that was developed for the project previously, and update it as necessary for the Proposed Action, coordinate with consulting parties (including the State Historic Preservation Officer), and make a finding of effect.

Land Use

The N*oatak Community Comprehensive Development Plan* (2011-2016) identifies building a new airport runway as the number two overall community development project priority. The proposed project would necessitate land acquisition to construct the new airport, access road, and use of material sites. The *NAB Comprehensive Plan* (1993), the *Northwest Alaska Transportation Plan* (DOT&PF, 2004), and the *Northwest Area Plan for State Lands* (DNR, 2008) were also evaluated to ensure no conflict with community land use and transportation plans. Coordination with local village officials would be completed to avoid conflict with community land use plans. The new airport and access road would cross three 17(b) easements. Coordination with the Bureau of Land Management will be completed to ensure no adverse impacts to the 17(b) easements. Potential material site haul routes may cross the Cape Krusenstern National Monument, Landmark, BLM, and Noatak Napaaktukmeur Corporation lands. Coordination with landowners would be completed to avoid conflict with land use plans.

Natural Resources and Energy Supply

The mountains north of Noatak are rich in zinc, lead, and barite mineralizations and coal. Red Dog Mine, the largest zinc mine in the world, is located approximately 35 miles from Noatak. The Alaska Village Electric Cooperative runs three diesel fuel generators and operates a tank farm with a total capacity of 92,000 gallons. Fuel is stored in multiple tank farms. The increased distance between the new airport and the Noatak village would cause an increase in resident fuel needs who would travel to and from the new airport along the access road. Fuel providers would

need to supply a fuel truck or the community would need to replace the current buried fuel transmission line system to accommodate increased fuel demands.

Noise and Noise-Compatible Land Use

Per the *1050.1F Desk Reference* (FAA, 2015), a noise analysis is required if annual operations exceed 90,000 propeller operations or 700 jet operations. The proposed project would not increase operations to exceed those figures; therefore, a noise analysis would not be required. Additionally, the new airport location would be 1.5 miles farther away from residences of Noatak; therefore, overall noise impacts to the community of Noatak would be reduced.

Visual Effects

Light Emissions

Relocation of the airport would result in light emissions in an area where none previously existed within disturbed and undisturbed lands (tundra flats and kettle lakes). New light sources would include medium-intensity runway lighting, wind cone lighting, and a rotating beacon, similar to the lighting at the existing airport. Runway lighting is typically activated for short periods of time prior to take-off and landing and would be visible to most residents in the village. However, lighting at the new airport would be located further away from the village than the existing airport lighting. Reflective delineators would be installed to mark the edges of the access road.

Water Resources

Wetlands

Wetland mapping and habitat studies were completed for the project area. The habitat within the proposed project area consists of a mixture of wetland types including wet meadow, shrub bog, and shrub-sedge tundra. Construction of the project would require placing fill into approximately 54 acres of wetland for runway and access road construction. Temporary wetland impacts would include dredging of approximately one million cubic yards of gravel from an island within the Noatak River, material extraction from an inland material source, and installation of the airport access road bridge at Kuchoruk Creek. DOT&PF anticipates that any work within wetlands and waters of the U.S. would be covered under a USACE Individual Permit.

Floodplains

The Federal Emergency Management Agency has not published flood maps for the community; however, a December 1979 community map published by the Alaska Department of Community and Regional Affairs depicts a floodplain at a level of 30 feet above the Noatak River normal channel height. A Noatak Flood Plain Survey (USACE, 2012) documents a 1987 flood that rose one foot above a well casing on a Noatak River braid plain island, although the height of the well casing is unknown. The Noatak River material site would be within the Noatak River floodplain. Excavation would take place during the winter months when the ground surface is frozen and water levels are at the lowest of the year. Floodplain consultation and procedures would take place as the project progresses.

Surface Waters

The community of Noatak and the existing airport are located along the west bank of the Noatak River. The Noatak River is not listed as an impaired waterbody on the ADEC 303(d) List of Impaired Waterbodies. Additionally, there are no known water quality impairments to the surface waters surrounding Noatak. Drainage patterns within the area surrounding the relocated runway and access road would be altered; however, culverts would be used to maintain cross drainage and hydrologic function.

Wild and Scenic Rivers

There are no designated wild or scenic rivers in the vicinity of the proposed project (National Park Service, 2017b).

References

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SUMMARY OF NATIONAL ENVIRONMENTAL POLICY ACT
SCOPING COMMENTS RECEIVED AND RESPONSES
for the
NOATAK AIRPORT RELOCATION

Project Number: Z614780000

A request for scoping comments was transmitted on behalf of the Department of Transportation and Public Facilities (DOT&PF) on November 27, 2017, in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). The table below summarizes comments received regarding the Noatak Airport Relocation project and DOT&PF responses.

NEPA Scoping Comments and Responses Summary		
Name, Agency, Date, Method Received	**Comment**	**Response**
Rhea Hood, National Park Service (NPS), 11/27/17, Email to DOT&PF	• Entire project study area is within the Cape Krusenstern Archeological District (CKAD) National Historic Landmark (NHL). Federal agencies must comply with Section 106 within a NHL. • NPS is interested in the project's identification and evaluation Section 106 process of study area cultural resources.	• DOT&PF will coordinate with NPS, SHPO, and consulting parties through the Section 106 process, which will include identification and evaluation of study area cultural resources.
	• Please clarify if the proposed winter haul route to the Red Dog Port connects to Delong Mountain Road outside or crosses the Cape Krusenstern National Monument (CKNM). If it crosses the CKNM contact NPS Western Arctic National Parklands Superintendent, Maija Lukin.	• There are several potential routes for the proposed winter haul route, two of which traverse inside the monument boundary. DOT&PF will coordinate with Maija Lukin on this project if use of those routes is considered a feasible alternative for evaluation under NEPA.
Rhea Hood, NPS, 11/27/17, Email to FAA	• Entire project study area is within the CKAD NHL. Federal agencies must comply with Section 106 within a NHL. • Section 106 requires the federal agency to provide the Advisory Council on Historic Preservation (ACHP) with the opportunity to comment and the ACHP will decide if routine consultation through Section 106 is necessary.	• DOT&PF will coordinate with the ACHP and provide the opportunity to comment on their desired level of involvement in the Section 106 process.

NEPA Scoping Comments and Responses Summary		
Name, Agency, Date, Method Received	**Comment**	**Response**
	• If the project is within the CKNM please contact NPS Western Arctic National Parklands Superintendent, Maija Lukin.	• There are several potential routes for the proposed winter haul route, two of which traverse inside the monument boundary. DOT&PF will coordinate with Maija Lukin on this project if use of those routes is considered a feasible alternative for evaluation under NEPA.
Audra Brase, Alaska Department of Fish and Game (ADF&G), Division of Habitat, 11/29/17, Email to DOT&PF and Stantec	• ADF&G has no specific information regarding fish species in Kuchoruk Creek. Although Alaska blackfish were identified in at least one pond that connects to the creek. It is suggested fish surveys be completed prior to bridge construction to provide proper recommendations on work windows, water withdrawals, and/or stipulations.	• Thank you for your comment. Through consultation with ADF&G in 2006, there is speculation that chum salmon may occur within the creek. DOT&PF will assume presence of chum salmon in the creek and coordinate with ADF&G during permitting to determine recommend timing windows for bridge construction.
	• A Fish Habitat Permit (FHP) may be required for bridge construction (dependent upon fish species identified), and a FHP will be required if fill material is taken from the Noatak River material site. ADF&G prefers the upland material site is utilized to avoid Noatak River fish impacts. If material is removed from the river material site, stipulations will be placed on the FHP to minimize entrapment and other fish impacts.	• The inland material site has been dismissed from further consideration as the material is not suitable for embankment construction. The proposed material site within the Noatak River would be developed within uplands and above the ordinary high water (OHW) of the river. DOT&PF will work with ADF&G during the Environmental Assessment (EA) and permitting process to determine best management practices for material site development to avoid entrapment and other fish impacts.

NEPA Scoping Comments and Responses Summary		
Name, Agency, Date, Method Received	**Comment**	**Response**
Ruslan Maksimenko, FAA Engineering Services, 12/4/17, Email to DOT&PF and Stantec	• There is no mention in the proposed action of FAA emergency shelter or connex and equipment shelter(s). Those are planned new airport features. • Although medium intensity runway lights are included, there is no mention in the proposed action or visual effects of the precision approach path indicator (PAPI). • FAA is researching requirements of installing another set of PAPI and two sets of runway end identifier lights (REIL) systems. An obstruction light(s) is likely to be present as well.	• Thank you for your comments. The proposed action description has been updated to include those planned features.
Mark Rollins, Alaska State Historic Preservation Office (AK SHPO)/Office of History and Archaeology (OHA), 12/8/17, Email to DOT&PF	• Project is within the boundary of NOA-042 (CKAD NHL). The CKNM is adjacent to the project. • Please make sure the regional professionally qualified individual gives special consideration to the possible effects to historic properties within and adjacent to the project area/area of potential effect. • Please contact Rhea Hood, NPS, to discuss the project's potential effects on the NHL.	• DOT&PF will coordinate with NPS, SHPO, and consulting parties through the Section 106 process, which will include identification and evaluation of study area cultural resources within and adjacent to the CKNM and CKAD NHL.
Forest Button, Alaska Village Electric Cooperative (AVEC), 12/12/17, Phone call to DOT&PF	• Concern about moving the airport and fuel supply since the current airport has a direct pipeline that supplies fuel to the village.	• Thank you for your comment. DOT&PF and FAA will be evaluating this work as a connected action in the EA.
	• Interested where this project is in the environmental document preparation process.	• DOT&PF is currently preparing an EA for this project and anticipates a draft will be available for public review in April 2018.
	• AVEC would like to be included in all future scoping/consultation communications.	• DOT&PF will coordinate with AVEC in development of the preliminary design to accommodate applicable utility relocations.

NEPA Scoping Comments and Responses Summary		
Name, Agency, Date, Method Received	**Comment**	**Response**
Lance Miller, NANA, Natural Resources Department, 12/20/17, Email to DOT&PF	• No comments at this time. • The NANA Natural Resources Department would need to be consulted if supplying material sources, surface concerns need to be directed to the NANA Lands Department.	• Thank you for your comment.
Jeff Nelson, NANA, Lands, 12/21/17, Email to DOT&PF	• NANA Lands Department will defer to the Village of Noatak on what route is preferred. We would support the route chosen by the village and NANA Article VIII Committee. • Current assumption is the road will be included in the final ANCSA Section 14(c)(3) Map of Boundaries for eventual transfer to Noatak IRA.	• Thank you for your comment. DOT&PF will work with you during the ROW process to ensure the road ROW is conveyed properly under ANCSA.
	• Upon final road selection by the village a scoping meeting should take place during the design process. • Written confirmation of the final road selected from the Noatak IRA (letter or resolution) would be helpful.	• DOT&PF will follow up with the community to incorporate their preferred access road tie in location, identified by the community between the new school and clinic.
Mark Moore, Native Village of Noatak, 12/21/17, Email and letter to DOT&PF	• During a 12/12/17 Native Village of Noatak General Meeting the new airport project was discussed and there was no opposition to construction or location of the new airport. • Residents support a flight path and airport away from the heart of Noatak to help reduce safety, dust, and noise issues.	• Thank you for your comment.
	• Concern for how fuel will be transferred from planes to tank farm locations (village store, power plant, and school buildings). The existing airport has a fuel pipeline that connects to the tank farm locations. • Fuel and energy costs in Noatak are some of the highest in the U.S. and additional fuel costs will increase financial hardships.	• DOT&PF will coordinate with AVEC in development of the preliminary design to accommodate applicable utility relocations.

NEPA Scoping Comments and Responses Summary		
Name, Agency, Date, Method Received	**Comment**	**Response**
	• Was under the assumption the access road option was decided upon during a meeting with Chris Johnston two years ago. • A road between the new school and clinic would best serve the community.	• Thank you for your comment. The road option between the new school and clinic has been selected as the preferred alternative.
Forest Button, AVEC, 12/22/17, Email and letter to DOT&PF	• The environmental document must consider economic realities of moving the airport to a new location as it applies to fuel receipt, storage, and transfer. • Moving the airport without including elements required for fuel storage and transfer will devastate the community. Fuel transfer tanks will be required near the new airport apron to receive fuel from air tankers and a fuel transfer vehicle or transmission line from the airport to the community. Operation and maintenance cost of a new fuel system will increase dramatically due to airport relocation.	• DOT&PF will coordinate with AVEC in development of the preliminary design to accommodate applicable utility relocations. • DOT&PF and FAA will be evaluating this work as a connected action in the EA.
	• Request airport fuel transfer be included in the scope of the project as follows: "A new fuel transfer tank farm would be constructed adjacent to the airport apron to receive fuel from aircraft fuel tankers. A new transfer fuel vehicle would be provided to transfer fuel from the airport transfer tank farm to the community or a new fuel transmission line would be constructed from the airport to the community."	
	• A full assessment of fuel storage, transfer, maintenance, operation, and ownership must be evaluated as part of the environmental document to understand the community's economic impact of moving the airport.	

NEPA Scoping Comments and Responses Summary		
Name, Agency, Date, Method Received	**Comment**	**Response**
	• Request the following italicized edits be included in Natural Resources and Energy Supply: "…Fuel is stored in multiple tank farms. *Currently, all fuel is delivered to the community from the aircraft tanker header piping and transfer tanks located at the existing airport. Fuel transfer tanks will be required at the new airport location to receive fuel from aircraft fuel tankers. Fuel providers will require a fuel transfer vehicle or a fuel transmission line to transfer fuel from transfer tank at the airport to the community.* The increased distance between the new airport and the Noatak village would cause an increase in resident fuel needs *of community members* who would…"	
Dianna Leinberger, Alaska Department of Natural Resources (ADNR), Division of Mining Land and Water, 12/22/17, Email to DOT&PF	• The river material site may comprise a combination of uplands and shorelands/submerged lands. Submerged lands could be state managed, as the Noatak River is navigable. A surveyor will need to determine what is state submerged lands. • ADNR will submit a title report to the Realty Section and they will consult the riparian specialist in the Survey Section to preliminarily determine land status. • If state submerged lands are selected for use ADNR will need to designate the site prior to contract issuance. • Suggest an application be submitted as soon as possible, or at least 9 months in advance to Julie Smith.	• A survey team has determined the OHW line and where it intersects with the proposed material site. The EA figures will be updated with this information. • DOT&PF will follow up with you for a meeting once status of submerged lands and OHW line has been determined.
	• ADNR will need to review and approve mining and reclamation plans for each material site, submitted to Julie.	• DOT&PF will coordinate with you on development of this site.
	• The new airport land is bisected by a section line. ADNR encourages DOT&PF to coordinate with Stan Brown for vacation procedures and timeframes (can be a year of processing).	• Thank you, DOT&PF will coordinate with Stan during the ROW process.

NEPA Scoping Comments and Responses Summary		
Name, Agency, Date, Method Received	**Comment**	**Response**
	• If the existing airport is no longer used for airport operations it is to be returned to federal ownership. ADNR requests DOT&PF to coordinate with BLM prior to final abandonment to clarify who will have management authority.	• Thank you, DOT&PF will coordinate with BLM during the ROW process to clarify who will have management authority.
	• A bridge across Kuchoruk Creek will require an ADNR easement. An application at least 6 months in advance will be needed, submitted to AJ Wait.	• Thank you for your comment. We will coordinate with you on the easement application.
	• The Kotzebue-Noatak Trail (RS2477) is near the river material site. ADNR recommends access not be hindered during project construction, or a temporary reroute of the winter trail be considered.	• DOT&PF will add this trail to the maps and commit to accommodating traffic along this trail during construction.
Charlie Nelson, Maniilaq Association, 12/22/17, Email and letter to DOT&PF	• Maniilaq Association fully supports the proposed project. • Maniilaq Association supports the proposed access road connecting the existing road that terminated at the local school.	• Thank you for your comment. The road option between the new school and clinic has been selected as the preferred alternative.
	• Maniilaq Association supports the tribe's and community's desire to include a means in the project scope to transfer fuel via a pipeline from the new airport to a terminal point at the bulk fuel tanks. This needs to be addressed to ensure fuel is available to residents and not to increase already high fuel costs.	• DOT&PF will coordinate with AVEC in development of the preliminary design to accommodate applicable utility relocations. • DOT&PF and FAA will be evaluating this work as a connected action in the EA.
John Chase, Northwest Arctic Borough (borough), 12/22/17, Email to DOT&PF	• The borough supports construction of a new Noatak airport and a new inland material source that will not pose a negative effect on anadromous fish populations that inhabit the river. • The borough is fully supportive of the project.	• Thank you for your comment.

U.S. Department
of Transportation

**Federal Aviation
Administration**

AIRPORTS DIVISION

FAA Alaskan Region
222 W. 7th Avenue, Box 14
Anchorage, Alaska
99513-7587

February 20, 2018

Bob Henszey
Branch Chief
U.S. Fish and Wildlife Service
101 12th Avenue
Fairbanks, Alaska 99701

Dear Mr. Henszey,

Noatak Airport Relocation , Noatak, Alaska

Endangered Species Act (ESA) Notification of Section 7

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), proposes to relocate the Noatak Airport to provide the Village of Noatak with a safe, reliable, and cost effective facility. This facility would provide the community with adequate access, support the community's long-term development goals, and conform to current FAA safety regulations.

The existing Noatak Airport and adjacent community are located on the west bank of the Noatak River, 55 miles northwest of Kotzebue (Figure 1). The proposed airport relocation would be located approximately 1.5 miles west of the existing airport. A new 2-mile long airport access road would be constructed from the Village of Noatak to the new airport location (Figure 2).

Section 7 of the *Endangered Species Act* (ESA) consultation was conducted in 2006 and concurrence was received on May 12, 2006 from your office that the proposed project is not likely to adversely affect listed species. Your letter stated that preparation of a Biological Assessment, and further consultation under Section 7 of the ESA, is not necessary. Due to the time lapse since the last consultation, DOT&PF requests updated consultation to gather additional or updated comments you may have on the proposed project. Your responses will help provide us with the necessary input to develop and design a proposed final project that avoids and minimizes adverse effects to Federally listed species, proposed species, candidate species, and their critical habitat to the maximum extent practicable.

Purpose and Need

Noatak, a community of approximately 546 people is the only settlement on the 400-mile long Noatak River, just west of the 6-million acre Noatak National Preserve and east of the Cape Krusenstern National Monument. There are no roads connecting the community to outside urban

areas and commercial barge service on the river was suspended in 1992 due to inadequate channel depth of the Noatak River near the community. While small boats, all-terrain vehicles, and snow machines are used for inter-village and subsistence travel, Noatak relies on air transportation for major commerce, supplies, fuel, access, and medical evacuation needs. The existing airport is threatened by bank erosion along the Noatak River. Erosion studies in 2003, 2013, and 2015 show that the river, and other erosive processes, is actively eroding the bank and will likely wash out the apron and impact the runway in the near future. In addition, the existing aircraft parking apron, runway protection zone (RPZ), approach slope, and runway safety area (RSA) are deficient in meeting the safety needs of the aircraft currently using the airport.

Proposed Action

Multiple airport location and access road alternatives have been considered since project inception. Currently, DOT&PF is considering one build alternative for the new airport location (Figure 2). The Proposed Action includes the following elements (Figures 2-3):

- **Airport:** A new airport including a new runway, taxiway, apron, Snow Removal Equipment Building (SREB), FAA emergency shelter, FAA connex and equipment shelter(s) would be constructed approximately 1.5 miles west of the existing airport location. The new runway would be 4,000 ft. long, 75 ft. wide, with a 4,600 ft. long, 150 ft. wide RSA. New navigational aids, medium intensity airport lighting, airport weather observation system, and apron site lighting would also be installed. The SREB, FAA emergency shelter, FAA connex and equipment shelter(s) would be constructed on the apron.
- **Access Road:** A new airport access road (approximately 2.2 miles long and 20 ft. wide) would be constructed from a location originating between the clinic and school in the Village of Noatak to the new airport location (Figure 2).
- **Bridge:** A single-span bridge over Kuchoruk Creek would be constructed at the new airport access road crossing.
- **Electric Line:** An overhead electric line for airport lighting and the SREB would be constructed from the Village of Noatak to the new airport location along the new airport access road alignment. Poles would be spaced up to 250 ft. apart.
- **Material Sites and Haul Routes:** A potential local material source on the Noatak River would be used to construct the proposed project. The material source is approximately two miles downstream from the village and may be developed to provide necessary material for the project. Material extraction, hauling, and contractor equipment access to the new airport site is anticipated to occur when the ground is frozen. Potential material haul routes are shown on Figure 2. An additional overland haul route from the Red Dog Port site may also be used in winter to transport needed equipment and materials.
- **Land Acquisition and Disposal:** Land would be acquired for construction of the proposed project and the existing airport property would be disposed of in accordance

with FAA grant assurances. Land would be purchased or right-of-way obtained for the new airport, access road, and material site.

No Anticipated Adverse Impacts

We are consulting with the U.S. Fish and Wildlife Service (USFWS) to comply with requirements mandated in Section 7 of the ESA to:

- Identify potential project effects,
- Not jeopardize the continued existence of a federally listed species, or
- Not destroy or adversely modify designated critical habitat.

Given the location of the project, project activities, and review of the species information available, it is anticipated that no adverse effects on any ESA-listed species or designated critical habitat would occur.

While Polar bears range along the Chukchi Sea coast, the Federal Register 50 CFR Part 17 (USFWS, 2010a) critical habitat designations do not extend inland to the project area. The proposed study area is within the migratory ranges for Spectacled Eider (*Somateria fischeri*) and Steller's Eider (*Polysticta stelleri*); however, it does not overlap with designated critical habitat for either eider species (USFWS, 2010b and c).

Actions to Reduce or Remove Project Effects

Where possible, vegetation clearing, site preparation, and construction activities will adhere to the Northern Alaska recommended periods to avoid vegetation clearing from June 1 to July 31 (USFWS, 2017). If vegetation clearing, site preparation, and construction occurs within these periods, pre-construction nest surveys would be conducted by qualified personnel and appropriate mitigation developed in consultation with the USFWS.

We request your review of the project and concurrence that the proposed project is not likely to adversely affect any Federally listed species, proposed species, candidate species, nor their critical habitat.

Thank you for your attention to this request, if you have any questions regarding the proposed project, you may contact Alaska Region FAA Environmental Staff by phone at (907) 271-5438, or by email at AKAirportEnv@faa.gov.

Sincerely,

Keith Gordon
Environmental Protection Specialist

Enclosures: Figure 1 – Location & Vicinity Map
Figure 2 – Proposed Action
Figure 3 – Proposed Action Site Plan
IPAC

cc: Christopher Johnston, P.E., Project Manager
Melissa Jensen, Environmental Impact Analyst

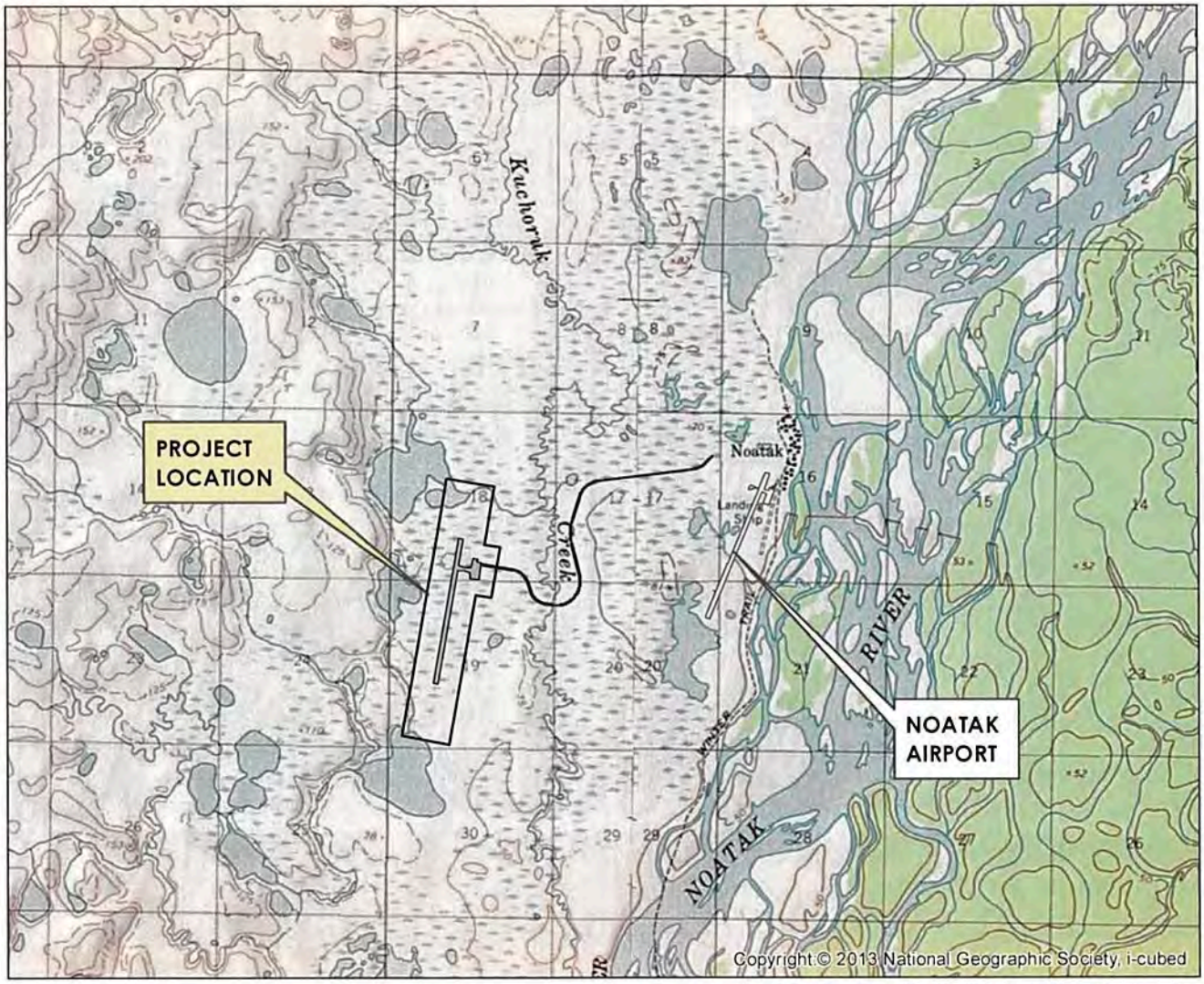
References

U.S. Fish and Wildlife Service (USFWS), Endangered Species. 2010a. Federal Register, Volume 75, Number 234, Tuesday, December 7, 2010 (50 CFR Part 17). Docket No. FWS–R7–ES–2009–0042; 92210–1117–0000–FY09–B4.

U.S. Fish and Wildlife Service (USFWS), Endangered Species. 2010b. *Steller's Eider (Polysticta stelleri) Range Map*. March 24, 2010. Accessed on September 21, 2017 at https://www.fws.gov/alaska/fisheries/endangered/StellEider_RangeMap.htm

U.S. Fish and Wildlife Service (USFWS), Endangered Species. 2010c. *Spectacled Eider (Somateria fischeri) Range Map*. March 24, 2010. Accessed on September 21, 2017 at https://www.fws.gov/alaska/fisheries/endangered/SpecEider_RangeMap.htm

U.S. Fish and Wildlife Service (USFWS). 2017. *Timing Recommendations for Land Disturbance and Vegetation Clearing. Planning Ahead to Protect Nesting Birds*. June 2017. Accessed on September 21, 2017 at https://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/pdf/vegetation_clearing_2017.pdf



Graphics developed by Stantec Consulting Services, Inc.

Project Origin: City of Noatak
Kotzebue Recording District,
Section 16-21, 28-32,
Township 25N, Range 19W
Kateel River Meridian

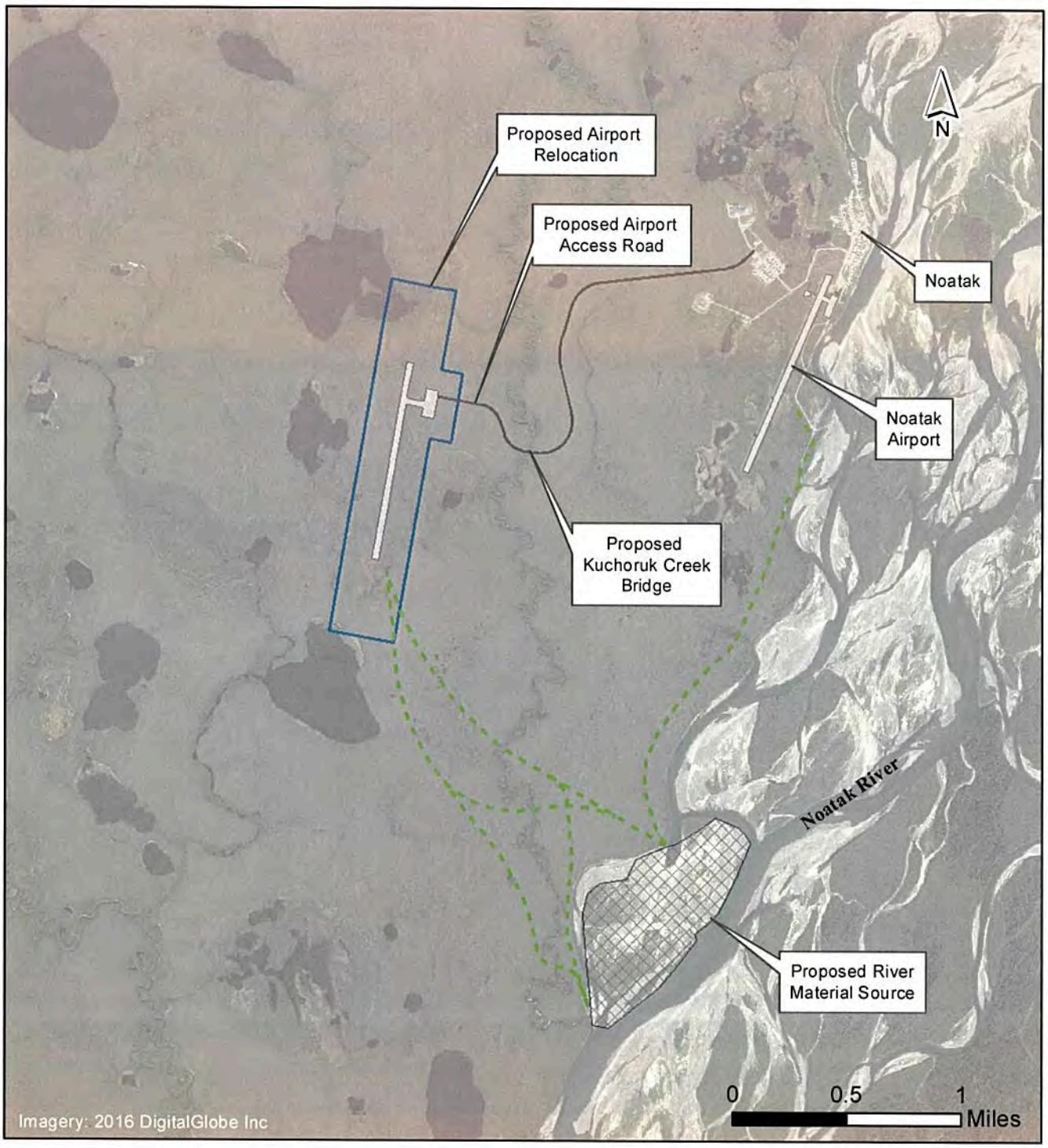
0 0.5 1 2 Miles
1:63,360 (at original document size of 8.5x11)

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Location & Vicinity Map

DATE: January, 2018 | FIGURE **1**



LEGEND

- Proposed Airport Access Road
- Proposed Winter Access Road
- Proposed Runway & Apron
- Proposed Material Source

Graphics developed by Stantec Consulting Services, Inc.

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Proposed Action

DATE: January, 2018

FIGURE **2**

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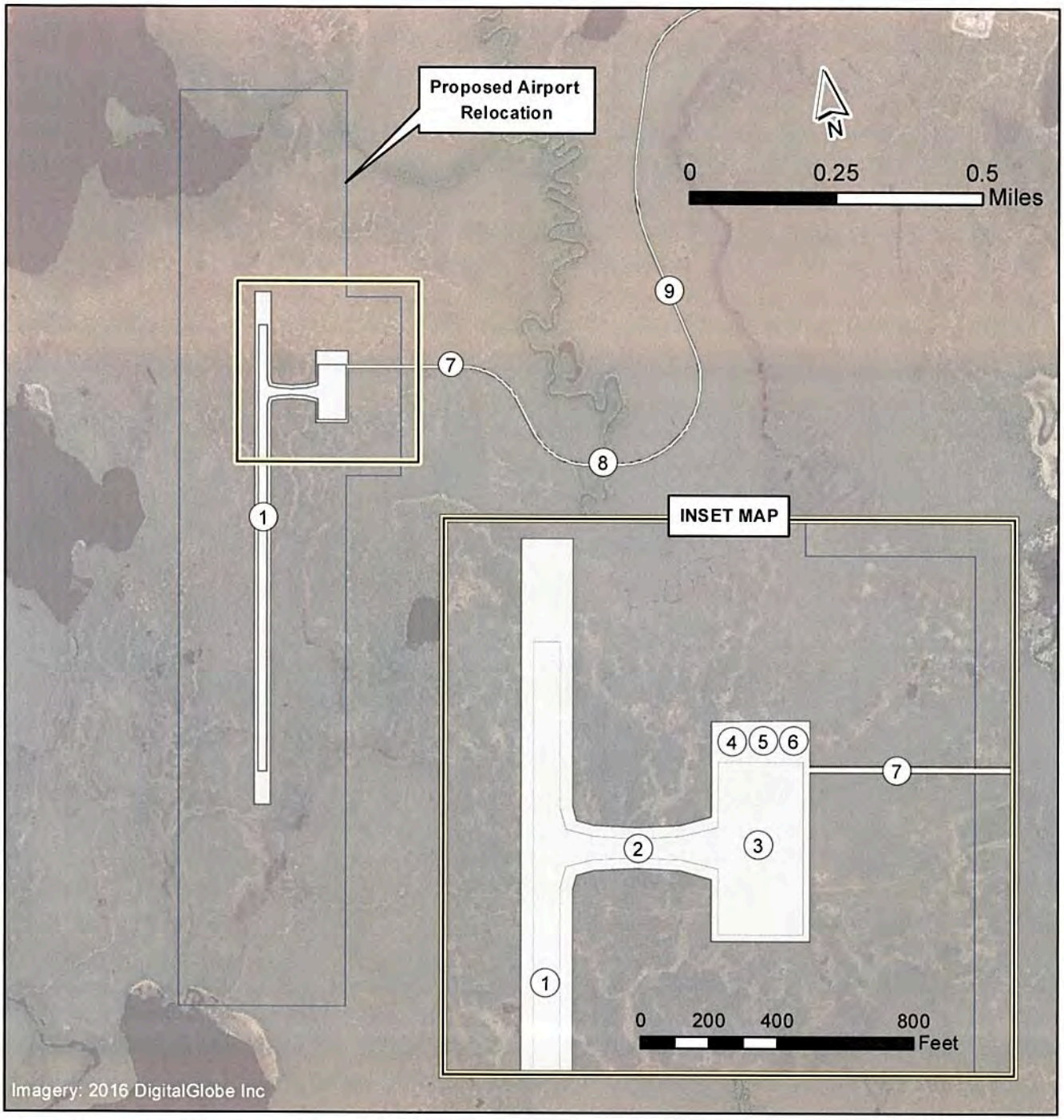


PROPOSED ACTION:

1. Runway, Safety Area, and Navaids
2. Taxiway
3. Apron
4. SREB
5. FAA Emergency Shelter
6. FAA Connex and Equiment Shelter(s)
7. Airport Access Road
8. Kuchoruk Creek Bridge
9. Above Ground Electric Line

Graphics developed by Stantec Consulting Services, Inc.

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Proposed Action Site Plan

DATE: January, 2018

FIGURE 3

U:\2047059000\GIS\mxd\Setion 7 Letter\2047059000_Sec7_Ltr_Fig-03_Proposed_Action_Site_Plan.mxd Revised: 2018-01-25 By: cpannone

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Northwest Arctic County, Alaska

Local office

Fairbanks Fish And Wildlife Field Office

(907) 456-0203
(907) 456-0208

MAILING ADDRESS
101 12th Avenue

Room 110
Fairbanks, AK 99701-6237

PHYSICAL ADDRESS
101 12th Avenue, Room 110
Fairbanks, AK 99701-6237

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

[1] are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Polar Bear Ursus maritimus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4958	Threatened Marine mammal

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the E-bird data mapping tool (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the E-bird Explore Data Tool (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
American Golden-plover Pluvialis dominica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 15
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Feb 1 to Sep 30
Bar-tailed Godwit Limosa lapponica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 15
Black Turnstone Arenaria melanocephala This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Jul 31
Buff-breasted Sandpiper Calidris subruficollis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9488	Breeds Jun 10 to Aug 20

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Red-throated Loon Gavia stellata — Breeds May 1 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Semipalmated Sandpiper Calidris pusilla — Breeds Jun 10 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Whimbrel Numenius phaeopus — Breeds May 10 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9483

Yellow-billed Loon Gavia adamsii — Breeds Jun 1 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8199

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

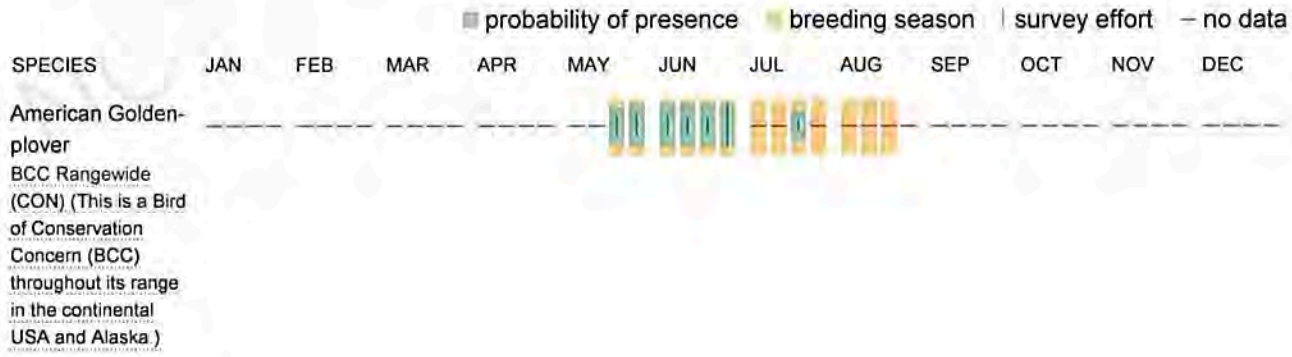
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.



Bald Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

Bar-tailed Godwit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Black Turnstone
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Buff-breasted Sandpiper
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Golden Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

Red-throated Loon
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Semipalmated Sandpiper
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Whimbrel
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Yellow-billed Loon
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the BGEPA should such impacts occur.

Marine mammals

Marine mammals are protected under the Marine Mammal Protection Act. Some are also protected under the Endangered Species Act

[1] and the Convention on International Trade in Endangered Species of Wild Fauna and Flora[2].

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and the National Marine Fisheries Service (NMFS) [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NMFS are **not** shown on this list; for additional information on those species please visit the NMFS marine mammal website.

The Marine Mammal Protection Act prohibits the take (to harass, hunt, capture, kill, or attempt to harass, hunt, capture or kill) of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

1. The Endangered Species Act (ESA) of 1973.
2. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.

The following marine mammals under the responsibility of the U.S. Fish and Wildlife Service are potentially affected by activities in this location:

NAME

Polar Bear Ursus maritimus
https://ecos.fws.gov/ecp/species/4958

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Overland Haul Route Alternatives Meeting

Noatak Airport Relocation / DOT&PF No. Z614780000

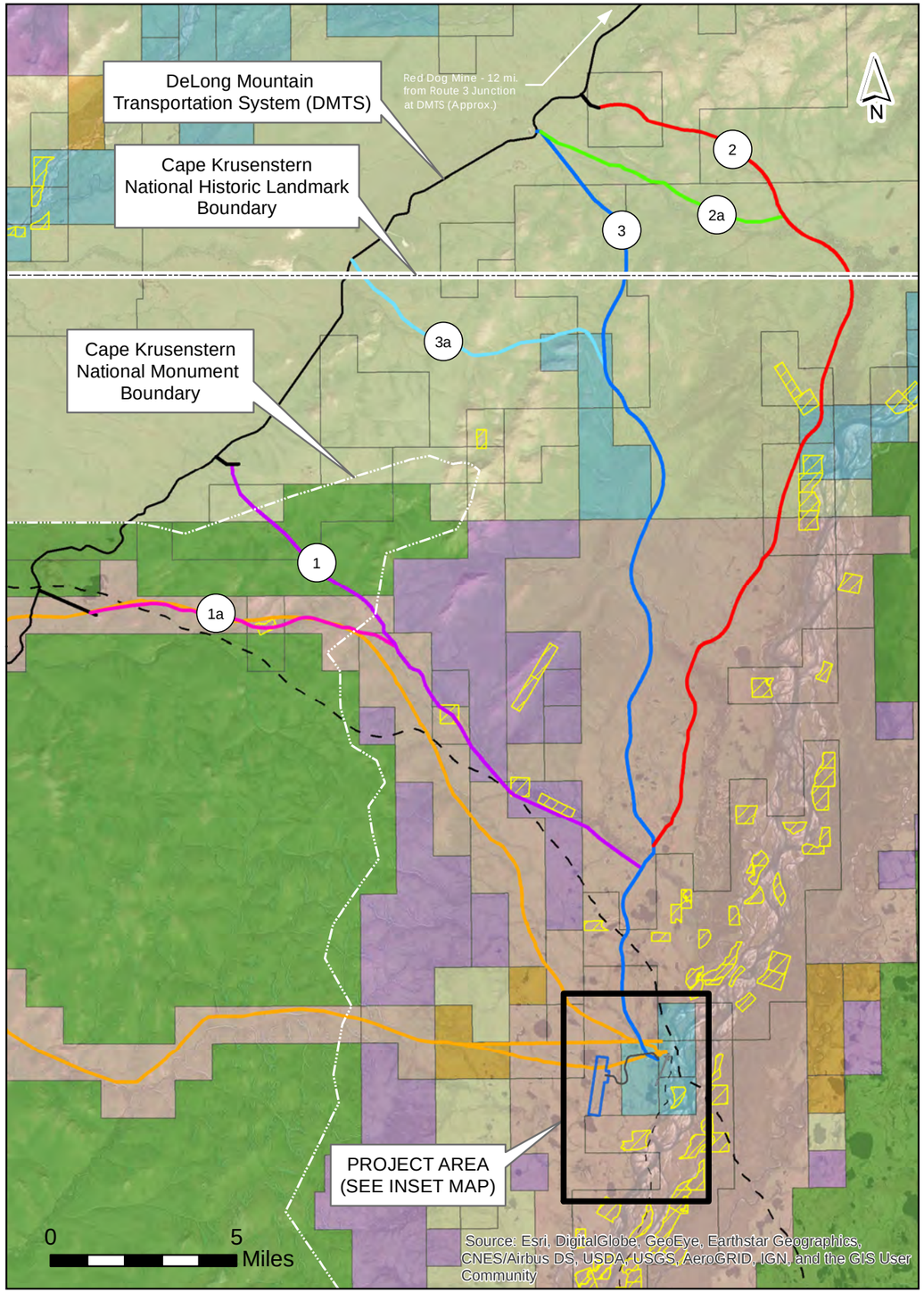
Date/Time:	March 7, 2018 / 9:00 AM AKST
Place:	DOT&PF ROW Conference Room/Teleconference
Next Meeting:	N/A
Distribution:	Alaska Department of Transportation and Public Facilities (DOT&PF) Al Beck, Chris Johnston, Brett Nelson, Missy Jenson, Tom Gamza, Melanie Bray Federal Aviation Administration (FAA) Keith Gordon National Park Service (NPS) Brooke Merrell (Environmental Planning and Compliance), Hillary Robison (Western Arctic National Parklands), Whitney Boone (Natural Resources) Bureau of Land Management (BLM) April Rabuck (Land), Brian Bourdon (Realty), Bonnie Million (Anchorage Field Manager) Stantec Consulting Ltd. (Stantec) John Limb, Sara Lindberg, Kacy Hillman, Ross Smith, Nick Straka
Attendees:	DOT&PF: Al Beck, Chris Johnston, Brett Nelson, Missy Jenson, Tom Gamza, Melanie Bray FAA: Keith Gordon NPS: Brooke Merrell, Hillary Robison, Whitney Boone, Raime Fronstin, Martha Fronstin BLM: April Rabuck, Brian Bourdon Stantec: John Limb, Sara Lindberg, Kacy Hillman, Ross Smith
Absentees:	BLM: Bonnie Million Stantec: Nick Straka

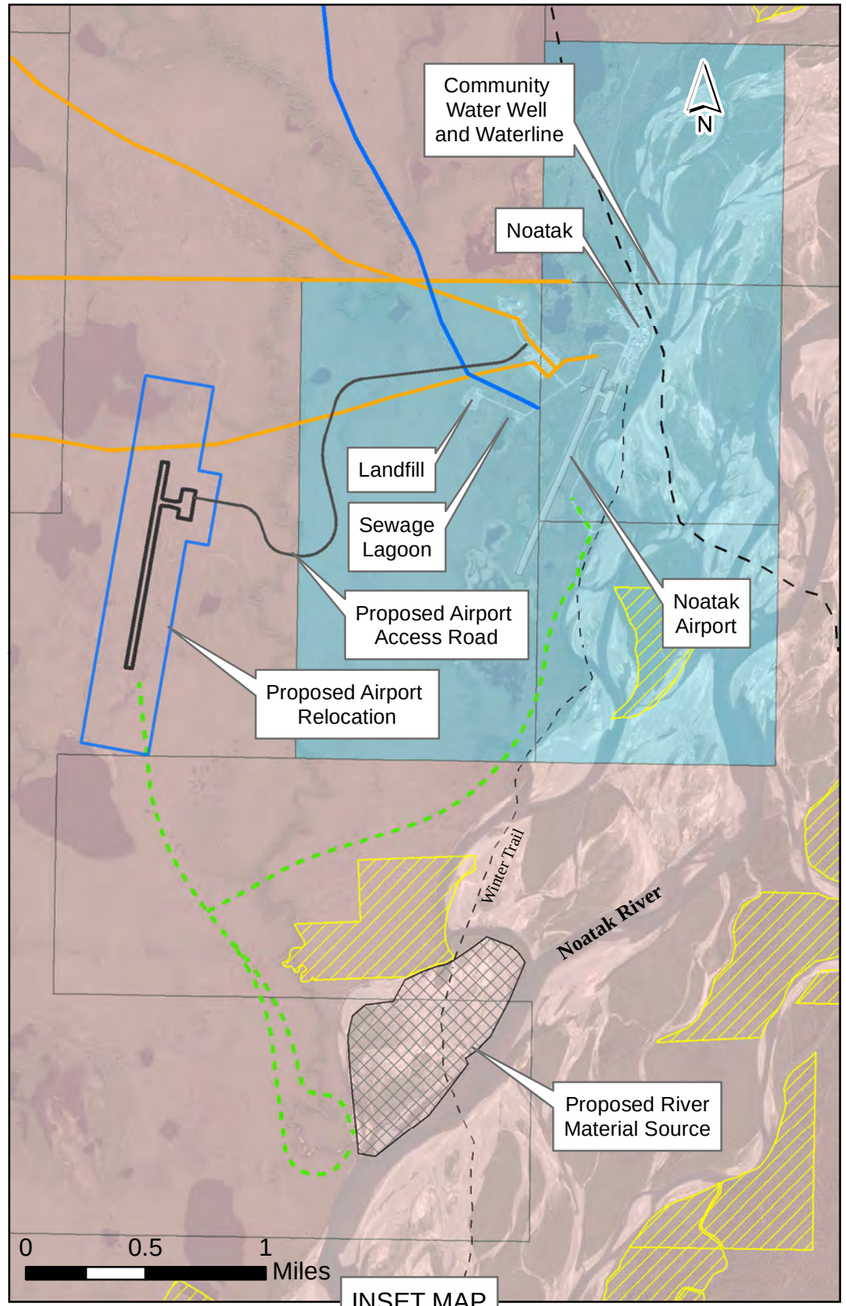
Item:	Action:
Project and attendee introductions. Chris Johnston provided a brief project introduction and facilitated attendee introductions.	None
DeLong Mountain Transportation System (DMTS) Keith Gordon asked NPS if use of the DMTS between the port and the proposed overland haul route would be considered use of NPS land. NPS responded that use of the DMTS would not be considered use of NPS land.	None
Overland Haul Routes Between Noatak and DMTS Keith Gordon noted Figure 11 from the EA figure set shows the land status along the proposed overland haul routes 3 and 3a. Routes 3 and 3a do not traverse BLM or NPS land. Routes 1, 1a, 2, and 2a were considered but dismissed and there was a question what land status they traversed. *After the meeting, it was confirmed Route 1 traverses BLM and NPS land and 1 and 1a go through the Cape Krusenstern National Monument	Determine land status of Routes 1, 1a, 2, and 2a.

Item:	Action:
(CKNM) Boundary. Routes 2 and 2a do not traverse BLM or NPS land. See attached Figure 11 – Land Ownership.	
Keith noted an ice road is proposed each year for 3 consecutive years.	
Keith asked BLM and NPS if they were interested in being a cooperating agency of the Environmental Assessment (EA).	BLM and NPS to state cooperating agency status.
NPS responded they would respond by the end of the week. **See attached email for follow-up response after the meeting on 03.07.18 that NPS does not request cooperating agency status.	
Village of Noatak Road to DMTS	None
Keith Gordon noted the Village of Noatak is interested in constructing a year-round road for community use between the DMTS, to access the port, and the Village of Noatak. Keith asked if the route or timeline of the project is known yet.	
Al Beck responded that the Village of Noatak is evaluating potential routes between Noatak and the DMTS and will determine a go or no go on the project. This is an FHWA-funded project and is not connected to the Noatak Airport Relocation Project.	
Keith asked if the selected temporary overland haul route between Noatak and DMTS would allow for future access along that same route.	
Al Beck and Chris Johnson responded that future access along the temporary overland haul route would not be allowed. Also, there are different requirements for an ice road versus a year-round road including bridges for water crossings on a year-round road and proximity to water for ice road constructability	
BLM and NPS Land Swap	None
Keith Gordon asked BLM and NPS if they are considering a potential future land swap. BLM and NPS responded that this is still under preliminary discussions and nothing yet has been decided.	
Alaska National Interest Lands Conservation Act (ANILCA) Title 11	None
NPS noted that if an overland haul route is selected within the CKNM boundary that ANILCA Title 11 would need to be satisfied and this would include a lengthy timeframe of processing all federal permits at the same time as the environmental document.	
Evaluation of Dismissed Alternatives	
Chris Johnston asked if anyone on the call needed additional information about overland routes 1, 1a, 2, and 2a before they could be dismissed from the Draft EA. Keith Gordon responded that FAA needs to review the Draft EA before making any decisions.	FAA to review Draft EA to evaluate rationale for particular overland route dismissal.

Attachment: *Figure 11
**NPS Email, NPS does not request cooperating agency status, March 7, 2018

c. DOT&PF: Al Beck, Chris Johnston, Brett Nelson, Missy Jenson, Tom Gamza, Melanie Bray
FAA: Keith Gordon
NPS: Brooke Merrell, Hillary Robison, Whitney Boone, Raime Fronstin, Martha Fronstin
BLM: April Rabuck, Brian Bourdon
Stantec: John Limb, Sara Lindberg, Kacy Hillman, Ross Smith





LEGEND

- Proposed Runway & Apron
- Project Area
- Proposed Material Source
- Native Allotment
- Proposed Winter Access Road
- 17(b) Easement
- Northwest Arctic Borough (NAB) Winter Trail
- Kotzebue - Noatak Trail (RS2477 Trail)

POTENTIAL OVERLAND HAUL ROUTES

- Route 1
- Route 1a
- Route 2
- Route 2a
- Route 3 (Proposed)
- Route 3a (Proposed)

LAND OWNERSHIP

- BLM
- National Park Service
- Native Corporation
- Other Private or Municipal
- State
- State and Native

Notes and Citations:

1. Coordinate System: NAD 1983 StatePlane Alaska 7 FIPS 5007 Feet
2. Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Orthoimagery: Noatak 2016 SID.
3. Land Status Data Source: Originator: Alaska Department of Natural Resources, Information Resource Management, Title: General Land Status - October 2017 - All Attributes - Clipped to 1:63,360 Coastline (EPSG:3338 NAD83 Alaska Albers).

Graphics developed by Stantec Consulting Services, Inc.

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Land Ownership

DATE: March, 2018 | FIGURE **11**

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Hillman, Kacy

From: Merrell, Brooke [mailto:brooke_merrell@nps.gov]
Sent: Wednesday, March 07, 2018 1:25 PM
To: keith.gordon@faa.gov
Cc: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>; Lindberg, Sara <sara.lindberg@stantec.com>; brett.nelson@alaska.gov; chris.johnston@alaska.gov; Hillary Robison <hillary_robison@nps.gov>
Subject: Re: Noatak Airport Relocation Scoping - NPS does not need CA status at this time.

Keith,

That is correct, the NPS does not request cooperating agency status for the Noatak Airport Relocation project as it is currently proposed. Thanks for the additional information provided in this morning's call.

Best, Brooke

On Wed, Mar 7, 2018 at 12:53 PM, <keith.gordon@faa.gov> wrote:

Brooke,

Re our phone conversation at 12:45 today FAA understands that the NPS does not desire cooperating agency status on the

Noatak Airport Relocation EA as long as there are no impacts to the Monument.

As discussed should the proposed project change in a manner that would impact the Monument or Landmark in a manner not disclosed to date in the PDEA or our teleconference at 9AM this morning (or the proposed action change) FAA would notify NPS so NPS can determine if there is anything NPS needs to address.

Thanks

--
Brooke Merrell
Environmental Planning and Compliance Team Leader
NPS, Alaska Regional Office
240 W 5th Avenue
Anchorage, AK 99501
(907) 644-3397
brooke_merrell@nps.gov

Click here for the new NEPA Handbook and supplemental guidance

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Fairbanks Fish and Wildlife Field Office
101 12th Avenue, Room 110
Fairbanks, Alaska 99701
March 22, 2018

Keith Gordon
Environmental Protection Specialist
FAA Alaska Region
222 W. 7th Ave., Box 14
Anchorage, Alaska 99513-7587

Re: Noatak Airport Relocation
Consultation Update

Dear Mr. Gordon:

This letter is in response to your request for an updated consultation on endangered and threatened species, and critical habitats pursuant to section 7 of the Endangered Species Act of 1973 (ESA), as amended. Based on the project plans for the Noatak Airport relocation in 2006, the U.S. Fish and Wildlife Service (Service) concluded the proposed airport relocation was not likely to adversely affect listed species (May 12, 2006 letter to ADOT&PF). The Service has reviewed the updated proposed action to determine if it would adversely affect listed species under our jurisdiction. One species listed as threatened under the ESA may occur in the project area that was not listed in 2006: polar bears (*Ursus maritimus*). Both the spectacled eider (*Somateria fischeri*) and the Alaska-breeding population of Steller's eider (*Polysticta stelleri*) are listed as threatened, and may also migrate through the proposed project area.

THE PROPOSED ACTION

We understand the Alaska Department of Transportation and Public Facilities in cooperation with the Federal Aviation Administration propose to relocate the Noatak Airport to provide the Village of Noatak, Alaska, with a safe, reliable, and cost effective facility (Figure 1). The proposed new location would be about 1.5 miles west of the existing airport, and connected to the village by a new 2-mile long access road. Additional work would include a single-span bridge over Kuchoruk Creek, an overhead electric line located along the airport access road, and material sourced from the Noatak River about 2-miles downstream from the village when the ground is frozen. Construction is scheduled to begin November 2022 with mobilization in August 2022, and to be completed and demobilized by September 2024.

THE ACTION AREA

The action area includes the proposed relocated airport (~15.8 acres), material source access road (~2.2 miles long × 20 feet wide), and material site located near the Village of Noatak, Alaska (Figure 2).

EFFECTS OF THE ACTION ON LISTED SPECIES

Project effects on listed eiders
The Service listed the spectacled eider on May 10, 1993 (58 FR 27474) and the Alaska-breeding population of the Steller's eider as threatened on June 11, 1997 (62 FR 31748). Neither species nests in the region, and it is extremely rare for either species to migrate as far inland as Noatak, since they prefer migrating near marine waters. Given the extremely low probability that listed eiders would occur in or near the action area, we expect effects of the proposed action on listed eiders would be discountable.

Project effects on polar bears
The Service listed the polar bear as threatened under the ESA on May 15, 2008 (73 FR 28212). Polar bears occur in northwestern Alaska but generally occur offshore on sea ice or along the coast. Although individuals occasionally move inland from the coast, it is very rare for polar bears to move as far inland as Noatak or the proposed haul routes. Given the extremely low probability that polar bears would occur in or near the action area, we expect effects of the proposed action on polar bears would be discountable.

CONCLUSION

Due to the extremely low likelihood that listed eiders and polar bears would occur as far inland as Noatak, we expect effects of the proposed action on listed eiders and polar bears would be discountable. Therefore, the Service concludes the proposed action is not likely to adversely affect listed eiders or polar bears. Preparation of a Biological Assessment or further consultation under section 7 of the ESA is not necessary at this time.

Although this concludes consultation for the proposed project under the ESA, it does not preclude the requirement for project-specific assessment and appropriate compensatory mitigation under section 404 of the Clean Water Act. Therefore, USACE maintains responsibility for evaluating project-specific wetland impacts through discussions with the Service's Planning and Consultation branch, and determining appropriate compensatory mitigation for individual permit applications under the 404 program. Thank you for the opportunity to comment on this project. If you need further assistance, please contact Bob Henszey at (907) 456-0323.

Sincerely,

Ted Swem

Ted Swem,
Endangered Species Coordinator

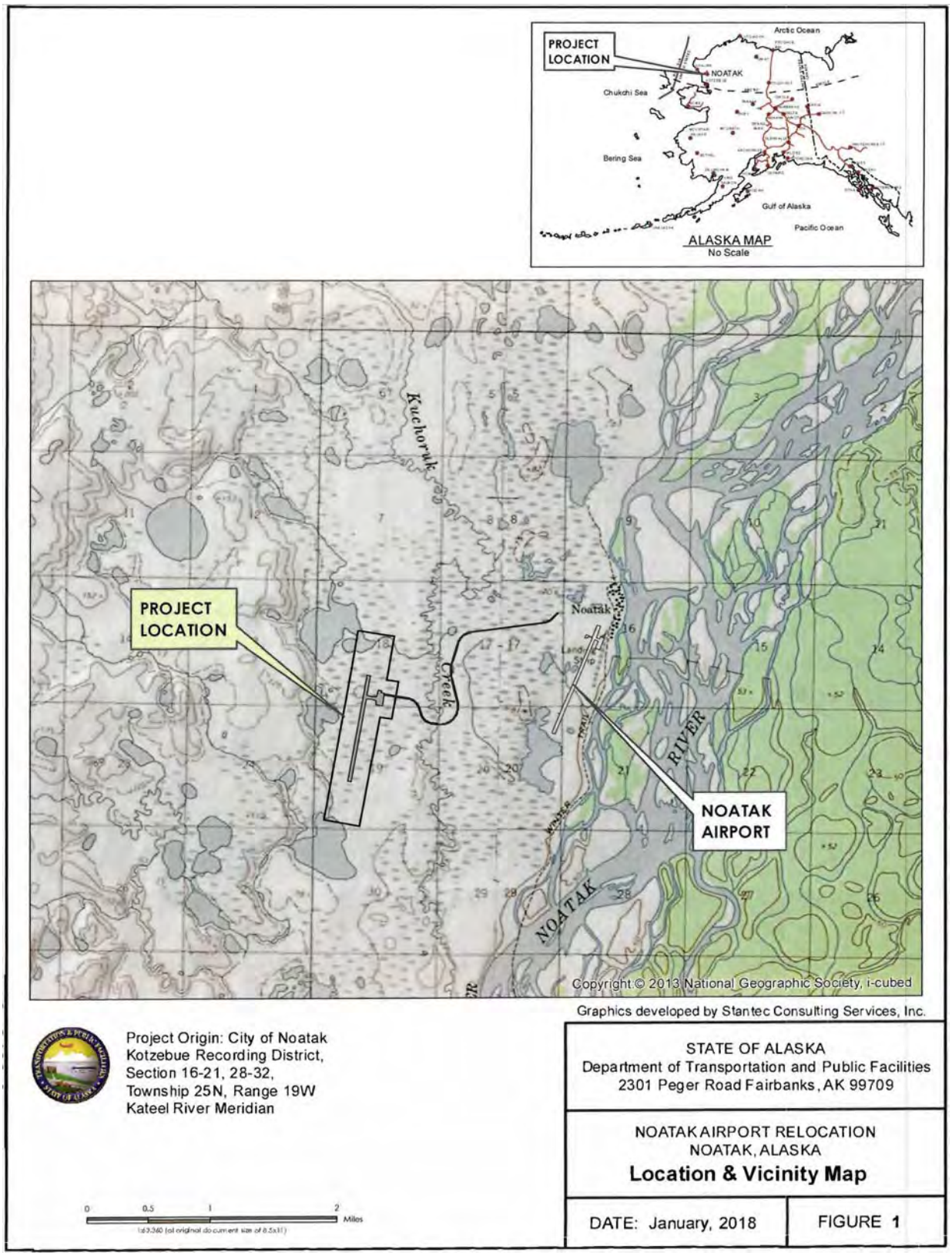

Figure 1. Location of the proposed relocated airport at Noatak, Alaska.

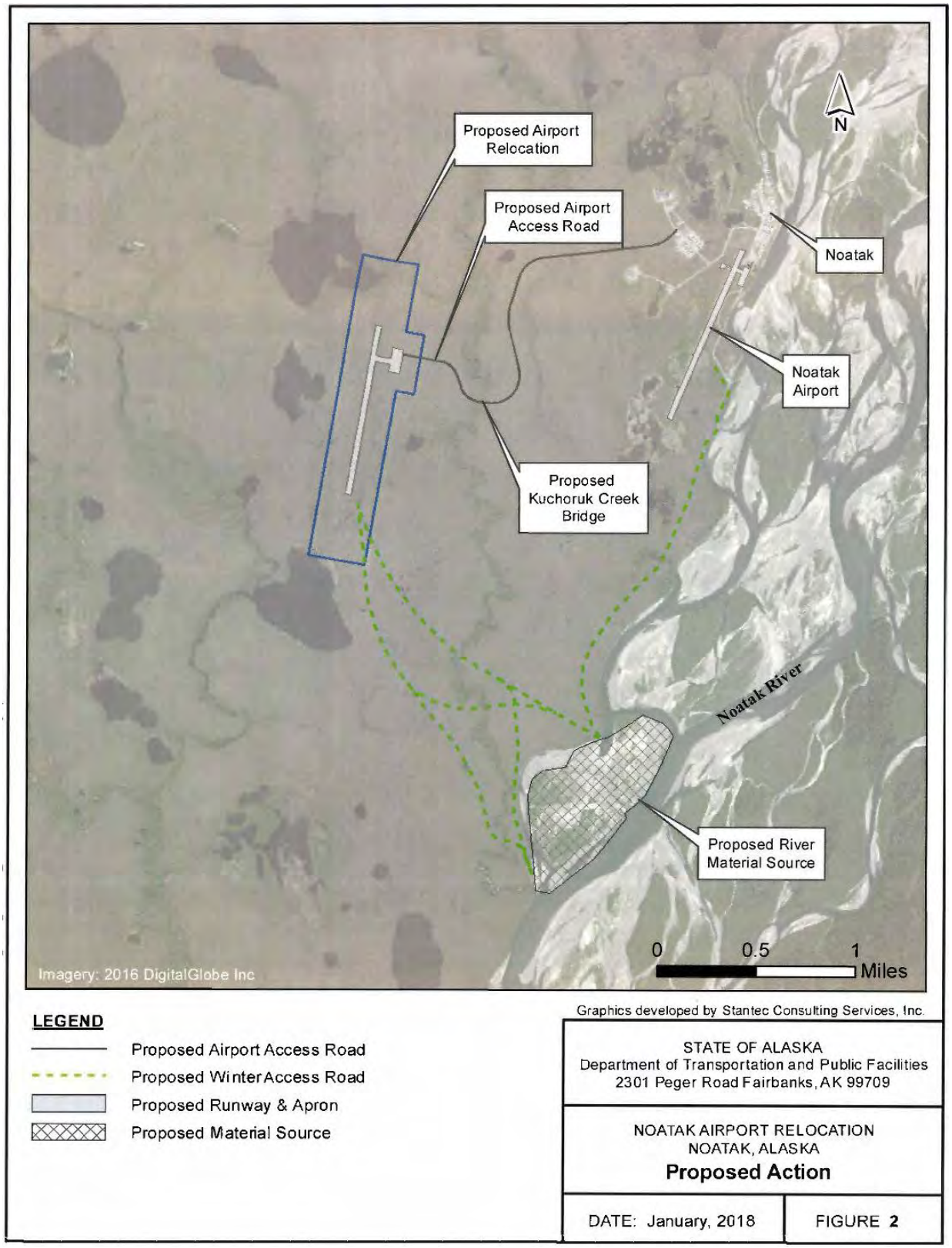

Figure 2. The proposed action area for the proposed relocated airport at Noatak, Alaska.

Noatak Airport Relocation
Request for Scoping Comments

Comments by FAA Western Service Area, Engineering Services, AK
Forwarded by: John Louie, Environmental Engineer, AJW-2W15Q
3/26/2018

1. Please include the following bullet item in the Proposed Action description of the Scoping Document:

   - **FAA Facilities**:
     The following FAA equipment will be relocated from the existing airport to the new airport – an equipment (storage) connex, the Remote Communications Outlet (RCO) system, Automated Weather Observing System (AWOS), the Precision Approach Path Indicator (PAP) system. The Weather Camera System (WCAM) will be relocated from the existing off-airport location to the new airport.

     New FAA infrastructure will include a new consolidated FAA building and a new VSAT dish. These new facilities will be located within the boundaries of the new Noatak Airport.

     The follow equipment will be decommissioned and removed by FAA – (1) an existing engine generator shelter and associated aboveground fuel tank; (2) an existing contingency shelter; (3) a small aboveground fuel storage tank, and; the existing NDB/DME facilities, including the antennas and infrastructure.

2. Identification of FAA facilities in Figure 3 is not necessary.

Noatak Runway Relocation EA Resource Agency Teaming - U.S. Fish and Wildlife Service Meeting notes

Meeting Summary October 12, 2018

Meeting Location:
DOT&PF
Fairbanks

Attendees - In Person

Sara Lindberg

Melissa Jensen

Melanie L Bray

Scott Maybrier

Leisha Ray

paul.karczmarczyk@alaska.gov

Amal Ajmi , USFWS

AB- go over Team Roles

PK- Would like to have Fish and Wildlife Service involved early and help with alternatives

FWS- frontload and have work done on the front.

SL- What background info do you know about on this project?

FWS- I've worked on a project in Noatak on gravel site and communication tower. Read the material on proposed placement of the material and know the purpose and need.

PK- Concerns of the endangered species and critical habitats

FWS- Polar bear range includes Noatak, however the density of polar bears in the Noatak area is low. We expect encounters with polar bears to be infrequent. If encountered, behavioral effects to transient bears would be minor and temporary. There is no documented breeding of eiders. We don't think eiders are an issue, and polar bears are not an issue though I have brought interaction guidelines with me. These minimization measures are examples we provide to project proponents who may encounter polar bears. From our office, this project is not an issue and is a simple biological assessment and no formal consultation; just a letter and that is for the endangered species issue.

Migratory Bird Treaty and Eagle Act need consideration, and we care about birds and fish and mammals; and fish and game handles that very well. There was a picture of the location and we were curious what birds were in the area and it was split between water birds others, and the two that came up were bald and golden eagle, We will discuss that and please notify our office if you see a nest.
For migratory birds we'd appreciate help to minimize destruction to nests, but there's no law about accidental and inadvertant impacts, but please help to minimize it through construction timing. I saw power lines are proposed and suggest diverters. We recommend that for eiders but it will help all birds and they will provide this in the letter. The lighting system of the airport; towers, communication, etc. should use FAA standards to help bird avoid take and they can help with that.

AB-FAA is our standard anyway and we will comply with it.

FWS: As for Kucharok Creek I didn't have time to see if its a fish bearing stream and fish and game will tell you, but FWS is interested in aquatic passage and if there is a culvert we would provide some recommendations on how it's set and that would pretty much be it.

AB- we have a couple bridge structures to look at and M&O asked us to look at culvert, but community doesn't want a culvert; however we are going to look at one but have some homework to do.

FWS- It's a valid alternative to look at for assessment. The gravel source would be in wetlands and would want to know what and how much is taken. There's a gravel source that hasn't been developed farther north and was an inland sites you also looked at. If DOT can confirm that you've tried to minimize disturbance and used a certain site as a result that is helpful.

PK- Pointed out the potential haul route on the Noatak. AB- pointed out the Native allotments

PK- We try to minimize wetland disturbance and do this routinely. We try to clear bird windows, mandated or not; given the landscape would try to clear the winter before putting embankment down

FWS- what will happen to the old airstrip? will it be left in place? there is a lot of spills and what is the plan with water encroachment and if contaminated land falls in the water?

MB- the default is that leasees are required to clean up their area and we'd return the property to the original owner and are required to remove all structures. That doesn't include gravel, but we have utilities, header pipes and would would also deconstruct the runway. BLM, FAA and community to get a waiver on that requirement because the community would like the the property returned to them and they would then take responsibility for it. Currently the old school, and tank farm are on airport property, and the tank farm is still used by all village residences, the store and the school. While its' on DOT property the community doesn't have the resources to turn the land over. But they want the area cleaned up so they can use the rest of the gravel.

FWS- The river is not eating it at the top but the lower.

MB-They have extra time because erosion is moving up north and towards the runway where the header is. Noatak has a community plan to move the tank farm and everything to estimate cost and tie that in with the future village projects.

PK- So if we have contaminated dirt, "now what"? For several SREB projects we dug up floors where everything was draining, but could pull that material out and batch it with new material to below MCLs for use on new apron or runway surfaces. If we can use it, we use it versus leaving it in a landfill or exporting offsite. If they hit something hot in Noatak...and the tank farm maybe being exciting... we'll do what we can to reuse that material if it can be batched or get waiver; but it's a tough fix when you can't get a barge to the commmunity...there is no barge service any more. One of the bigger project challenges is getting the equipment to Noatak, but we're looking at a winter route route from the Teck road and an ice road using withdrawals from ponds along the way; although ADF&G says the creeks likely have chum salmon and dolly varden so that may be a challenge as well. Discussions in the region often keep going back to caribou impacts and always about caribou from BLM and NPS when they are involved; but we've heard nothing from the community about any concerns with caribou, and we have a signed resolution of support for the project from the IRA.

FWS -Invasive species is a concern particularly for a community so isolated from the rest of the state. We don't want to allow vetch or white clover to sneak in on equipment, particularly dry seeds that could hitch a ride and start invading the landscape. This is a very straightforward project and we appreciate the team approach, and the more projects like this that involve us early on the better. Whomever is going to be sending a consultation letter or email to FWS should send it to Bob and note that Amal has met with you and gone over the project.

PK-We expect to follow up shortly and have a draft EA available by early December.

FWS - When is construction anticipated?

AB- Its not in the 2019 funding plan. We could start mobilization 2021 and need ROW and NAVAIDs and permits to complete the design, and then would go for the Corps permit.

PK- And you'll have another look at the project during Corps permit review, I'm sure.

FWS-During the process if you have questions don't hesitate to call and ask. Get in touch directly with me, and I know Melissa has my contact info.

PK-If you joined us at a community mtg it would be great, but we realize federal travel has been cut back.

MB- You can meet us in Kotz.

PK-It's helpful to have people from outside agencies come to the meetings to show the community we are doing what we can to meet with resource agencies to help the project.

FWS- I've been to Beaver, Birch Creek and Stevens Village; and see the importance safe airstrips.

MB- The community wanted to maintain safe access for subsistance for hunting and fishing and to cross the road to one area to another, so we discussed road side slopes for snow machines.They didn't feel too concerned about birds and mammals. The ponds north of the community have overflowed and covered the roads with ice, so they told us to stay out of those wetlands. That added about .5 miles to the road for safety.

PK- We'll put those pictures of the bridge and ice in the Corps permit to show those conditions.

MB- The end of the new runway is in the wetlands but based on wind data that's the best we can do.

FWS-How long in the runway?

MB-4000 ft long. But in the EA were looking to cover the ultimate runway design at a 5000 ft. length.

FWS- Are there any mitigation measures in place for wetland or wildlife habitats? Any thoughts on bridge versus culverts.

PK-we had looked at several different locations for the actual airport, but based on community input and access road length, we settled on the present location. One question was where do you wait for the plane? With this location tied in to the community where it is, you can wait at the school for the plane. As for other issues, the community only gets fuel by air, so there's a need to mitigate the absence of a fueling system at the new airport. We need to replace it. If we leave staging pads in place, the community can place tanks there and get a truck to haul fuel from there.

MB- As for phasing work, a pioneer road was originally discussed from the mouth of Kutcharok Cr., and when we put the road in we can go straight to a staging area near the bridge, put a bridge in first, and commit to building the road both to the community and runway. Engineering wise the road to the material site would be temporary (closed later to the public, but still a gravel road), so we can haul in the summer as well; but another option is just do a winter haul. For mobilization, right now the thinking is winter haul only on a snow or ice road; winter haul in, winter haul out.

FWS- That is what we would recommend like the north slope and wanted to forewarn you.
MB-The area we need to look at is in winter, where do we stage all the material? The community has used a site previously and we can get some material there but one thing we need to do is minimize trucks going through the community. How does North Slope do it? How do they stock pile the material with the intent the river will replenish it?

AB- Wherever we stock pile we lose the bottom layer to settlement. Have to weigh options as its wet and then we won't be able to rehab the site back to native ground conditions.

MB-Even if we put a pioneer road in, we need access to cross the gravel bar from the river bank.

SL- We're working with fish and game to get the permits to get that done.

FWS- Is there a sea plane parking? More and more communities are going to deal with erosion. Barrow in putting in a 100 year storm berm along the shoreline.

PK- Shishmaref, Noatak, Nulato, Manley, Hughes have dealt or are dealing with flooding.

FWS- Has anyone done the calculation on the material volume needed to do this runway?

AB- This is our homework to get done.

FWS- Does the proposed area have enough? How will digging next to the river affect the flow of water?

MB- We're waiting on survey and mining plan for two locations; the community wants to know if we can mine on the east side of the Noatak and re-route the main channel of the river to slow erosion. SM: If we took two feet of material off the tops of the main site, it would be about 200,000 cy.

PK - We hope to have a draft EA by early December, have these meetings to reduce review times, and have agency and public buy in and a FONSI by early January 2019. Between now and then if you have questions you can ask us prior to the draft and we'll work with you on answers.

FWS- I will sit down with Bob and we'll make suggestions, and will call you with questions. I like this face-to-face personal touch as it seems to ensure there will be better communication.

MB- We can easily send you all the info that we have looked at as well...maps and graphics.

PK- If you need any maps lets us know.

FWS- So to whoever writes the EA, we like the Alaska Natural Resource Heritage program and have also used it lately. While IPAC is a tool used by FWS and project proponents, I'd advise fact checking with the Alaska Natural Heritage site for migratory bird information as IPAC is not always inclusive, and sometimes does not provide important endangered species information like critical habitat. IPAC is a better lower 48 program and Alaska is often forgotten so it might not be completely correct. IPAC is incomplete in many cases where the Heritage data is often better.

PK-we cannot cross from KOTZ to Noatak because of overflow ice.

FWS- Layers of polar bear critical habitat are available on the Fish and Wildlife website, and the FWS migratory bird site may have layers for Eiders and I can share if needed. Coordinate that through Missy.

Noatak Airport Relocation | EA Resource Agency Teaming

National Park Service Meeting Notes

October 12, 2018

Purpose and Need

PK- Provided the history of the project. This has been going for 10 years and the river has been losing the bank at a rapid rate. The community spawns in the area.

There is black fish in the off channels and if there is bridge and then we don't need to know.

MB- The bridge would be double span and 170 ft. they can keep the peer out of the creek.

-This is more of an icing issue and Red dog is trying to build a road. The culvert would be easier to maintain and if you have 18 ft wide channel and not sure how that would work and then need more culverts on top of that.

Materials

ADF&G- Material usage? we don't know

The material would be used for airport access roads. The highest priority is building an ice road to get to the bridge. Might be building a pioneer road to safely haul the road and then option one was pull it all in and work till the access road. They want to pioneer road -the min to get equipment in and out to stage material to work through the summer. This would keep vehicles out of town and they would push to come in from the other side.

AB- allot of trips hauling material and will cause dust and the community does allot of walking

The utilities are also underground

PK- there is a difference engineering temp road.

The environments temp road:

MB- for the EA we are noting there is environmentally, temporary used ice road. we have involved the EA, so we can use it.

The water was shallow to wade across and then it drops this time of the year. Display photos of the site and erosion. There is Geotech fabric appearing on the cracks of the bank.

Haul route

staging materials to the bridge site and would be a winter route

SL-this will be down to another material site and

MB- when working with Mark the east material site the community uses. We could use some material and head towards the school and not stage by the community or school to minimize traffic and material avail he could work the road there. Winter use only. only staying above ground water. Having a buffer and have a temp road to bridge site and get the bridge build first and get the bridge built we can go either direction and do what we need to. Build an ice road an come up along the mouth that causes less disturbance

Alternatives:

- Going through alternatives
- We need to do culverts or long bridge

Access road to tech road

Using the red rog port., Did red dog support? not officially but

JB- Red dog will support but we need a direct request.

SM- The community will want to follow the winter trail. There are some deviations in the winter road. There is native allotments and bodies of water to avoid.

PK-this is where the wires get crossed of what the community. winter haul in and winter haul out and best way to do that if we need water for ice road construction and with the congressional delegation that we don't know about. we want to keep separate. The community wants a permanent way to get to the Tech road. Don't make it so small that you can build anything. If they could get wide corridor, we can give guidance and for our efforts it's all about get stuff to tech and get an ice road vs. can you drive stuff from Kotz and up to Noatak. Equipment has fell though already and that options does not work

AB-in the 1980 a d9 was sunk and had to wait to break up the following year to get material up. There is no way to drive across the river,

PK- the changes to barging to the fish hatchery is nowhere to leave material on that option. You would have to build a staging area.

SL- right now in the EA there is an option. what are your comments on a Winter route, so we can include in the EA. The partial barge option and then overland the rest of the 25 miles. There are native allotments.

How do we cross water in the winter? Do you know what kind of fish in the area?

Does this cross Eva creek? there is dolly varden in the creek. The upper part in near the Red dog mine. Ekaluk creek. Pit 6 has community goes there for their staging stuff and the creek of east is worth consideration. The 18 miles up would cross the tech road.

SL- ice bridges or temp bridges?

PK- Is there winter flow?

JB-there is overflow but there all frozen.

Review of path of pit 6 and looking at obstruction.

SM- he has the center line and the rough idea of filaments. It does show where the culverts are. Showed significant drainage and cross drainage.

F&G will look at her maps and see what concerns she has. You might have to slot the bridge.

PK- it's a one-shot deal. One way in and pick it up on the way out.

F&G: If it because a permanent road we would need a bridge but that's not what we're talking about.

If we do Ice road it has to be clean and no rocks. clean snow and water. The ones close to the village there are salmon in the Noatak and she would check. Get on the ground and put in traps to see for fish. We could Co-op with Red Dog and we go three times a year.

F&G will go back and look at her maps and talk to Al and next summer look at on the ground sampling.

The timeframe will be permits in 2020 and draft EA done this year and FONZI done by this year.

AB-We need to figure out what time frame in 2020- we need time to answer that. If I guess it would be Feb or March in 2020. We get funding after we advertise.

PK-if we do the material site on the Noatak river. What would be the constraints on material site construction and winter route and trout on how it affects the community. The community will do what they want.

What if we go inland and what do we find like Kivalina road and then you have buffer and overland.

SL- My guess is that has been thought of and geo tech work has been done in 2006

AL- exploratory digging has been done. The drill logs came back junk. Silt, ice and

PK- we will talk to the park about the route and permits. There is a lot of recreational use and Drake's pit is already there.

Is there a hard constraint for winter versus summer with phasing and inflammation?

It would be nice to have an upland spot.

PK- There are no concerns from the community regarding caribou, caribou crossing or nothing. The community has been using subsistence activities in the airport area.

If the initiative passes this will be a different discussion.

Fish & Game will provide: (possible dolly varden, chum and white fish)

Comments of where the fish are, different routes in the EA, containments of the river

DOT will provide quality of material site and age. provide copy of map TOPO map with routes.

Kiyak & Kuchoruk river

Could the community take over the material site?

200 yards off the river and wondering if there was gravel underneath to mine. They were asking about north of town. accouple hundred yards off the river and Mark mention but nothing has been investigated.

Erosion is happening north of town and community doesn't want us to touch the river.

AB- we don't want to either.

MB- is it ice rich? do you have to de-water 10 feet and no one has done any drilling that she knows of.

PK- let's hope we can do what we want is there anything we can do to improve stuff. Is there an off-channel habitat to help improve? We know there's pike there now.

F&G- Do we have a way to determine low water elevation and how high the sand bars are. We would like shallow scrapes but depending on the gravel bar size.

The size of the sand bar is huge and scraping 25 acres without creating a whole.

F&G- show on a map where you would take and borrow material and manufacturing product and upper size and crushing- screen product

As far as buffers go, we would like fish and game comments because it not in the main channel and sometimes that make it fish habitat because it easier for them to travel.

AB-there was talk about material to build the existing runway they pulled from across town. They drove across the river and pulled material and

The runway will roughly the same size were going to bring up to standards and slightly bigger. We are putting in the ultimate design. if money is available, we could justify with size of fuel plane arrives

MB- They want to know why we couldn't if we were doing winter haul to put in a road to other side and a big trench and we couldn't swing the erosion away and we mind the gravel bar across the river.

Community asked: Can we just dredge and use that material. that is beyond the scope of the project.

F&G How many people in Noatak:

JB- about 500

PK- they are getting housing projects and getting new housing

MB- there is 2019 new 5 housing units and summer of 2019 and have an ice road, so they can haul stuff in and share a barge and overland route. 2019 is too soon.

PK- the take home message: There are 30 kids on the way in the community.

F&G- Timeline? EA done by this year. Anything we can include in alternatives. with the election times could change but we don't have permits in place. If we get permits in place before election, they can be grandfathered in.

Noatak Airport Relocation | EA Resource Agency Teaming

National Park Service Meeting Notes

October 30, 2018

Attendees: DOT&PF – Ryan Anderson, Paul Karczmarczyk, Chris Johnston, Al Beck, Nanette Pineault, Scott Maybrier; Stantec – Sara Lindberg; Remote Solutions – John Baker, JP De La Rosa

Discussion items: DOT&PF Developed Routes, Land Status Maps, Introductions

John Baker (JB), Remote Solutions: We're here, Remote Solutions, Stantec, coming together to support Noatak in a project they are working on as an airport. We're working on the Environmental Document to support the construction of an airport coming soon. Thank you all for being here.

Ryan Anderson (RA), DOT&PF: Thanks everybody. Just as an overview of where we're at: I was out in Noatak in 2002 or before that when they first started talking about the erosion happening. There was a lot of analysis done about the erosion impacting the airport. There're questions on timing. That runway we knew would end up in the river. The project is to relocate the airport so that Noatak can have safe and reliable transportation. What we really wanted to talk about today was the EA. Were in the stage where we have the draft purpose & need, proposed action and we're trying to do a good job to work on the alternatives. We wanted to talk about the alternatives that we have and how to get to Noatak when you're a contractor to build a project of this magnitude. Overland access is a big deal. When DOT looks at this, we like to provide contractors with options. We go through the environmental process and complete the document, then we permit and go out to bid so a contractor could say how could I do this the most cost-effective way. As the airport sponsor, typically DOT, we will go through this work and there will be things FAA will want to be involved with. Then we have the appropriate points.

National Park Service (NPS): FAA understands that we're going to build an access road because there isn't enough snow based on the studies that have been done.

Paul Karczmarczyk (PK), DOT&PF: That's news to all of us.

JB: One thing we could talk about is the criteria and what DOT would use to build an ice road. I think it's similar to the parks, if any.

RA: There's a lot of snow road stuff going on in the North Slope right now. DOT, we're in the midst of that. DNR for us, has the guidance on snow roads and the guidance is 6 inches of snow with frozen ground 12 inches. That's something we'd be looking for from the park service. There's lots of different ways to work through that.

Preferred Route

NPS: ADOT is still trying to match up what the community wants. Maybe ADOT or FAA is not going to build a temporary access road with gravel. What sort of push ... do we need a land exchange? Now there

are still options out there. This meeting is still a confirmation. Before this meeting we were under the impression that they had chosen route 3A and that's what was happening.

JB: Since that meeting, we have had more than one meeting with the community.

NPS: Yeah route 3A every time.

JB: They chose the state trail route

NPS: Route 3A

JB: With the community choosing that route there are some issues that would create steep spots for an ice road. The community and our engineer that has these documents on the screen did work. To ensure that the route is crossable, the community and Scott came up with a route to minimize those slopes.

NPS: 1A Right? 1A, 2 & 2A don't go through the monument.

Sara Lindberg (SL), Stantec: The 3A Route...

NPS: It's the same route.

JB: That's what we're referring to. These will have the numbers.

SL: The numbers have changed, we'll tie it back as we go. It's good to know that the state trail route from July was 3A.

NPS: 1A.

JB: Since that time, DOT & the community have worked with eliminating some routes for various reasons.

NPS: This one is the Pit 6, right? 1A?

JB: Scott?

<u>Public Meeting</u>

PK: One of the first trips I took for DOT was 2009 going to Noatak to scope an area for the proposed runway. The community has been interested in that route 1A what's been evident and it's a NEPA wire crossing in some ways. There are so many things going on in Noatak that everyone has a different perspective of what's what. I had no idea what you were referring to about permanent road for the airport. There's an initiative by the community to have access across the monument for transportation. There are efforts from DOT, doing a planning study, looking at community needs in terms of transportation and what could be proposed to resolve those concerns. The airport project has been a separate NEPA concern completely and has not gotten a proposed permanent road associated with it. It stays there for a couple years and then a winter access out back. Stuff has fallen through and stuff will continue to fall through. The community's concern ... There is an alternative proposed where we barge

part way up. Overland west of the Noatak River to the community that way. You could do an ice road there. there's been thoughts about barging to Noatak. Used to be able to, now you can't. There's risk involved in hoping that the water levels are there. How do you make it most reliable to get it to the region and can you get it from Red Dog Road to Noatak? It would be critical for us to have 2. The community's expectations and efficiency... Right now, what we're looking at are alternatives. A snow road across the monument or what we refined 1A to be is the yellow one. We have extensive survey information for that. It smooths out the landscape a lot. We went to the community a couple weeks ago and there were discussions about if it were adequate.

NPS: I was going to ask about the study. According to them Noatak & Road are one project. This is directly from the borough website. The second part of the project includes building a new runway. The borough is telling us that this is what we're going to discuss with congressional to support the project.

RA: I think in our world we're funding driven. It's not a real project until we have funding...

PK: When we were there, we kind of explained it doesn't have to be combined. It was concerned about how long this would take. There was mostly a takeaway that we need the airport, let's get on with it, we're in on the ice road. Then I talked with you and there was concern about not enough ice or snow. We're here to brainstorm what we need to brainstorm in terms of smoothing out alternatives about what will work, won't work, may work. Criteria from the Park Service, about alternatives and how we look at our alternatives in terms of your priorities.

<u>Preferred Routes</u>

NPS: I need confirmation. If there are 6 different routes or 2?

JB: There's 2.

NPS: There's 2 to choose from, we need to know what they are.

Nanette Pineault (NP), DOT&PF: It says 1 and 2.

NPS: Both go through the monument. So, you've dismissed all routes that don't go through the monument? I understand a lot have been looked at over the years, coming from the old AK DOT report was the north route that doesn't go through the monument.

JB: The community base on that was unpassable.

SL: They drove it with snow machines.

NPS: Is this effort ... they were looking at a different project when they did that. I guess I'd encourage... when you apply for ROW through NPS land you must show that it's not feasible to remain outside. I don't think that the information you gathered that the valley route is not feasible especially if the ice route is on the table. We don't think that the snow is dependable if you have a construction year. I encourage you to not limit the range of alternatives even though we have this input from the village of Noatak.

Maija Lukin (ML), NPS: I think this is what they are set on regardless of whether it's feasible. The park service also wants to see it. Maybe it's okay for a snow machine and not an ice road.

NPS: There's a lot of variables with snow machines too. We were looking at the Cat Forwarder. It was a vehicle we thought couldn't access Noatak. AKDOT or the contractor will be using more appropriate vehicles.

NPS: We don't have authority to issue ROW through the monument. It would have to be a permanent ROW or act of congress.

RA: Permanent...

ML: There is a possibility.

RA: Is there a way, if that was an option, as question if we submit an SF299. Could we get that all.

PK: There's an SF299 or a ... for the 2 permits.

NPS: On the fuel haul we didn't do the EA. An MTZ. Yeah. That was unique, we'd have to look at the proposal. It's not a great fit to let companies respond with a plan. We want to analyze what happens on the ground. Why is it not feasible to not cross public land? We take that very seriously.

SL: That's how it's handled in the EA.

PK: I remember seeing an end. I wasn't sure that it didn't clip part of the monument

NPS: It didn't.

SL: There's a fork

NP: We have 1, 1a, 2, 2a, 3

NPS: The teal route was the most looked at.

<u>Snow Data</u>

NPS: If snow level is going to be an issue for guaranteeing access. That might be the most feasible route. Some minimal infrastructure is more possible outside of the monument.

SL: Does your snow data go up that far?

JB: There is snow data on the screen.

RA: There hasn't been a lot of access through the park.

NPS: We talked about snow cover and that stuff when we went through the fuel process.

NPS: We rely on the Northern District. We don't have internal... for that. I want to say someone in the Northern District said we would not issue a permit based on the snow depth and AKDOT's own requirements.

RA: We don't have requirements.

NPS: The permitting? Okay. I'm sure we reached out to you guys.

RA: If we're doing an analysis and the feasibility what kind of criteria should we be looking at? We'll have our engineering criteria and grades. Is there anything else we should be thinking about?

NPS: If we were doing an EA, we'd be looking at soils, impacting. Wetlands, any potential for impacting wildlife migration but I think we looked at it somewhat and didn't think the last project would have any impact on that but it's largely to do with vegetation and soil along the route. I think the routes chosen for the cat forwarder had no issues. We didn't find any areas of concerns. My suggestion as someone from there and John can maybe agree with me, the routes that you're choosing are done by engineers not in Kotzebue.

ML: One of the most important things is to go there on a snow machine and drive the route yourself. I think Joe's report is the best first-hand account report. If you're going up there and driving the route in the middle of winter, you're thinking access to water, grade for the equipment and how heavy is the equipment. That's one thing we've heard from Noatak.

JB: They have had a lot of input on these routes. The preferred route has been 1.

ML: We will still support them, we'll still move forward with that as far as the airport project, it's going to be different.

PK: I'm just texting Scott. This is all the routes overlaid with snow. Red is more.

Scott Maybrier (SM), DOT&PF: Red is snow.

JB: Do you have January February March April

SM: What you're looking at is Snow data, I put together a series of layouts from April, May June. You can get an idea of the snow out there. You can see in April everything is there and then it starts to dry up. You can see that the white route is the closest to the winter trail. It's going through more snow basically. The other route is going through a bit less and then it switched over to a

NL: When you build a snow road it'll be January not May 18.

SM: I was looking at the route for a permanent road not a snow road. I'd want to go back and look at it for snow options.

JB: Do you have it going back as far as January?

SM: Yeah just a moment.

NPS: If you're writing an EA that crosses park service lands as the only alternative, we'd need to be a cooperating agency. We'd be a cooperating agency by law we'd need a permit issue.

PK: This would be cooperating with FAA.

JB: I think that in this case, the cooperating agency would be with the Noatak IRA.

NPS: Under 106 you're likely right, but when 1 federal agency is the lead agency for a NEPA document and there is another agency that by law would have to issue and permit, that agency would have to be a cooperating agency.

JB: Do we need to apply?

NPS: Yes, so FAA would say we're proposing a route through monument lands. Does that sound...

SL: If it dismissed routes through the monument yes.

NPS: FAA decided to pull out any monument routes, it was a more straightforward approach that the current proposed route. Typically, we would participate in that FONSI and EA development. Then sign our own FONSI that would be likely identical to the FAA FONSI

ML: We aren't a cooperation agency. The question was asked, are we a cooperating agency and the answer was NO because the route was outside of the monument. Bert said RIOS can take care of this and we said done.

JB: If there is a request to be a cooperating agency, do you need a request for whatever they are working.

NPS: It's the lead agency, it would be FAA

ML: Just for the airport access project. Not the project.

JB: Fair enough.

NPS: It would be nice if the projects could be combined.

ML: That's what ....

PK: There's no way to wait that long for the airport. The circumstances right now, with the erosion, the likelihood of them losing that is very high.

<u>Funding</u>

ML: It doesn't take that long for a land exchange if we have the information for the land exchange.

NPS: What’s the timing on the funding.

PK: '21. How does the funding work with the airports and the use of it? What's the funding circumstances for the airport and the timing.

Chris Johnston (CJ), DOT&PF: We were making a push for this as one of the ... projects which would have been needed to have been ready next year. That may or may not still be feasible. As far as the AIP program, I don't remember what year it's going in there, but it scores very high. We need to make sure it's reasonably priced.

Al Beck (AB), DOT&PF: Instead of giving erroneous information, I was pulling up the funding plan. It's taking me a moment to get Noatak up and I'll speak up. They are showing Noatak Airport as a contingency in 2020. What that means is within our funding plan we are accounting for federal dollars coming into Alaska. That project will be ready to be delivered for construction and go to grant during the summer of 2020. If that didn't happen, then we would have to determine when a realistic time for the project to go forward. If that's the following year, 2021, you'd take a project than in '21 of similar size and those projects get pushed out. It becomes a domino effect. That happens year to year but it's more difficult on larger projects. This is going to be many millions of dollars and it's hard to rebalance the shuffling of projects. Based on other needs occurring that outweigh, it could be shoved out further in the program until it could handle that size of project.

NPS: If we combined like we all think is good business and did a land exchange and moved ahead. If we were invited to be a cooperating agency and the proposed action from the FAA was coming through the monument, we'd want the 299 ASAP with as much data as possible. To be able to conduct the analysis. Is it a feasible project, is there snow, do you have access to what you need? What would be expected impact from the vehicles and weight be on the soil, barriers from compacted soil having long term wetlands. It is at least 1 field season.

NPS: One thing to keep in mind is the alternative. If there is one outside of the monument, we wouldn't be able to issue.

NPS: I strongly encourage the team look into those routes. It's not liked by the community, but you'd have more flexibility in routing.

PK: Is cost a consideration?

NPS: No, you could look at if it's 10x's as much.

PK: If it means you'll have an airport relocation or not.

NPS: I would need to justify that.

JB: As a cooperating agency the schedule were on for the E.D. what is that schedule.

SL: Trying to get the document completed and FONSI by the end of the year if we can.

NPS: 2018? You don't have your cooperating agency.

ML: You can't issue a FONSI without the park service saying.

SL: You guys are not a cooperating agency at this time.

ML: Without going through monument?

SL: We're still evaluating that.

JB: We need to cooperate with each other as an agency.

NPS: I agree with John. Even if it's not the proposed alternative. We need to be a cooperating agency.

CJ: We've already conducted .. for the EA. Does bringing in a cooperating agency hinder that?

NPS: When you conducted environmental scoping there wasn't a proposed route through the monument right?

CJ: One was 10.0 and the more recent one we did include, we didn't have a specific route identified, just considered a route to Red Dog.

SL: There may have been a sentence that said "which may include through the monument"

NPS: I don't think that would set us back.

JB: Are there things the park service would need to achieve with these? Hauling or anything?

ML: This wouldn't be a snow access road for the village, it would only be for DOT one time.

JB: That is the way it's being set up but if the community had a project could they bring in materials?

ML: Not if the permit is for DOT to bring in equipment. One time. Whatever or however it's written. Unless it's... The holdup is with NANA right now.

PK: We have taken over the role of Federal Highways in Alaska... There's no way you'll combine an aviation and highway project.

NPS: Federal Highway grant is one of the only ways I can think of to build a road inside of a park.

ML: We wouldn't be able to choose. Similar to Ambler Road.

NPS: Yeah, for the permanent access it's something we should all be looking at, but it doesn't help you for the airport project.

NPS: When the land exchange became imminent maybe there is a special use for preliminary work to start getting the ice road.

JB: A land exchange for a snow road?

NPS: A corridor through the monument.

JB: That's the quickest route?

NPS: For any route.

ML: Noatak understands there will be access and they'll want to bring things in from Red Dog. They'll want to bring things in and it's a one-time permit.

NPS: They are 2 different things.

PK: Would it be helpful from the services perspective, the fundamental characteristics of the monument that your concerns are. There's going to be criteria like for the snow road engineering that we should be most attentive to. you read the websites and the legislations is broad. What I've heard come up is fuel. Is it water quality? Significant wetlands? Those are handy to have. W

ML: If you, I know it's late for enabling legislation, the statement of concerns state ... of resources. We must think about the migration, the ... everything. It's not just the western arctic.... the largest resource going through Cape Krusenstern is white fish.

JB: The first thing is the cooperating agency, then we can work together on the Environmental Document.

NPS: I think the clarity for the permit for the 299 is important. One time in and one time out does not include the community. It doesn't include transportation to the village. I'm concerned about the other route, it's a real "if you build it, they will come" one route is an approved route for travel but if you build a snow route somewhere else, are people allowed to use that?

<u>Land Ownership</u>

JB: It sounds like the NPS would be more of a team here on this.

NPS: BLM will play a role in this too. There's BLM land in there.

NPS: They would also be a cooperating agency for the same reasons we are.

ML: They would need to be because the whole route goes over that land.

NPS: you might have avoided it once you left the monument.

JB: The state trail doesn't have BLM land.

ML: NANA owns the village land around Noatak.

SL: They wouldn't be a formal cooperating agency. So, any agency.

NP: NANA is a ... corporation. NANA would not be.

NPS: As a stakeholder... Good catch.

PK: It fits a little different than most places. T

NPS: It's late in the process to be inviting cooperating agencies.

ML: I'm just saying that land exchange, we'll just move forward with that. Our action item for a land exchange, maybe from the DOT. The information we need is how wide the easement. They told us at our meeting that we only needed to exchange 50 feet. Which equals 50 acres. Which is ridiculous. Someone needs to tell us how wide the road needs to be and the easement.

JB: Who's been working on a land swap

ML: In order for us to continue working on it we need to know from DOT what the minimum width needed. We'll still work on it, but we need to work on a land exchange.

JB: We were requested from the community not to get involved in those things.

SM: We'd want to shoot for a 300-foot easement.

ML: We were going to do 300 feet to half a mile.

PK: That 300 feet moves around a lot on the landscape. Within a much more generous. Half a mile, I'm not making comments for anyone. Half a mile would be appropriate. When you start dealing with engineering and cultural resource. To have that flexibility is critical.

JB: Scott, do you have the total acreage on routes 1 and 2 if it were a 300 foot or half a mile.

<u>Routes/Hauling</u>

NPS: To know additional fieldwork or information you'll be gathering.

JB: Scott do you have time to walk us through the flyover route?

ML: How about ADOT gives a suggestion on Route 1 and 2 for what the acreage in the monument would be. I'm only interested in the monument.

SM: What you're seeing is the 2 options we looked at. The orange and yellow. The blue is the winter trail route from the community. This route was modified based on a few considerations, avoiding native allotment. Mark Moore told me where to start it and start west of the cemetery. Then try to mirror the winter trail route. That's why we start near the school and come north. From here, we avoided several water bodies in the native allotment there. Then from here, trying to stay under...

NPS: Is fuel hauling part of this one in and one out?

JB: Yes, it would be substantial because of the equipment use.

NPS: How many passes is estimated?

PK: We don't have a total estimate now but 2 major trains going in.

NPS: On vehicles?

CJ: My thought is that it's going to be a week, depending on how many vehicles they have. If they have 5 trucks vs. 20 trucks it'll vary. It just depends on the contractor and how they package their stuff. They'll use the road for a series of days. They're going to do it all at once instead of spreading it through the winter. They won't want to maintain the ice road through the winter.

NPS: Does the construction company wait for the best conditions and make a run for it or do they pick a window and go for it?

JB: We'd be guessing. The contract can be written a certain way.

CJ: It would depend on the contractor schedule.

NPS: What did the community think of the route that isn't their traditional route.

JB: Well the route they've been supportive of all along and never really varying from the state trail, in talking about some of the steepness of some of the hills and utilize an alternative route, you can see how we showed it to the community.

SM: The top is my version of the community trail route.

SM: You can see it starts flat and goes through a gradual rise. There's not another material site between the 2. I'm wondering if it ended at Pit 7. Maybe it's Pit 8, I can't really say. If someone had a KMZ file I could bring that into GIS.

ML: We just wanted to make sure you were following the 106 process. Make sure we get the information you have and building plans.

PK: I was hoping there would be more information that SHIPPO might not have access to. They have heritage sites that aren't AHRS subsites. They are traditional places & gathering areas. I wasn't sure... whether it's just don't go there we can't tell you why or something to avoid.

ML: We wouldn't have that information. That's something that through the 106 process you could mine that out.

PK: We'd be collaborating with the community as well.

JB: Do you happen to have the videos?

SM: Yeah, I don't have 3D files for these 2 routes, they are older concepts, but I think I can show them.

JB: It's okay if you don't have them. We've had conversations with Teck about the projects. But no meetings to specifically discuss permitting.

NPS: BLM lands are crossed prior to entering the monument.

SL: Routes 1 & 2.

NPS: Is looking at route 3 the same level as route 1 and 2 for feasibility?

JB: I know there's a force you'd have to go through.

NPS: Outside of the monument it's a different level of what you can do inside and outside the monument. I think that's one of the major benefits of staying out. You can construct temporary ramps to deal with.

SL: It's possible some of it has been done. We would need to make sure it matches the same effort Scott did.

NPS: It would be helpful to deem 299 necessary.

SM: Here's the other routes, the green is the monument.

SL: Who's the best counterpart at BLM?

NPS: Thomas Parks?

NP: But you have to go through Anchorage or Fairbanks depending on who has Noatak.

NPS: That might be a better place to start. Maija off the top of your head can you think of pros or cons about not using the traditional route within the monument? Temporary access 2 year in an area that hasn't had access before.

ML: If you build it, they will come. That's the con.

NPS: Potential damage. That's a pretty major concern. On the current winter trail, you can see where it is in the summer. Similar level of scarring would happen in a new spot that's the concern. There's a level of skepticism we can protect through snow depth.

PK: That's what we were fishing for earlier.

NPS: We don't have a ton of experience, we don't permit things.

SL: We would look in the DNR. They have potential impacts.

NPS: We'd be interested in DNR, stream banks and erosion when the drop off is. When the snow melts what's left there? We worry about our visual resources.

PK: What are your critical impact concerns?

NPS: This is an interesting project because it goes away. Likely, we're not as worried about the one year of having a winter road there or having trains go back and forth. You know, it's really those permanent impacts that we're mostly worried about. The damming is a concern if there is going to be water building up.

PK: We'd need a corps permit for the airport project.

JB: Well we have a schedule we're trying to work on this environmental document. As we're going through, we want to be working with you. We want to be involved with the park. Moving forward we'll agree that we're going to keep everyone very informed and requesting information back and forth and supporting the community.

NPS: I'm speaking only from the compliance and not ROW portion. This shouldn't be a huge list. Contractor's on the job. It doesn't worry me too much. I do have a main concern that we continue to look at the route outside the monument and not only include the ones inside for consideration. If you can't easily dismiss it would need to be an alternative. I think that as a cooperating agency we can look at and provide comment on areas of concern as up front as we can. We don't have a ton of experience in this field. We spent a lot of time

NP: Have you issued temporary easements before?

NPS: We use a lot of the data.... to Noatak.

ML: We did say we would like to be ...

SL: I have that email. As long as we're not going through the monument, we don't need to be a cooperating agency.

NPS: Typically, that would be a short letter from the FAA to Bert Frost our regional director who is the decision maker on that.

PK: I found a form 10-114. It seemed to be a special purpose access permit for parks service stuff. I found across the country, this monument, this park, these are from places, but nothing relative to Alaska. No GPO.

NPS: We don't do it a lot here because everything is so remote there isn't a whole lot of access. Under 1110A special access between airplane, snow machine.

PK: The questions were the same across the board. I Don't know if that's an avenue to pursue. If there is something available that mimics and is already manufactured for the parks service.

NPS: We need more information. What we should do is talk to NANA more.

JB: Can we do that as a group? Once we get a cooperating agency put together. I would love to be a part of that to make sure

SL: We're going to need to describe the alternative as a winter road.

NPS: If I have materials to send out for instance the information on the fundamental resources of the park we can send to Paul & Sara. We'll take a look at the work we did on the Noatak Haul Road with Maija. I think that will be a useful starting point.

NPS: As far as snow depth and frozen earth...

JB: The same as that permit or DNR?

NPS: I think we got it from them.

ML: Is there anything else you need from us?

PK: I'm glad you were able to make this.

Email from Chris: Here's what she was talking about with the Borough webpage showing the road and airport as a single project. See highlighted portion below. This looks like this is describing the old project where we did the study to look at Noatak as an alternate runway to Red Dog which is no longer the project. We're doing a 4000' runway and since our study, Red Dog has been paved and ILS installed which increases their landing chances.

https://www.nwabor.org/about/projects

Noatak Airport and Road

The first part of this project consists of building a 28-mile gravel road that connects the village of Noatak to the Delong Mountain Road, the adjacent port facilities and the Red Dog Mine. The project is known as the Noatak DMTS road project.

The road will serve many useful functions, providing:

- Access to a secondary emergency airport for the mine.
- Direct transit access for the local workforce to the mine.
- Additional subsistence access to wilderness.
- Access to bulk freight and fuel storage at the mine site.

This project is a priority of both the borough and the community of Noatak. The road will provide much needed economic relief to the area. The cost of living in Noatak is among the highest in the State because low water levels in the Noatak River prevent cheaper barge delivery of goods. Gasoline and heating oil prices range from $10.00 to $15.00 per gallon. The proposed road allows goods to be trucked to Noatak from the DMTS port site with huge cost savings. This road is also part of the Governor's Road to Resources program and is necessary to better support the operations of the Red Dog Mine. The estimated cost of the road project is $50 million.

The second part of the project includes building a new runway. Due to erosion, the current Noatak airport must be relocated. Additionally, jet service to the Red Dog Mine airport is canceled about 25% of the time due to weather conditions. To support mining in the area, the new Noatak airport should be a 7,000-foot jet-capable runway so that aircraft that supports mining could use this facility as an alternative when necessary. The project has $13 million in funding but will need additionally money to complete it.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

March 29, 2019

Keith Gordon
Federal Aviation Administration
Alaskan Region Airports Division
222 W. 7th Ave, Box #14
Anchorage, Alaska 99513-7587

Re: Noatak Airport Relocation Project, Letter of Concurrence, AKRO-2019-00118

Dear Mr. Gordon:

This letter responds to your request for concurrence from the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) for the relocation of the Noatak Airport. NMFS received an initial request for informal consultation on February 22, 2019. After reviewing the request, NMFS suggested on March 7, 2019 that with some additional information from the Federal Aviation Administration (FAA) the project could be handled via our expedited informal consultation process. The FAA submitted a revised request for expedited informal consultation on March 12, 2019. Your request qualified for our expedited review and concurrence because it met our screening criteria and contained all required information on your proposed action, mitigation measures, and its potential effects to listed species and designated critical habitat. Expedited consultation for this proposed action commenced on March 12, 2019.

We reviewed your consultation request document and related materials. Based on our knowledge, expertise, and the materials you provided, we concur with your conclusions that the proposed action is not likely to adversely affect threatened Beringia distinct population segment (DPS) bearded seals (*Erignathus barbatus*), threatened Arctic ringed seals (*Phoca hispida*), threatened western DPS Steller sea lions (*Eumetopias jubatus*), endangered North Pacific right whales (*Eubalaena japonica*), threatened Mexico DPS humpback whales (*Megaptera novaeangliae*), endangered western North Pacific DPS humpback whales, endangered fin whales (*Balaenoptera physalus*), endangered sperm whales (*Physeter macrocephalus*), endangered bowhead whales (*Balaena mysticetus*), endangered western North Pacific DPS gray whales (*Eschrichtius robustus*) or designated Steller sea lion or North Pacific right whale critical habitat. A complete administrative record of this consultation is on file at the Anchorage NMFS office.

Reinitiation of consultation is required where discretionary federal involvement or control over the action has been retained or is authorized by law and if (1) take of listed species occurs, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered, (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter, or (4) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16).

Please direct any questions regarding this letter to Bonnie Easley-Appleyard, at bonnie.easley-appleyard@noaa.gov or 907-271-5172.

Sincerely,

Jonathan M. Kurland
Assistant Regional Administrator
for Protected Resources

cc: Melissa Jensen, DOT&PF, melissa.jensen@alaska.gov
Brett Nelson, DOT&PF, brett.nelson@alaska.gov
Chris Johnston, DOT&PF, chris.johnston@alaska.gov

Hillman, Kacy

To: Jacobs, Laura L (DEC)
Subject: DMTS and Noatak Airport Relocation EA

From: Jacobs, Laura L (DEC) <laura.jacobs@alaska.gov>
Sent: Monday, October 4, 2021 2:39 PM
To: Hillman, Kacy <kacy.hillman@stantec.com>
Cc: Wiegers, Janice K (DEC) <janice.wiegers@alaska.gov>; Jacobs, Laura L (DEC) <laura.jacobs@alaska.gov>
Subject: RE: DMTS and Noatak Airport Relocation EA

Kacy,
The ADEC – Contaminated Sites Program has reviewed the available information for this activity. The Delong Mountain Transportation System (DMTS) road is a contaminated site (Red Dog Mine) due to releases of zinc concentrate along the corridor during truck transport to the port. Teck Alaska Inc. works with the DEC to clean up the zinc concentrate spills when they occur. Lead, zinc, and cadmium are present in the road at elevated levels but are believed to be below cleanup levels developed to protect industrial workers. Contamination is also present in the soil and dust of the road corridor and is being evaluated to determine the risk to ecological receptors.

Teck Alaska Inc. maintains best management practices along the roadway to reduce dust and spread of roadbed soil. Please coordinate with Teck Alaska regarding any activities to occur on the DMTS road, and notify DEC if actions are needed to ensure protection of people, human health and the environment. DEC approval is necessary before moving any contaminated soil.

If you need more information about the site, some records are available at https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/SiteReport/1423 . Please contact me if you would like additional documents from the file. Laura

Laura Jacobs
Environmental Program Specialist
Contaminated Sites Program
(907)451-2911
Laura.Jacobs@alaska.gov

Native Village of Noatak
FISCAL OFFICER
P.O Box 89
Noatak, Alaska 99761
Phone: (907)485-2173
Fax: (907)485-2137

Native Village of Noatak
P.O. Box 89, Noatak, AK 99761
Phone: (907) 485-2173 Fax: (907) 485-2137

RESOLUTION NO: _____20-23_____

A RESOLUTION FOR THE NATIVE VILLAGE OF NOATAK TO APPROVE FEATURES INCLUDED IN THE PROPOSED ACTION OF THE NOATAK AIRPORT RELOCATION PROJECT DRAFT ENVIRONMENTAL ASSESSMENT.

WHEREAS the Noatak Village Council is the only governing body of the Native Village of Noatak; and,

WHEREAS the Noatak Village Council wishes to improve the quality of life for the residents of the Native Village of Noatak; and,

WHEREAS, the existing Noatak airport is threatened by Noatak River erosion, which will necessitate permanent runway closure and has also caused insufficient land to be available to address other existing airport deficiencies; and,

WHEREAS airport relocation will ensure continued safe and reliable air transportation for Noatak; and

WHEREAS the State of Alaska, Department of Transportation and Public Facilities (hereinafter STATE) is completing a Draft Environmental Assessment for the Noatak Airport Relocation Project (State Project Number: Z614780000); and,

WHEREAS, elements of this project are listed in the Native Village of Noatak's Long Range Transportation Plan adopted in March 2011, and include both the Noatak Airport Relocation Project (listed as Noatak Airstrip route #2000) and the Airport Access Road (listed as Proposed Airport Road as Route #3220); and,

near Noatak that would best allow an airport relocation to provide continued safe and reliable air transportation; and,

WHEREAS the Draft Environmental Assessment Proposed Action is to relocate the airport and consists of an Airport, Access Road, Material Sources, Mobilization, Utilities, Right-of-Way, and Connected Action as detailed in the Draft Environmental Assessment; and,

WHEREAS, the STATE has provided to the IRA Council a Preferred Alternative consisting of **Draft Alternative Three, that includes the following elements a-d which would**:

a) Relocate the airport 2 miles west of Noatak and require an approximate 2-mile access road and a bridge across Kuchoruk Creek.

b) Extend existing community above-ground utility lines to the relocated airport.

c) Source project fine- and coarse-grained geotechnical materials from two Noatak River gravel bars: a primary one located south of Noatak on a gravel bar that would require development of an approximately 2-mile-long access route, and another one located just east of Noatak on a gravel bar that has an existing access route, has been used by the community in the past, and could provide supplemental project construction materials.

d) Mobilize contractor equipment and materials to Noatak over frozen ground via a 67.6-mile route that would use the Delong Mountain Transportation System (DMTS) road right-of-way (ROW) through Cape Krusenstern National Monument (CKNM) lands, and traverse overland for 28.2 miles crossing NANA, private, and state lands.

and,

WHEREAS, the STATE considers that the Preferred Alternative, Draft Alternative Three, would be feasible, not subject to Noatak River erosion, a sufficient distance from the landfill to meet FAA setback criteria, preferred by the community as it allows for the shortest access road to the new airport; and,

WHEREAS the STATE also considers that the Preferred Alternative, Draft Alternative Three, would mobilize equipment to Noatak on an established, active transportation easement and facility across CKNM lands with the lowest grades of all route alternatives, minimize impacts to forested areas, and require the shortest estimated timeframe to receive temporary ROW use authorizations when compared with other considered routes detailed in the Draft Environmental Assessment; and,

WHEREAS the Proposed Action Preferred Alternative in the Draft Environmental Assessment relocates the airport by creating a safe, reliable, and cost-effective facility that provides the community with adequate access, supports the community's long-term development goals and is consistent with current FAA safety regulations.

NOW THEREFORE BE IT RESOLVED:

1) That the Noatak Village Council has held a meeting in accordance with its bylaws for the purposes of carrying out its responsibilities relative to the Noatak Airport Relocation Project; and,

1) That the Noatak Village Council has held a meeting in accordance with its bylaws for the purposes of carrying out its responsibilities relative to the Noatak Airport Relocation Project; and,

2) That the Noatak Village Council approves of the features included in the Proposed Action elements of the above Draft Alternative Three, including the Airport Relocation, Material Sourcing and Overland Mobilization Haul Route to Noatak.

CERTIFICATION:

We, the undersigned of the Native Village of Noatak, do hereby certify that the Noatak Village Council is composed of seven (7) members, of whom ____ are present at the meeting held this 8th day of February 2022, and that the resolution was passed by the affirmative vote of ____ members present.

Attest: _____
President

_____
IRA Administrator

The Arctic Sounder

Agency to update Noatak residents on airport relocation

January 20th 2:38 pm | **Alena Naiden** print email

Noatak residents can learn about the progress of the airport relocation and share their thoughts on it next week.

The Alaska Department of Transportation and Public Facilities will hold an open house on Jan. 25 in Noatak to share the history, the current status and the next steps for the Noatak Airport Relocation project. The project includes the construction of a new runway, taxiway, snow removal equipment building and a new road so that people can get to and from the new airport when it opens.

"We would like to get input from the community on the current design and any questions about the project," spokesperson for the department John Perreault said.

Information presented at the open house should help community members to review the draft environmental analysis expected to come out soon, Perreault said.

The department also wants to find community representatives who are who can help coordinate the project.

The Noatak Airport Relocation project started in 2006 in response to river erosion threatening the existing airport.

"The river has continued to erode the bank toward the runway," Perreault said. "Based on imagery data from June 2022, the river was approximately 260 feet away from the edge of the runway embankment."

According to a December 2022 DOT&PF hydrologist's report, at the current rate of erosion, the existing runway would be impacted in 10 to 20 years, he said.

"Significant flood events may accelerate that timeframe, and it is important to complete the new airport before the current airport operations are impacted by erosion," he added.

The estimated time of completion of the new airport is set as 2027.

Noatak Airport, located on the shore of the Noatak River, is threatened by river erosion. - *Photo by Jeff Luther*

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Agency to update Noatak residents on airport relocation

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FEMA aid applications after destructive storm came with bizarre mistranslations in Yup'ik and Inupiaq

Facebook Activity

"I just hope that the channel changes from in front of town back to the channel that's away from town," Noatak resident Jeff Luther said, "so if any delays happen on the new airport, we will have that much less erosion at breakup and high water seasons."

Besides erosion, the current airport is located too close to the village, which can cause dust, and too close to the landfill, which creates a wildfire hazard, Perreault said.

Plus, the lighting at the current airport is too old and needs to be replaced, Perreault said.

Based on Federal Aviation Administration standards, the old runway is too small for aircraft that regularly use the Noatak Airport. The new runway will be 4,000 by 75 feet in size.

Airport relocations require significantly more preliminary studies than typical projects, and this is why the department is still in the planning stages of its relocation.

Identifying materials sources in a community off the road and barge system, finding a suitable location for the new airport, identifying and obtaining environmental agency consultations are some of the challenges with this project Perreault noted.

"This project has taken longer than our typical projects," he said.

In the summer of 2022, the department completed the consultations required for the draft Environmental Assessment and now is working with FAA to finalize the draft EA for public release later this winter.

Once public and agency comments are received on the draft EA, the department will prepare the Final EA and then will begin right-of-way acquisition for the new airport. The final design will be completed at the same time.

COMMENT SHEET

Noatak Airport Relocation
PROJECT NO. Z614780000
January 25, 2023

We welcome your comments. Thank you for taking the time to be involved.

NAME/ORGANIZATION: Alvin Ashby Member Community

MAILING ADDRESS: Box 131 Noatak, AK 99761

EMAIL ADDRESS: renegade-600-ace@yahoo.com

COMMENTS:

Dredging from the River to fill the ~~evolution~~ erosion thats by the airport. or to fill cement bags - Large cement bags. even to make pile for gravel source.

For further information, please contact Christopher Johnston, P.E., Engineering Manager, at (907) 451-2322, or email: *chris.johnston@alaska.gov*. To correspond by text telephone (TDD), call (907) 451-2363.

Please return comments by February 28, 2023. (If you need more space please use back side of sheet.)

COMMENT SHEET

Noatak Airport Relocation
PROJECT NO. Z614780000
January 25, 2023

We welcome your comments. Thank you for taking the time to be involved.

NAME/ORGANIZATION: _____

MAILING ADDRESS: _____

EMAIL ADDRESS: _____

COMMENTS:

ARE YOU GUYS PUTTING A SHELTER FOR THE PASSANGERS THAT ARE WAITING FOR THEIR FLIGHT

For further information, please contact Christopher Johnston, P.E., Engineering Manager, at (907) 451-2322, or email: *chris.johnston@alaska.gov*. To correspond by text telephone (TDD), call (907) 451-2363.

Please return comments by February 28, 2023. (If you need more space please use back side of sheet.)

COMMENT SHEET

Noatak Airport Relocation
PROJECT NO. Z614780000
January 25, 2023

We welcome your comments. Thank you for taking the time to be involved.

NAME/ORGANIZATION: Virgil Adams

MAILING ADDRESS: Box 72 Noatak. 99761

EMAIL ADDRESS: Virgilandlucy@Gmail.com

COMMENTS:

How close is too close on Frozen to Runway.

more info on GravelSource from River

For further information, please contact Christopher Johnston, P.E., Engineering Manager, at (907) 451-2322, or email: *chris.johnston@alaska.gov*. To correspond by text telephone (TDD), call (907) 451-2363.

Please return comments by February 28, 2023. (If you need more space please use back side of sheet.)

APPENDIX F

ESTIMATED PROJECT CO2 EMISSION OUTPUTS

Page

Stantec

Memo

To:	Alaska Department of Transportation and Public Facilities, Northern Region 2301 Peger Rd., Fairbanks, AK 99709	From:	Stantec Consulting Services Inc. 725 East Fireweed Lane, Anchorage, AK 99503
Project/File:	Noatak Airport Relocation	Date:	April 25, 2023

Reference: Greenhouse Gas Emissions Estimate in Support of the Draft Environmental Assessment

In support of the Draft Environmental Assessment on the behalf of the project sponsor, State of Alaska Department of Transportation & Public Facilities (DOT&PF), Northern Region, Stantec was requested to estimate greenhouse gas (GHG) emissions associated with the mobilization, material production, construction, and demobilization activities necessary for the proposed Noatak Airport Relocation project.

GHG emissions were calculated using the following assumptions:

- Referenced models do not include potential emission premiums for construction in arctic environments. Such premiums must be independently applied.
- The proposed project will be completed within three calendar years.
- The equipment fleet mix, construction methods, and schedule presented in this analysis are only representative for calculating the magnitude of emissions to be generated.

GHG emission estimates are based on:

- Input from industry experts,
- Readily accessible data from emission models,
- Equipment manufacturer specifications, and
- Feedback from DOT&PF and other stakeholders.

A summary of estimated GHG emissions for the proposed Noatak Airport Relocation project are included in the following pages.

Regards,

STANTEC CONSULTING SERVICES INC.

Estimated Project Combined CO2 & CO2e Emission Outputs*

Emission Source	1-Year Emissions (mt)	3-Year Emissions (mt)
Mob/Demobe	1012.3	3036.9
Material Production**	599.2	1797.7
Material Haul	321.3	963.8
Construction***	1027.5	3082.4
TOTALS	**2960.3**	**8880.8**

Notes:

* Carbon dioxide (CO2) is the most prevalent greenhouse gas (GHG). On average, it represents more than 95 percent of the impact on climate change that comes from burning transportation fuels. Methane (CH4) and nitrous oxide (N2O) are other GHG assocated with fuel combustion. Because of its prevalence, some models measure CO2 emissions only, and will slightly underestimate GHG overall total. Emissions calculations including all GHG associated with fuel combustion are noted as a CO2 factor – where "e" stands as a CO2 equivalent of other GHGs that have been factored in. Referenced models 1 & 4 in this spreadsheet output only CO2 emissions.

** Material production includes crushing of aggregate for subbase and surface course.

*** Includes material site development and reclamation, airport and road embankment construction, aggregate surfacing, culvert placement, bridge construction, SREB construction, construction camp operations, and all incidental construction.

Assumptions:

- Referenced models do not include potential emission premiums for construction in arctic environments. Such premiums must be independently applied.
- Project will be completed within three calendar years. The equipment fleet mix, construction methods, and schedule presented in this analysis are only representative for calculating the magnitude of emissions to be generated. Equipment use and duration is generally conservative for this purpose and not intended to specify how a contractor would sequence the work over the construction period.

1 Mathers, J. et al. (2023). The Green Freight Handbook. A Practical Guide for Developing a Sustainable Freight Transportation Strategy for Business. Environmental Defense Fund. 67 pp. pdf. Accessed on 03/31/2023 online at https://supplychain.edf.org/resources/the-green-freight-handbook/.

2 J. S. Cole Heavy Equipment Rental Co. 2017. Hourly Fuel Consumption Tables. Accessed on 3/31/2023 at: https://www.jscole.com/fueltables.

3 Various Equipment Industry Specification Sheets (available on request)

4 U.S. Environmental Protection Agency. 2023. Greenhouse Gases Equivalencies Calculator - Calculations and References. Accessed on 3/31/2023 at: https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references.

5 Feng Ma et al. (2016). Greenhouse Gas Emissions from Asphalt Pavement Construction: A Case Study in China. Int. Jour. Environ. Res. Public Health. March 13(3): 351. Accessed on 03/30/2023 at https://www.mdpi.com/1660-4601/13/3/351.

6 Klanfar, M. et al. (2016). *Fuel Consumption and Engine Load Factors of Equipment in Quarrying of Crush Stone* . 7 pp. pdf. Accessed on 3/31/2023 at: https://www.researchgate.net/publication/296573614_Fuel_consumption_and_engine_load_factors_of_equipment_in_quarrying_of_crushed_stone

7 Jansen, R. and Rohraff, D. (2023). Case Study: Powering a Remote Remediation Camp With Diesel, Renewables and Energy Storage. Accessed on 4/18/2023 at: https://energyandmines.com/2015/10/case-study-powering-a-remote-remediation-camp-with-diesel-renewables-and-energy-storage/.

8 Crowley Fuels Co., phone conversation on March 15, 2023.

Estimated Total Project Mobilization and Demobilization CO2 Emission Output - Barge Effort

Loading/Unloading Barge Emissions											
No.	Equipment	Power Output (HP)	Power Output (kWh)	Hourly Fuel Consumption[2,3] (gal/hr)	Reduced Hourly Fuel Consumption[6] (gal/hr)	Shift Duration (hr)	No. Shifts per Day (ea)	Single Load or Unload Duration (days)	Load and Unload Activities (ea)	Fuel Use (gal)	CO2 Emissions[4] (mt)
1	Cat 966 Loader	325	242.4	4.7	3.29	10	2	7	4	1,842	18.8
1	Cat 988 Loader	580	432.5	13.9	9.73	10	2	7	4	5,449	55.5
4	Cat P30000 Forklift	148	110.4	4.9	3.43	10	2	7	4	7,683	78.2
4	Mobile Light (Kohler KD1003- diesel est.)	24	17.9	0.5	0.35	10	2	7	4	784	8.0
2	Kohler 45kW generator (55REOZT4 est.)	74	55.2	2.5	1.75	10	2	7	4	1,960	20.0
									TOTAL	**17,718**	**180.5**

150-foot, Ocean-going Tug Emissions				
Seattle to Red Dog Mine Port One-Way Duration[8] (days)	One-Way Fuel Use[8] (gal)	One-Way Trips (ea)	Total Fuel Use (gal)	CO2 Emissions[4] (mt)
20	3,200	4	12,800	130.3
			TOTAL	**130.3**

Conversions:

- 1 HP = 0.7457 kWh
- 10,180g CO2 emitted per 1 gal diesel used.[4]

Estimated Total Project Mobilization and Demobilization CO2 Emission Output - Gravel Road Effort

Gravel Road Haul Emissions							
No.	Equipment Hauled or Hauling Feight	Equipment Weight (lbs)	Total Weight (ton)	Port to Snow Road Distance (miles)	No. of Trips (ea)	Total Haul (ton-miles)	CO2 Emissions[1] (mt)
1	Large grader (Cat 24 for est.)	161,700	80.85	40	2	6,468	1.0
2	D-6 size dozers on spread	51,333	51.33	40	2	4,107	0.7
1	D-8 size dozer in pit	88,000	44.00	40	2	3,520	0.6
1	Cat 966 Loader	48,000	24.00	40	2	1,920	0.3
1	Cat 988 Loader	112,574	56.29	40	2	4,503	0.7
4	Cat P30000 Forklift	41,000	82.00	40	2	6,560	1.1
1	Skid Steer (Cat 277)	9,000	4.50	40	2	360	0.1
2	Excavators (100 to 150HP) Cat. 320 est.	48,300	48.30	40	2	3,864	0.6
2	Compactors (Cat. CS54 est.)	23,265	23.27	40	2	1,861	0.3
4	Mobile Light (Kohler KD1003- Diesel)	1,800	3.60	40	2	288	0.0
2	6" pump (United Rent PP66S14 - J.D. Diesel)	4,600	4.60	40	2	368	0.1
2	Kohler 45kW generator (55REOZT4)	4,941	4.94	40	2	395	0.1
3	Heaters	40	0.06	40	2	5	0.0
2	Intl. HV 10 yd. dump truck	27,000	27.00	40	2	2,160	0.3
2	ATV Water Truck (Volvo A25)	43,000	43.00	40	2	3,440	0.6
3	ATV Rock Truck (Volvo A40)	68,900	103.35	40	2	8,268	1.3
1	Tucker SnoCat w/blade & drag	15,000	7.50	40	2	600	0.1
3	Smithco SX side dump trailer	15,000	22.50	40	2	1,800	0.3
6	35+ ton low-boy	25,000	75.00	40	16	48,000	7.8
6	Semi tractors	10,000	30.00	40	16	19,200	3.1
3	Ford F-250 pickup (hauled)	7,000	10.50	40	2	840	0.1
1	Gross Weight 26' x 50' SREB Materials	52,000	26.00	40	1	1,040	0.2
1	Gross Weight Culverts	10,000	5.00	40	1	200	0.0
1	Gross Weight 20' x 150' Bridge Materials	450,000	225.00	40	1	9,000	1.5
1	Gross Weight Electrical Materials	20,000	10.00	40	1	400	0.1
2	50-ton Crane (RTC 8050)	74,000	74.00	40	2	5,920	1.0
40	Conex (Construction Camp)	8,500	170.00	40	2	13,600	2.2
6	Case Steiger Tractor w/trailers	55,000	165.00	40	2	13,200	2.1
						TOTAL	**26.3**

Estimated Total Project Mobilization and Demobilization CO2 Emission Output - Gravel Road Effort

Gravel Road Haul Support Vehicle Emissions						
No.	Truck Type	Port to Snow Road Distance (miles)	No. of Trips (ea)	Fuel Consumption Rate (mpg)	Fuel Use (gal)	CO2 Emissions[4] (mt)
1	Shop/Service Truck	40	6	12	20.0	0.2
1	Fuel Truck (5000 gal)	40	6	12	20.0	0.2
1	Flatbed 3 Ton Truck	40	6	12	20.0	0.2
					TOTAL	**0.6**

Conversions:

- 162g CO2 emitted per 1 ton-mile hauled.[1]
- 10,180g CO2 emitted per 1 gal diesel used.[4]

Estimated Total Project Mobilization and Demobilization CO2 Emission Output - Snow Road Effort

Snow Road Haul Emissions							
No.	Equipment Hauled or Hauling Feight	Equipment Weight (lbs)	Total Weight (ton)	Port to Snow Road Distance (miles)	No. of Trips (ea)	Total Haul (ton-miles)	CO2 Emissions[1] (mt)
1	Large grader (Cat 24 for est.)	161,700	80.85	28	2	4,528	0.73
2	D-6 size dozers on spread	51,333	51.33	28	2	2,875	0.47
1	D-8 size dozer in pit	88,000	44.00	28	2	2,464	0.40
1	Cat 966 Loader	48,000	24.00	28	2	1,344	0.22
1	Cat 988 Loader	112,574	56.29	28	2	3,152	0.51
4	Cat P30000 Forklift	41,000	82.00	28	2	4,592	0.74
1	Skid Steer (Cat 277)	9,000	4.50	28	2	252	0.04
2	Excavators (100 to 150HP) Cat. 320 est.	48,300	48.30	28	2	2,705	0.44
2	Compactors (Cat. CS54 est.)	23,265	23.27	28	2	1,303	0.21
4	Mobile Light (Kohler KD1003- Diesel)	1,800	3.60	28	2	202	0.03
2	6" pump (United Rent PP66S14 - J.D. Diesel)	4,600	4.60	28	2	258	0.04
2	Kohler 45kW generator (55REOZT4)	4,941	4.94	28	2	277	0.04
3	Heaters	40	0.06	28	2	3	0.00
2	Intl. HV 10 yd. dump truck	27,000	27.00	28	2	1,512	0.24
2	ATV Water Truck (Volvo A25)	43,000	43.00	28	2	2,408	0.39
3	ATV Rock Truck (Volvo A40)	68,900	103.35	28	2	5,788	0.94
1	Tucker SnoCat w/blade & drag	15,000	7.50	28	2	420	0.07
3	Smithco SX side dump trailer	15,000	22.50	28	2	1,260	0.20
6	35+ ton low-boy (not hauled up snow road)	25,000	75.00	28	0	0	0.00
6	Semi tractors	10,000	30.00	28	2	1,680	0.27
3	Ford F-250 pickup (hauled)	7,000	10.50	28	2	588	0.10
1	Gross Weight 26' x 50' SREB Materials	52,000	26.00	28	1	728	0.12
1	Gross Weight Culverts	10,000	5.00	28	1	140	0.02
1	Gross Weight 20' x 150' Bridge Materials	450,000	225.00	28	1	6,300	1.02
1	Gross Weight Electrical Materials	20,000	10.00	28	1	280	0.05
2	50-ton Crane (RTC 8050)	74,000	74.00	28	2	4,144	0.67
40	Conex (Construction Camp)	8,500	170.00	28	2	9,520	1.54
6	Case Steiger Tractor w/trailers	55,000	165.00	28	11	50,820	8.23
						TOTAL	**17.73**

Estimated Total Project Mobilization and Demobilization CO2 Emission Output - Snow Road Effort

Snow Road Construction Emissions									
No.	Equipment	Power Output (HP)	Power Output (kWh)	Hourly Fuel Consumption (gal/hr)	Shift Duration (hr)	Construction Duration (days)	No. of Seasons (ea)	Fuel Use (gal)	CO2 Emissions[4] (mt)
6	Case Steiger Tractor w/trailers	535	398.9	7.8	24	30	4	135,000	1,374.3
1	Fuel Truck (5000 gal)	219	163.3	1.7	24	30	4	4,800	48.9
2	Tucker SnoCat w/blade & drag	354	264.0	2.1	24	30	4	12,000	122.2
2	ATV Water Truck (Volvo A25)	325	242.4	2.4	24	30	4	13,800	140.5
3	ATV Rock Truck (Volvo A40)	580	432.5	2.4	24	30	4	20,700	210.7
2	Cat 966 Loader	148	110.4	2.2	24	30	4	12,600	128.3
1	Skid Steer (Cat 277)	131	97.7	0.9	24	30	4	2,700	27.5
3	Ford F-250 pickup (hauled)	-	-	1.0	24	30	4	9,000	91.6
1	20-Person Construction Camp	-	-	4.2	24	30	4	12,000	122.2
4	Mobile Light (Kohler KD1003- Diesel)	-	-	0.8	24	30	4	9,600	97.7
3	Heaters	-	-	2.0	24	30	4	17,100	174.1
1	D-6 size dozers on spread	24	17.7	2.7	24	30	4	7,800	79.4
1	Shop/Service Truck	173	129.0	1.4	24	30	4	3,900	39.7
1	Envirocvac	74	55.2	0.8	24	30	4	2,400	24.4
							TOTALS	**263,400**	**2,681.5**

Conversions:

- 162g CO2 emitted per 1 ton-mile hauled.[1]
- 10,180g CO2 emitted per 1 gal diesel used.[4]

Notes:

- Emissions produced from support vehicles needed during snow road haul are neglible. Table was omitted from emissions calculation.

Estimated Total Project Material Production CO2 Emission Output

Material Type	Weight (ton)	Weight (mt)	CO2e Emissions[5] (mt)
Subbase	247,000	224,029	1,308.3
CASC	92,400	83,807	489.4
		TOTAL	**1,797.7**

Conversions:

- 1 ton = 0.907 metric ton
- 5.84kg C02e emitted per 1 metric ton of crushed aggregate.[5]

Abbreviations:

CASC Crushed Aggregate Surface Course

Estimated Total Project Material Haul CO2 Emission Output

Borrow (ton)	Subbase (ton)	CASC (ton)	Material Source to Project Site (mi)
1,116,000	247,000	92,400	2

Side Dump Trailer Volume (cy)	Full Side Dump Trailer Weight (ton)	Empty Side Dump Trailer Weight (ton)	Semi Tractor Weight (ton)
24	56	8	5

Rock Truck Volume (cy)	Full Rock Truck Weight (ton)	Empty Rock Truck Weight (ton)
29	93	34

Haul Vehicle	Total Material Weight (ton)	Total Material Volume (cy)	Haul Trips (ea)	Haul Weight (ton)	Total Haul (ton-miles)	CO2 Emissions[1] (mt)	Notes
Rock Truck - Full	1,116,000	558,000	18,980	93	3,539,694	573.4	Borrow only
Rock Truck - Empty	0	0	18,980	34	1,307,694	211.8	
Side Dump - Full	339,400	169,700	7,071	61	855,571	138.6	Subbase and CASC only
Side Dump - Empty	0	0	7,071	13	176,771	28.6	
					TOTAL	**952.4**	

Fuel (gal)	Fuel Tank Volume (gal)	Full Fuel Tank Fuel Weight (ton)	Empty Fuel Tank Weight (ton)	Weighted Avg. Haul Vehicle Weight (ton)	Barge Landing to Project Site (mi)
200,000	5,000	17.5	2.9	14	68

Fuel Tank	Total Material Weight (ton)	Total Material Volume (gal)	Haul Trips (ea)	Haul Weight (ton)	Total Haul (ton-miles)	CO2 Emissions[1] (mt)	Notes
Full	1,400,000	200,000	20	35	47,178	7.6	Two tanks on one trailer
Empty	0	0	20	17	23,378	3.8	Two tanks on one trailer
					TOTAL	**11.4**	

Conversions:

- 1 cy = 2 ton
- 162g CO2 emitted per 1 ton-mile hauled.[1]

Abbreviations:

CASC

Estimated Total Construction CO2 Emission Output

No.	Equipment	Power Output (HP)	Power Output (kWh)	Hourly Fuel Consumption[2,3] (gal/hr)	Reduced Hourly Fuel Consumption[6] (gal/hr)	Shift Duration (hr)	Construction Season (days)	No. of Seasons (ea)	Fuel Use (gal)	CO2 Emissions[4] (mt)
1	Large grader (Cat. 24 est.)	535	398.9	13.8	9.66	10	120	3	34,776	354.0
2	D-6 size dozers on spread	219	163.3	7.6	5.32	10	120	3	38,304	389.9
1	D-8 size dozer in pit	354	264.0	11.7	8.19	10	120	3	29,484	300.1
1	Cat 966 Loader	325	242.4	4.7	3.29	10	120	3	11,844	120.6
1	Cat 988 Loader	580	432.5	13.9	9.73	10	120	3	35,028	356.6
2	Excavators (Cat. 320 est.)	148	110.4	4.9	3.43	10	120	3	24,696	251.4
2	Compactors (Cat. CS54 est.)	131	97.7	3.5	2.45	10	120	3	17,640	179.6
2	ATV Water Truck (Volvo A25)	240	179.0	6.2	4.34	10	120	2	20,832	212.1
3	F-250 Pickup	-	-	1.0	0.70	10	120	3	7,560	77.0
1	Shop/Service Truck	-	-	1.5	1.05	10	120	3	3,780	38.5
1	Fuel Truck (5000 gal)	-	-	2.0	1.40	10	120	3	5,040	51.3
1	Flatbed 3 Ton Truck	-	-	1.5	1.05	10	120	3	3,780	38.5
4	Mobile Light (Kohler KD1003- diesel est.)	23.7	17.7	0.5	0.35	10	120	3	5,040	51.3
1	6" pump (United Rent PP66S14 - J.D. diesel est.)	173	129.0	6.8	4.76	12	120	3	20,563	209.3
2	Kohler 45kW generator (55REOZT4 est.)	74	55.2	2.5	1.75	12	120	3	15,120	153.9
1	500kW generator (Construction Camp)	-	-	2.5	-	24	120	3	21,870	222.6
2	50-ton Crane (RTC 8050)	500	372.9	6.2	4.34	10	60	1	7,440	75.7
								TOTALS	**273,487**	**3,082.4**

Conversions:

- 1 HP = 0.7457 kWh
- 10,180g CO2 emitted per 1 gal diesel used.[4]

Notes:

- Hourly fuel consumption was reduced by 30% to account for equipment not utilizing full power output throughout the entire duration of construction activities.
- 100 person camp, (2) 500-kW generators @ 460L/day of diesel consumption. Assuming 50 person camp, (1) 500-kW generator @ 230L/day (60.75gal/day) of diesel consumption.[7]

APPENDIX G

SECTION 4(F) *DE MINIMIS* FINDING

Page

U.S. Department
of Transportation
Federal Aviation Administration

June 16, 2022

Mr. Steve Tryon, Director
Office of Environmental Policy and Compliance
U.S. Department of the Interior
1849 C Street, N.W. (MS 2462)
Washington, DC 20240

Director Tryon,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the FAA (Federal Aviation Administration), proposes to relocate the Noatak Airport approximately 2 miles west of Noatak, AK. The proposed project would create a safe, reliable, and cost-effective facility that provides the community with adequate access, supports the community's long-term development goals, and is consistent with current FAA safety regulations. The existing airport is threatened by Noatak River erosion, which would necessitate permanent runway closure. Additionally, there is insufficient airport land to address other existing airport deficiencies. Time critical airport relocation would ensure continued safe and reliable air transportation for Noatak.

The existing airport and community are located 48 miles northwest of Kotzebue, and 71 miles north of the Arctic Circle. The proposed project is located at 67.5608° North Latitude and -162.9802° West Longitude; Sections 16-21 & 28-32, Township 25 North, Range 19 West; Kateel River Meridian; United States Geological Survey Quadrangle Noatak C-2 and C-3, Alaska (Figure 1).

The Noatak Airport Relocation project includes the following elements (Figures 2-3 attached to email):

Airport Relocation

- Construct runway, taxiway, apron, lighting, a Snow Removal Equipment Building (SREB), and FAA Navigational Aids.
    - The runway and taxiway would be built to FAA standards for a category B-II airport capable of handling passenger and cargo aircraft and accommodate ground maneuvering larger aircraft such as DC-6 and C-130 that serve the airport unscheduled.
    - The apron area would be constructed for temporary loading of passengers and/or cargo as well as itinerant parking and access to lease lots.
    - Construct a building and pad capable of housing snow removal equipment and lighting/navigational controls.
    - Construct pads and install new and relocated navigational aids, and other airport related equipment and shelter Aids (s).
- Decommission existing airport including unneeded FAA equipment.

Access Road

- Construct a road from Noatak to the relocated airport, with a bridge crossing Kuchoruk Creek.
    - The road would be approximately 2 miles long and 24-foot (ft.) wide, with side slopes that include other safety features (e.g., signage) where required, and culverts would be installed to maintain drainage patterns.
    - A two-lane bridge would cross Kuchoruk Creek and be designed to accommodate high water and aufeis. Abutments would be placed on either side of the creek within the floodplain. Work may be required below ordinary high water of the creek, however no in-water work is anticipated.

Material Sources

- Develop local material sources and access.
    - Local gravels within the Noatak River drainage would be used for construction; excavation may occur below the water table.
    - A pioneer material access road would accommodate safe summertime access and prevent damage to underlying soil hydrology.

Mobilization

- Transport material and equipment utilizing a combination of air, water, and overland access.
- Construct gravel pads for staging areas.

Utilities

- Extend above ground utility lines to the relocated airport.

Right of Way

- Acquire land for the relocated airport and access road through various temporary and permanent interests from federal, state, and private entities.
- Dispose of existing airport property in accordance with Federal and State regulations.

Connected Action

- A new community provided fuel transfer system would be required.
- Contaminant remediation on existing airport lease lots would be required by responsible lessees.

Airport Layout Plan

- FAA conditional approval of the Noatak Airport Layout Plan.

Construction would start in 2022 and take approximately three seasons to complete.

A component of the EA is a draft 4(f) analysis required via Section 4(f) of the U.S. DOT Act of 1966 (49 U.S.C. § 303) (Act). As you are aware the Act requires the analysis of potential physical and constructive use impacts of significant 4(f) resources such as the Yukon-Delta National Wildlife Refuge.

FAA has reached a draft conclusion of no physical or constructive use of the Yukon Delta National Wildlife Refuge from the proposed project. Please see the attached draft 4f analysis for the proposed project.

Please respond within 45-days of the date you receive this letter with USFWS response to FAA's draft 4f conclusion for this proposed project.

Sincerely,

6/18/2022

X Keith Gordon

Keith Gordon

Signed by: 530791

Keith Gordon
Environmental Protection Specialist

DRAFT Section 4(f) Determinations

Noatak Airport Relocation
Noatak, Alaska
Federal/State Project Number(s): Pending/Z614780000

I. Proposed Project Description

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the FAA (Federal Aviation Administration), proposes to relocate the Noatak Airport approximately 2 miles west of Noatak, AK. The proposed project would create a safe, reliable, and cost-effective facility that provides the community with adequate access, supports the community's long-term development goals, and is consistent with current FAA safety regulations. The existing airport is threatened by Noatak River erosion, which would necessitate permanent runway closure. Additionally, there is insufficient airport land to address other existing airport deficiencies. Time critical airport relocation would ensure continued safe and reliable air transportation for Noatak.

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The Noatak Airport Relocation project includes the following elements (Figures 2-3):

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- Construct runway, taxiway, apron, lighting, a Snow Removal Equipment Building (SREB), and FAA Navigational Aids.
    - The runway and taxiway would be built to FAA standards for a category B-II airport capable of handling passenger and cargo aircraft and accommodate ground maneuvering larger aircraft such as DC-6 and C-130 that serve the airport unscheduled.
    - The apron area would be constructed for temporary loading of passengers and/or cargo as well as itinerant parking and access to lease lots.
    - Construct a building and pad capable of housing snow removal equipment and lighting/navigational controls.
    - Construct pads and install new and relocated navigational aids, and other airport related equipment and shelter Aids (s).
- Decommission existing airport including unneeded FAA equipment.

Access Road

- Construct a road from Noatak to the relocated airport, with a bridge crossing Kuchoruk Creek.
    - The road would be approximately 2 miles long and 24-foot (ft.) wide, with side slopes that include other safety features (e.g., signage) where required, and culverts would be installed to maintain drainage patterns.
    - A two-lane bridge would cross Kuchoruk Creek and be designed to accommodate high water and aufeis. Abutments would be placed on either side of the creek within the floodplain. Work may be required below ordinary high water of the creek, however no in-water work is anticipated.

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- Develop local material sources and access.
    - Local gravels within the Noatak River drainage would be used for construction; excavation may occur below the water table.
    - A pioneer material access road would accommodate safe summertime access and prevent damage to underlying soil hydrology.

Mobilization

- Transport material and equipment utilizing a combination of air, water, and overland access.
- Construct gravel pads for staging areas.

Utilities

- Extend above ground utility lines to the relocated airport.

Right of Way

- Acquire land for the relocated airport and access road through various temporary and permanent interests from federal, state, and private entities.
- Dispose of existing airport property in accordance with Federal and State regulations.

Connected Action

- A new community provided fuel transfer system would be required.
- Contaminant remediation on existing airport lease lots would be required by responsible lessees.

Airport Layout Plan

- FAA conditional approval of the Noatak Airport Layout Plan.

Construction would start in 2022 and take approximately three seasons to complete.

II. Description of Proposed Project Area Section 4(f) Resources and Potential Impacts

a. Publicly owned Parks and Recreation Areas of National, State or Local Significance Open to the Public

- **Cape Krusenstern National Monument**

As part of the Alaska National Interest Lands Conservation Act (ANILCA), Congress established Cape Krusenstern National Monument, Noatak National Preserve, and Kobuk Valley National Park. The three areas contain unaltered landscapes, vast populations of animals and plants in intact ecosystems, and archaeological sites dating back to the first habitation of North America. Congress set aside these areas for their preservation and enjoyment short of the point of impairment; however, ANILCA permits some uses that would not be permitted in most other National Park Service (NPS) areas, particularly sport hunting in Noatak National Preserve and subsistence uses by local residents in all three areas. The three units are distinct in character but united in their interrelated natural, geological, historical, archeological, recreational, educational, cultural, scenic, and scientific resources and values. The three areas are managed by the NPS collectively as the Western Arctic National Parklands, and provide residents with the opportunity to maintain a subsistence way of life as an integral part of a dynamic ecosystem while also

providing all people with the chance to enjoy a variety of recreational activities - boating, sport fishing, hiking, winter travel - in true wilderness.[1] **As a significant, and publicly owned and publicly available park component, the Cape Krusenstern National Monument, a component of the Western Arctic National Parklands system, qualifies as a Section 4(f) property.**

b. Historic Resources

- **Cape Krusenstern Archaeological District National Historic Landmark**

The Alaska Heritage Resources Survey (AHRS) indicates that the Cape Krusenstern Archaeological District National Historic Landmark (CKNHL) was designated on November 7, 1973. The Cape Krusenstern National Monument is entirely within the CKNHL. There is evidence that the CKNHL has been inhabited almost continuously for 11,000 years. Sites within the CKNHL represent virtually the entire range of known prehistoric cultures in northwestern Alaska, in a "horizonal stratification" that has improved understanding of the sequence of these cultures. Sites in the Noatak Valley, an important avenue to the interior may provide important information about early migrations. The CKNHL encompasses the region around Cape Krusenstern, on the coast from north of Kivalina Lagoon south and east to beyond the mouth of Noatak River, inland to a point northwest of Maiyumerak Mountains, comprising over 2 million acres both public and private land ownerships which underlie the entire subject project Area of Potential Effect (APE). The Cape Krusenstern Archaeological District was listed on the NRHP as a National Historic Landmark (Figure 4) under Criterion D in 1974 (AHRS 2021). **As an historic property listed on the NRHP, the CKNHL qualifies as a Section 4(f) property**.

III. Project Section 4(f) Preliminary Use Determinations and Potential Impacts

Cape Krusenstern National Monument (CKNM)

During contractor mobilization/demobilization, the proposed project would temporarily utilize the existing DeLong Mountains Transportation System (DMTS) road which generally bisects the CKNM. The DMTS is an existing transportation facility crossing for which NANA Regional Corporation (NANA) has a long-term access agreement with the NPS, and for which the Alaska Industrial Development and Export Authority (AIDEA) has a lease with NANA for its use across both NANA- and NPS-owned lands. As this portion of the CKNM has already been converted to an active, transportation-purposed Right of Way (ROW) currently owned by NANA and leased for transportation use by AIDEA, there is no Section 4(f) use of the CKNM by the proposed project. Should any off-road use of CKNM lands adjacent to the existing DMTS become necessary due to unforeseen circumstances, an updated Section 4(f) evaluation should be completed to ensure compliance is maintained.

Cape Krusenstern Archaeological District National Historic Landmark (CKNHL)

a) ***Portions of the CKNHL within the DMTS Road ROW*** **(Figure 4).**
The existing NANA-owned and AIDEA-leased DMTS developed transportation facility crosses through the CKNHL, including portions both within and outside of the CKNM. Contractor mobilization/demobilization would utilize a portion of the DMTS facility to access

[1] NPS 2015. Noatak National Preserve. *Western Arctic National Parklands*. Accessed online November 2021 at https://www.nps.gov/noat/learn/management/wear.htm

the proposed project construction site at Noatak. Within the DMTS ROW located inside the CKNHL, there would be No Section 4(f) Use by the proposed project as:

a) the DMTS is not a listed contributing historic element to the CKNHL;
b) the DMTS is an existing transportation facility overlying the CKNHL; and,
c) there would be no additional anticipated impacts to CKNHL resources underlying DMTS beyond ongoing impacts effected by the ongoing, routine heavy mining traffic associated with Red Dog mine and port operations.

b) Portions of the CKNHL not within the DMTS Road ROW and proposed for project mobilization and demobilization use only **(Figure 4).**

During contractor mobilization/demobilization for the proposed project, a temporary snow/ice road between Noatak and the DMTS would be constructed across an undeveloped portion of the CKNHL and used to access the project construction site and community of Noatak when ground is frozen and adequate snow cover present. Mobilization/demobilization activity would only occur during two discrete periods: 1) prior to project construction to mobilize equipment to the project, and 2) to demobilize equipment after project construction is completed. The constructed snow/ice road would melt, and the route would not be used between the two periods and following the second period of use.

No adverse physical impacts to the CKNHL landscape, historic resources, ground surface, or existing vegetation on the route are anticipated to be caused by use of the route for travel during the proposed use periods and no mitigation is expected to be necessary. Design and operational measures to avoid and minimize potential effects include the following: the route has been developed to reasonably follow an alignment of least topographical grade to minimize the potential for snow/ice road subsidence and avoid the need for physically constructing areas of snow/ice embankment on sidehills or slopes; the temporary occupancy periods of the mobilization/demobilization route through that portion of the CKNHL for project construction-related activities would be minimal and only constitute two discrete transport events of equipment into and out from the project construction site with no other occasional use; the route would only be used when frozen and covered in adequate snow and/or ice to prevent damage to vegetation, water bodies or the ground surface; route conditions would be monitored during each transport period and any location potentially threatened with ground or vegetation disturbance reinforced with snow and/or ice cover by appropriate methods and equipment; the durations of the two periods of occupancy over the route would neither be greater than the time needed to build the project nor would there be a change in ownership of the land; there would be no more than minimal change to that portion of the CKNHL or its nature by its temporary use in existing ground conditions and vegetation would remain intact; constructed ice bridges over streams or other watercourses would be removed subsequent to final passage of equipment over them to ensure natural flow conditions resume during spring breakup; there would be neither anticipated permanent adverse physical impacts nor temporary or permanent interference with Section 4(f) activities or purposes of that portion of the CKNHL; that portion of the CKNHL would be fully returned to its existing condition; and, there is a documented agreement with the State Historic Preservation Officer (SHPO), the Official with Jurisdiction (OWJ) of the CKNHL, on a finding of No Historic Properties Adversely Affected by the proposed project. Resultantly, proposed temporary occupancy of a winter mobilization/demobilization route through the non-DMTS portion of the CKNHL does not constitute use within the meaning of Section 4(f).

c) Portions of the CKNHL where an airport, airport access road, material sites and pioneer material site access road would be Permanently Constructed **(Figure 2).**

On approximately 262 various acres of the 500,000-acre CKNHL (i.e., 0.0005% of the CKNHL), the proposed project would permanently construct a new airport, a new airport access road to the community of Noatak, several staging pads along the new airport access road, two material sites on gravel bars within the Noatak River, and a pioneer road between one material site and the new airport access road. As new transportation facilities would permanently occupy portions of the CKNHL containing archeological resources warranting preservation in place, their construction could potentially constitute physical Section 4(f) use of those portions of the CKNHL. However, Chapter 5.3.3 of the Desk Reference provides that FAA may make a "*de minimis* impact" (i.e., '*de minimis* use') determination with respect to physical use of the CKNHL if, after taking into account any measures to minimize harm, the respective Section 106 finding is "no adverse effect to historic properties" or "no historic properties affected" and the FAA NEPA document includes documentation sufficient to support the determination. Such a *de minimis* determination would not require an analysis and finding of no feasible and prudent alternatives or finding that all possible planning has been done to minimize harm. FAA must also consult the consulting parties identified in accordance with 36 CFR part 800, inform the officials with jurisdiction of the intent to make a *de minimis* impact determination, and must concur in a finding of "no adverse effect to historic properties" or "no historic properties affected." Compliance with 36 CFR part 800 satisfies the public involvement and agency coordination requirement for a *de minimis* finding for historic sites.

Regarding the above, the proposed project description was modified in 2017 and original project Section 106 APE revised to include the new proposed snow/ice road haul route not previously assessed as part of 2006 field investigations. In addition, the description of the proposed pioneer road material haul route to the south material source, previously proposed as a winter-only haul route, was revised to reflect proposed summertime access. The route of the proposed pioneer access road was also shifted to the north of the Kuchoruk Creek/Noatak River confluence to avoid crossing Kuchoruk Creek. As the revised, current route of the proposed pioneer road was not assessed during the 2006 archaeological field investigation, reviews of the Alaska Heritage Resources Survey (AHRS) in January and October 2019 indicated, respectively, that additional cultural resources had been recorded within one mile of the APE in the intervening years, and that no historic resources of concern were identified along the proposed snow/ice road route.

Agency Coordination and Section 106 Consultation on Revised Project Scope.

Including the incorporation of revisions and new information noted above, the following includes an updated, full summary of completed and pending Section 106 consulting party correspondence:

- *Oral History and Archival Research for the Noatak Airport Relocation, Noatak, Alaska* and *Noatak Airport Relocation Archaeological Survey, Noatak, Alaska* (Mobley 2006) were submitted to the Alaska Office of History and Archaeology for review and consideration during State Historic Preservation Officer (SHPO) review of the project results and findings in 2007.

- In December 2007, the DOT&PF on behalf of the FAA determined that no historic properties would be affected by the proposed Noatak Airport Relocation Project, and the SHPO concurred with this finding on January 31, 2008 (SHPO File No. 3130-IRFAA).

- Due to the extended time that elapsed since the initial project consultation efforts occurred and with the addition of the proposed winter snow road, pioneer road, staging pads, and material

sites, Section 106 consultation was re-initiated on February 21, 2019. Parties consulted included:

- the Alaska SHPO
- the NPS
- the Native Village of Kivalina
- the City of Kivalina
- the Native Village of Noatak
- NANA Regional Corporation
- Maniilaq Association
- the Northwest Arctic Borough
- NPS Western Arctic National Parklands Office
- the Bureau of Indian Affairs (BIA)

- The *Noatak Airport Relocation Project Cultural Resources Survey Report* (Stantec 2020) was submitted to the SHPO in April 2020.

- A finding of "No Historic Properties Adversely Affected" was transmitted by letter to SHPO, NPS, and other consulting parties on August 26, 2021; the SHPO concurred on September 22, 2021.

- The FAA will submit the draft de Minimis determination to the Official with Jurisdiction (NPS) for review and concurrence.

- Public notice and opportunity for comment as well as the concurrence for a de Minimis impact determination may be combined with similar actions undertaken as part of the NEPA process (23 CFR 774.5(b). Upon reception of OWJ concurrence on the de Minimis finding, FAA will make the approved determination available for public review and comment a) during public meetings conducted for the release of the project Draft Environmental Assessment (DEA); and b) by posting of the approved determination on the DOT&PF project website and online public notice websites.

As FAA has conducted necessary agency coordination and consultation and found, with SHPO concurrence, the construction of the proposed new airport, access road, material sites and pioneer material site access road within portions of the CKNHL would result in no historic properties adversely affected, the proposed permanent use of those portions of the CKNHL for transportation purposes can be considered *de minimis* based in part, on FAA's determination that the potential effects of noise, air and water pollution, wildlife and habitat effects, effects to aesthetic values and/or other permanent effects from the conversion of 262 acres of the approximately 500,000 acre NHL (0.0005%) would result in no impairment of intended uses of the potentially affected 4f lands.

IV. Proposed Final Section 4(f) Determinations

1) Cape Krusenstern National Monument (CKNM)

As all proposed project activities would occur on the existing, privately owned DMTS transportation ROW and facility within the CKNM, there is **no Section 4(f) use of the CKNM**.

2) Cape Krusenstern Archaeological District National Historic Landmark (CKNHL)

a) Portions of the CKNHL within the DMTS Road ROW.

As proposed project activities would occur only on the existing, privately owned DMTS transportation ROW and facility within the CKNHL, and the DMTS is not a contributing historic element to the CKNHL; and there would be no additional anticipated impacts above current conditions to CKNHL resources underlying DMTS there is **no Section 4(f) use of the CKNHL within the DMTS transportation ROW and facility.**

b) Portions of the CKNHL not within the DMTS ROW and proposed for project mobilization and demobilization use only.

Proposed temporary occupancy of this portion of the CKNHL for project construction-related activities would be minimal and durations of temporary occupancy no greater than the time needed to build the project, and there would be no change in land ownership. There would be no more than minimal change to that portion of the CKNHL or its nature; there would be neither anticipated permanent adverse physical impacts nor temporary or permanent interference with Section 4(f) activities or purposes of that portion of the CKNHL; and that portion of the CKNHL would be fully returned to its existing condition. There is also documented agreement with the State Historic Preservation Officer (SHPO), the Official with Jurisdiction (OWJ) of the CKNHL, on a finding of No Historic Properties Adversely Affected for the proposed project. **Therefore, proposed project temporary occupancy of a winter mobilization/demobilization route through the non-DTMS portion of the CKNHL does not constitute use within the meaning of Section 4(f).**

c) Portions of the CKNHL where an airport, airport access road, material sites and pioneer material site access road would be Permanently Constructed

The proposed project would permanently convert approximately 262 acres (0.0005%) of the CKNHL to transportation use by permanently constructing a new airport, new airport access road to the community of Noatak, several staging pads along the new airport access road, two new material sites on gravel bars within the Noatak River, and a new pioneer road between one material site and the new airport access road. However, FAA has conducted necessary agency coordination and consultation pursuant to 36 CFR 800.5(d)(2), implementing regulations of Section 106 of the National Historic Preservation Act and found, with SHPO concurrence, that proposed construction of an airport, airport access road, material sites and pioneer material site access road within portions of the CKNHL would result in No Historic Properties Adversely Affected. Further, FAA has determined that the amount of acreage and the location of the land impacted shall not impair the use of the remaining Section 4(f) land, in whole or in part, for its intended purposes. **Accordingly,** the **permanent conversion of approximately 262 acres of portions of the CKNHL to transportation purposes for the proposed project meets criteria for *de minimis* Section 4(f) use (23 CFR 774.17).**

6/18/2022

X Keith Gordon

Keith Gordon

Signed by: 530791

Keith Gordon, Environmental Protection Specialist
Federal Aviation Administration
Alaska Region, Airports Division

Date: June 16, 2022

Hillman, Kacy

From: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>
Sent: Monday, August 1, 2022 1:06 PM
To: Lindberg, Sara; Hillman, Kacy
Subject: FW: NPS response to FAA preliminary 4(f) determination on Noatak Airport Relocation

Follow Up Flag: Follow up
Flag Status: Flagged

Hello,

Attached is the 4(f) consultation for Noatak. Can you please incorporate language into the EA and send me a copy of the updated document. We need to send off to FAA to finalize.

Thanks,
Missy

From: Gordon, Keith (FAA) <keith.gordon@faa.gov>
Sent: Friday, July 22, 2022 8:49 AM
To: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>; McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Subject: FW: NPS response to FAA preliminary 4(f) determination on Noatak Airport Relocation

FYI

Keith Gordon
Environmental Protection Specialist
Federal Aviation Administration
Alaska Region
222 West 7th Avenue, #14
Anchorage, AK 99513-7587
Desk – 907-271-5030
Fax – 907-271-2851

From: Johnson, Emily A <Emily_A_Johnson@nps.gov>
Sent: Thursday, July 21, 2022 11:20 AM
To: Gordon, Keith (FAA) <keith.gordon@faa.gov>
Cc: Hilderbrand, Grant V <Grant_Hilderbrand@nps.gov>; Bella, Elizabeth M <elizabeth_bella@nps.gov>; Schofield, Leah J <leah_schofield@nps.gov>; Pederson Weinberger, Jennifer A. <Jennifer_Pederson@nps.gov>; Cochon, Grace M <grace_cochon@ios.doi.gov>; Scida, Pasquale J <pasquale_scida@ios.doi.gov>; Alam, Shawn K <Shawn_Alam@ios.doi.gov>; Stedeford, Melissa <Melissa_Stedeford@nps.gov>
Subject: NPS response to FAA preliminary 4(f) determination on Noatak Airport Relocation

Hi Keith,

Thank you for the opportunity to comment on the draft Section 4(f) determination for the Noatak Airport Relocation project.

Cape Krusenstern Archeological District National Historical Landmark (CKNHL) highlights the archeological and contemporary importance of travel, trade, communication, and hunting and gathering between the coast and the western foothills of the Brooks Range. The CKNHL was designated in 1973 and comprises over two million acres. More information is available here: Cape Krusenstern National Historic Landmark (U.S. National Park Service) (nps.gov).

Regarding the National Historic Preservation Act of 1966 (NHPA) Section 106, the National Park Service (NPS) administers the National Historic Landmark (NHL) program for the Secretary of the Interior. Federal agencies undertaking a project within an NHL must be in compliance with Section 106 of the NHPA, as amended, and its implementing regulations (36 CFR Part 800). NPS Alaska concurred with the finding of No Historic Properties Adversely Affected via correspondence with the Federal Aviation Administration (FAA) emailed on June 21, 2022, May 23, 2022, and October 6, 2021.

Regarding the intent of Alaska Department of Transportation and Public Facilities (ADOT&PF) and FAA to make a Section 4(f) *de minimus* impact finding for the above referenced project, NPS is the Official with Jurisdiction for 4(f) purposes for NHLs per a 2018 Department of Interior (DOI) memo and a policy drafted by the Federal Highway Administration (FHWA).

NPS Alaska has reviewed the project. We understand that this transportation project will remove 262 acres permanently from the CKNHL. We concur with the Section 4(f) *de minimus* determinations. We also concur with the *de minimus* impact finding that this project will not adversely impact the CKNHL because no archeological features were found within the project Area of Potential Effect (APE) during an archeological survey conducted by/on behalf of the lead federal agency and that the acreage to be removed from the CKNHL is less than 0.0005% of the total area of the NHL.

Both NPS Alaska's findings for Section 106 and Section 4(f) align with the findings of the Alaska State Historic Preservation Office (SHPO) on May 17, 2022.

Emily A Johnson *(she/her)*
Environmental Protection Specialist
External Review Program Coordinator
Interior Region 11 - Alaska
Home office in Valdez
Work cell: (907) 202-3258

I am a graduate of the GOAL Academy. Ask me about the program!

NPS Core Values: Integrity, Collaboration, Accountability, Respect, Engagement, Stewardship
My Core Values: Experiencing the Outdoors, Security, Integrity, Accountability, Learning, Adventure, Laughter

APPENDIX H

SECTION 106 CONSULTATION

Page

NOA C2 T 3130-1R FAA

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

NORTHERN REGION PRECONSTRUCTION

SARAH PALIN, GOVERNOR

2301 PEGER ROAD
FAIRBANKS, ALASKA 99709-5316
TELEPHONE: (907) 451-2238
TDD: (907) 451-2363
FAX: (907) 451-5103

December 21, 2007

OHA

Re: Noatak Airport Relocation
Project No. 61478
Finding of No Historic Properties Affected Pursuant to 36 CFR 800.4(d)(1)

Ms. Judith Bittner
State Historic Preservation Officer
Department of Natural Resources
Office of History and Archaeology
550 W. 7th Ave., Suite 1310
Anchorage, AK 99501-3565

No Historic Properties Affected
Alaska State Historic Preservation Officer
Date. 1-31-2008
File No.: 3130-1R FAA SL

Dear Ms. Bittner:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), is proposing to relocate the Noatak Airport. Noatak is approximately 55 miles north of Kotzebue and 70 miles north of the Arctic Circle on the west shore of the Noatak River. The existing airport is located south of the village. The proposed project site is located west of the village at approximately 67.57° North Latitude and 162.97° West Longitude (Sections 16-21 and 28-32; Township 25 North; Range 19 West of the Kateel River Meridian). A location and vicinity map are shown on Figure 1.

Alaska Native Tribal Health Consortium riverbank erosion studies indicate that the runway embankment will be encroached by the Noatak River by 2010. DOT&PF has determined that this erosion necessitates relocating the Noatak airport away from the Noatak River. Major components of the project include:

- Relocating the airport runway and facilities west of the existing airport and village.
- Constructing a two-mile access road between the village and new airport.
- Constructing a vehicle bridge across the Kuchoruk Creek.

Material for the project components is expected to come from a 256-acre gravel bar material site in the Noatak River. Construction of the project is anticipated to begin in Spring 2009.

Historic Property Identification Efforts

The Area of Potential Effect (APE) is shown on Figure 2. The APE includes the location of the proposed airport site, airport access road, Kuchoruk Creek bridge, in-river material source, and material haul routes. Many cultural and archaeological surveys have been conducted in the village of Noatak, and its surroundings. USKH, Inc., on behalf of DOT&PF, hired Charles M. Mobley & Associates to perform archaeological investigations of the APE in support of the Section 106 process for this project.

Two investigations were conducted. The first, summarized in *Oral History and Archival Research for the Noatak Airport Relocation, Noatak, Alaska* (Mobley 2006), concludes that the prevalence of wetlands at the new airport property indicates a low probability for containing archaeological sites. A winter trail used traditionally by Noatak villagers will be crossed by the new airport and/or access road, but was judged ineligible for the National Register of Historic Places (NRHP) by Mobley. The report recommends further analysis of the upland and riverbank sections of the APE.

The second archaeological investigation covers two material sites (the proposed site and one alternate site, subsequently dropped from consideration), the airport access road, new bridge location, and riverbank section of the APE, and is documented in detail in *Noatak Airport Relocation Archaeological Survey, Noatak, Alaska* (Mobley 2007). No cultural resources of significance or otherwise eligible to the NRHP were found in any of the four surveyed areas. The report further states "In summary, the Noatak Airport relocation as proposed thus far will not disturb any known cultural resources eligible to the National Register of Historic Places." Both reports have been submitted to the Alaska Office of History and Archaeology for its review and records.

[redacted]

The State Historic Preservation Office (SHPO) concurred on January 31, 2006 with a determination of "no historic properties affected" for the geotechnical sampling program to support this project (SHPO File No. 3130-1RFAA). The sampling program APE included the proposed airport location and the proposed material site.

Furthermore, the DOT&PF distributed project scoping letters to the Native Village of Noatak, Maniilaq Association, NANA Corporation, and Northwest Arctic Borough, and a Government-to-Government Consultation Initiation letter to Mr. James Adams, President of the Native Village of Noatak, in March 2006. No comments or concerns regarding historic or cultural resources were raised by these entities.

Agency Determination

Based on the two archaeological investigations, review of AHRS data, scoping efforts, and the prevalence of wetlands, DOT&PF did not find any historic properties within the project APE. Pursuant to 36 CFR 800.4(d)(1), implementing regulations of Section 106 of the National Historic Preservation Act, the DOT&PF has determined on behalf of FAA that no historic properties would be affected by the proposed project. Please direct your concurrence or comments to me at the address above. If you have any questions or need further information, please call Ryan Anderson, P.E., Engineering Manager, at (907) 451-5129.

Sincerely,

Bruce W. Campbell
Environmental Coordinator

dt

Enclosures: Figure 1–Location and Vicinity Map
Figure 2–Area of Potential Effect

cc: Ryan Anderson, P.E., Engineer Manager, DOT&PF, Northern Region
Jackson Fox, Environmental Analyst, USKH
Patricia Wagonner, Environmental Manager, USKH

Department of Transportation and Public Facilities

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Northern Region
Design and Engineering Services

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2273
Toll free: 800-451-2363
Dot.alaska.gov

In Reply Refer To:
Noatak Airport Relocation
State/Federal Project Number(s):Z614780000/Pending
Initiation of Consultation

February 21, 2019

Ms. Judith E. Bittner
State Historic Preservation Officer
Alaska Office of History and Archaeology
550 W. 7th Avenue, Suite 1310
Anchorage, AK 99501-3565

Dear Ms. Bittner,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaskan Region, Airports Division of the Federal Aviation Administration (FAA), proposes to relocate the Noatak Airport approximately 2 miles west of Noatak, AK (Noatak Airport Relocation). The existing airport and community are located 48 miles northwest of Kotzebue, and 71 miles north of the Arctic Circle. The proposed project is located at 67°33'39" North Latitude and 162°58'48" West Longitude; Sections 5, 8,16-21, 29-32, Township (T) 25, Range (R) 19W; Sections 5-7, 18-20, 29, 32, T26, R19W; Sections 4, 5, 9, 16, 20, 21, 29, 32, T27, R19W; Sections 5-7, 17-21, 28, 33, T28, R19W; Sections 7, 17, 18, 20, 21, 27, 28, 33, 34, T29, R19W; Kateel River Meridian; United States Geological Survey Quadrangle Noatak C-2 (Figure 1).

Previous consultations regarding the proposed project occurred between 2006-2008. The SHPO concurred on January 31, 2006 with a determination of "no historic properties affected" for the geotechnical sampling program to support this project (SHPO File No. 3130-IRFAA). The DOT&PF distributed project scoping letters to the Native Village of Noatak, Maniilaq Association, NANA Regional Corporation, and Northwest Arctic Borough, and a Government-to-Government Consultation Initiation letter to Mr. James Adams, President of the Native Village of Noatak, in March 2006. No comments or concerns regarding historic or cultural resources were raised by these entities. Following completion of the 2006 field investigations,

the DOT&PF submitted a finding of No Historic Properties Affected determination in December 2007, and SHPO concurred on January 31, 2008.

Since 2008 proposed project elements have changed and the Area of Potential Effect (APE) has been revised. For purposes of the National Historic Preservation Act, the DOT&PF is re-initiating this consultation with you to assist us in determining the revised APE and identifying historic properties that may be affected by the proposed project.

Project Description

The proposed project would create a safe, reliable, and cost-effective facility that provides the community with adequate access, supports the community's long-term development goals, and is consistent with current FAA safety regulations. The existing airport is threatened by Noatak River erosion, which will necessitate permanent runway closure. Consequently, there is insufficient land to address other existing airport deficiencies. Time critical airport relocation ensures continued safe and reliable air transportation for Noatak.

The proposed project includes the following features (Figures 2-3):

- Airport relocation located approximately 2 miles west of Noatak.
- Airport Access Road with overhead electrical line and new bridge at Kuchoruk Creek.
    - The access road would be approximately 2 miles long and 24 feet wide with side slopes that include safety features (e.g., signage) where required, and culverts installed to maintain drainage patterns.
    - The bridge would cross Kuchoruk Creek and be designed to accommodate high water and aufeis. Abutments would be placed on either side of the creek within the floodplain. Work may be required below ordinary high water of the creek; however no in-water work is anticipated.
- River Material Sources (South and East) with overland access roads.
    - Local gravels within the Noatak River drainage would be used for construction; excavation may occur below the water table.
    - A pioneer material source access road would accommodate safe summertime access between River Material Source (South) and the Airport Access Road. The road would be designed to prevent damage to underlying soil hydrology.
- Equipment and Materials Mobilization.
    - Equipment and materials will be transported along the existing Delong Mountain Transportation System (DMTS) from the Red Dog Mine Port approximately 40 miles inland to the proposed start of a winter snow road (Route 3).
    - Route 3 would provide overland access between the DMTS and the Airport Access Road via a 28.2-mile winter snow road. Presence of adequate snow depth would be required for winter route use.
    - Construct gravel pads for staging areas

Preliminary Area of Potential Effect

The Preliminary Area of Potential Effect (APE) is shown on Figures 2-4. The Preliminary APE includes direct-impact areas at the locations of the proposed airport site, airport access road,

Kuchoruk Creek Bridge, in-river material sources, and equipment and material haul routes. The APE will be finalized after comments are received from your agency and the consulting parties.

Identification Efforts

Many cultural and archaeological surveys have been conducted along the DMTS as well as in Noatak and its surroundings. Archaeological research began along portions of the DMTS in 1977 and has continued through the 1980s, 1990s, and 2000s to support Red Dog Mine operation and expansion (Anderson 1977; Brownell and Blake 2017; Gaines et al. 2006; Gerlach and Hall 1986; Hall 1982, 1983, 1987; McClenahan and Gibson 1990; McConnell 2005; SRBA 2011, 2012, 2013, 2014; Tremayne 2016). In 2006, Charles M. Mobley & Associates performed archaeological investigations of the APE in support of the Section 106 identification process for this project. The results of two field investigations, conducted in the spring and summer of 2006 are presented in the following paragraphs.

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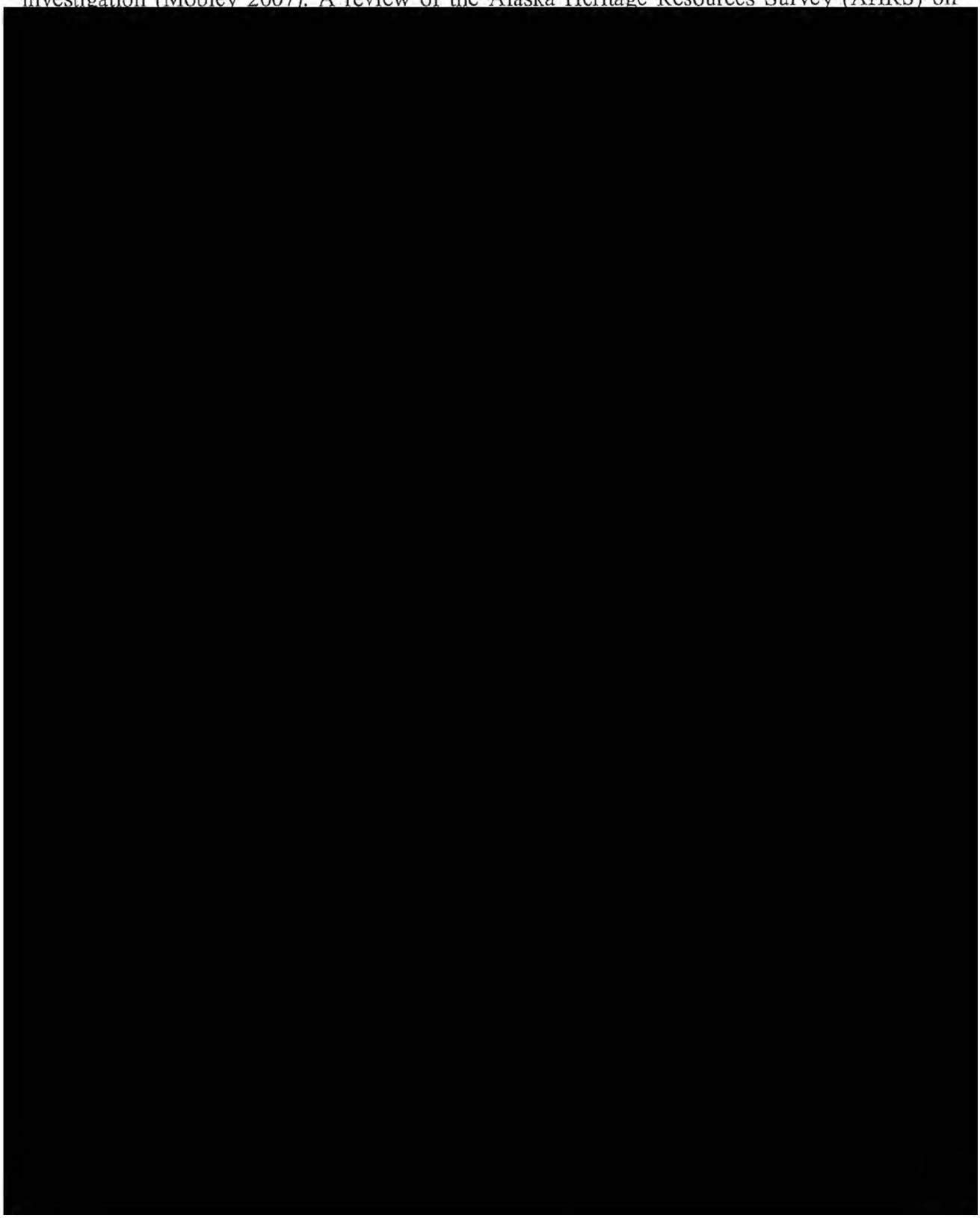

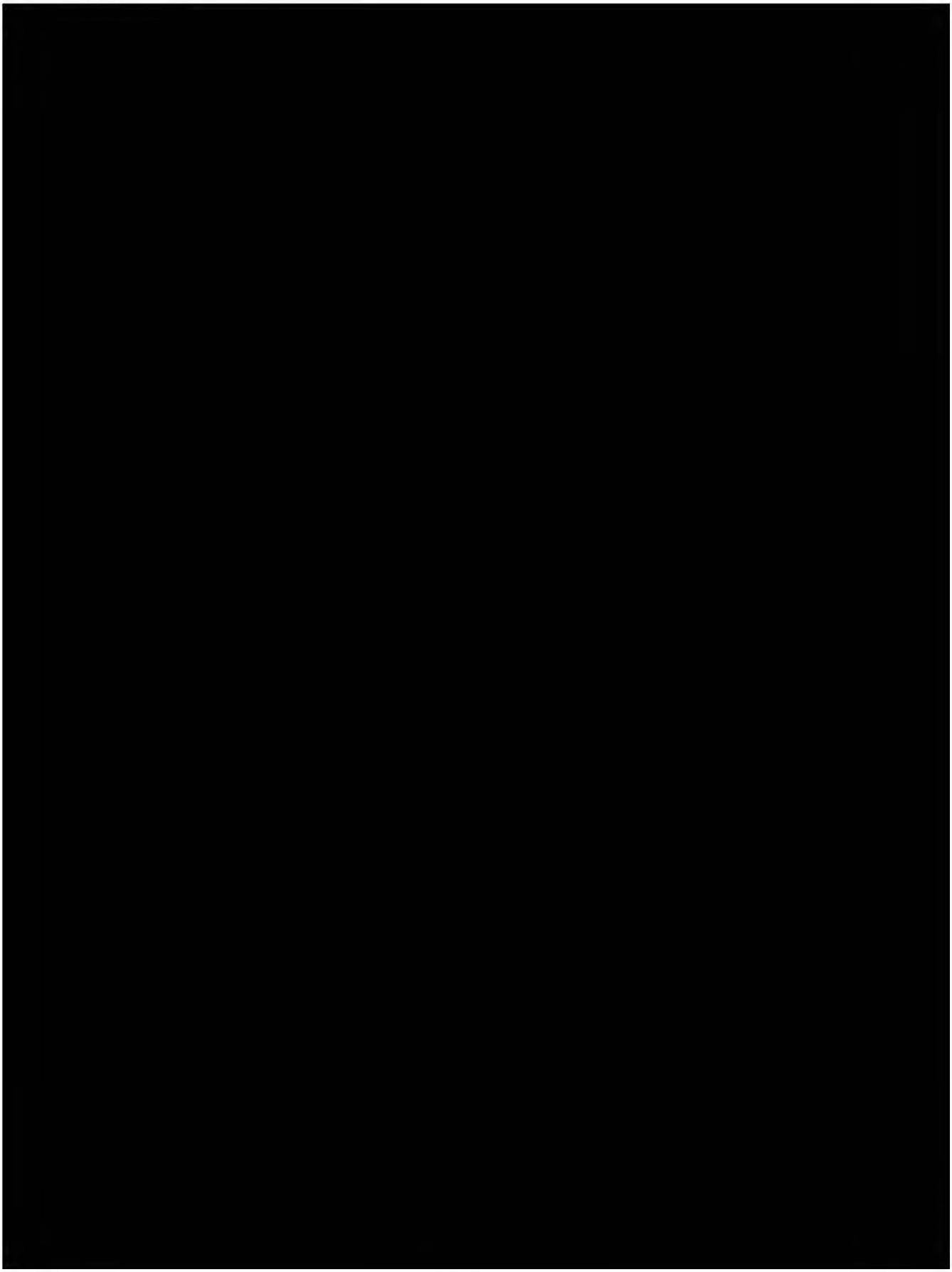

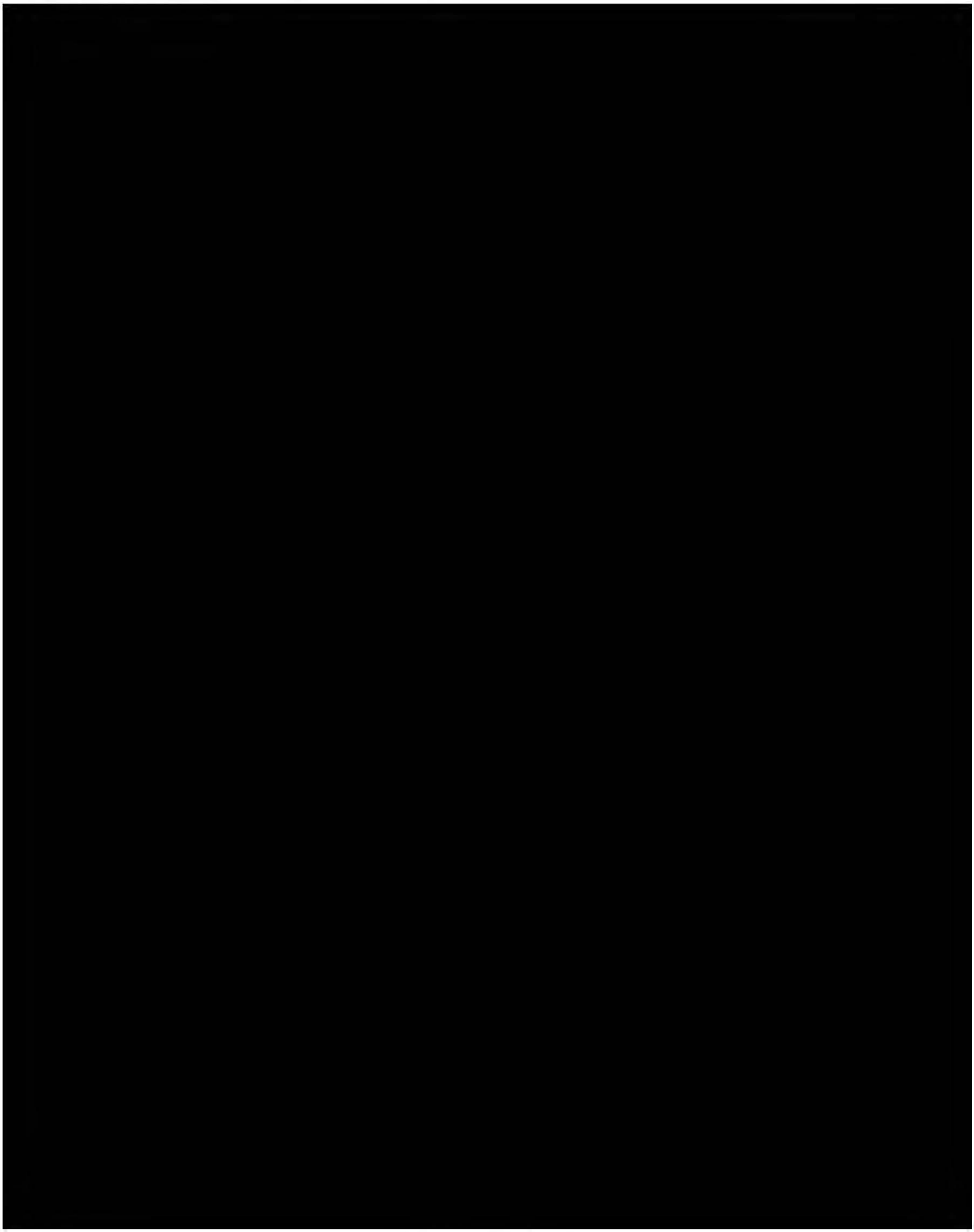

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Cultural Resource Specialist-Archaeologist (PQI)
State of Alaska DOT&PF Northern Region

Enclosures:

Figure 1: Location and Vicinity Map
Figure 2: Preliminary Area of Potential Effect
Figure 3: Land Ownership and Preliminary Area of Potential Effect
Figure 4: Cape Krusenstern National Historic Landmark & National Monument Boundary

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Kathy Price, DOT&PF, Statewide Cultural Resources Manager

Department of Transportation and Public Facilities

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Northern Region
Design and Engineering Services

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2273
Toll free: 800-451-2363
Dot.alaska.gov

In Reply Refer To:
Noatak Airport Relocation
State/Federal Project Number(s):Z614780000/Pending
Initiation of Consultation

February 21, 2019

Norman Monroe, President
Native Village of Noatak
PO Box 89
Noatak, AK 99761

Dear Mr. Monroe,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaskan Region, Airports Division of the Federal Aviation Administration (FAA), proposes to relocate the Noatak Airport approximately 2 miles west of Noatak, AK (Noatak Airport Relocation). The existing airport and community are located 48 miles northwest of Kotzebue, and 71 miles north of the Arctic Circle. The proposed project is located at 67°33'39" North Latitude and 162°58'48" West Longitude; Sections 5, 8,16-21, 29-32, Township (T) 25, Range (R) 19W; Sections 5-7, 18-20, 29, 32, T26, R19W; Sections 4, 5, 9, 16, 20, 21, 29, 32, T27, R19W; Sections 5-7, 17-21, 28, 33, T28, R19W; Sections 7, 17, 18, 20, 21, 27, 28, 33, 34, T29, R19W; Kateel River Meridian; United States Geological Survey Quadrangle Noatak C-2 (Figure 1).

Previous consultations regarding the proposed project occurred between 2006-2008. The SHPO concurred on January 31, 2006 with a determination of "no historic properties affected" for the geotechnical sampling program to support this project (SHPO File No. 3130-IRFAA). The DOT&PF distributed project scoping letters to the Native Village of Noatak, Maniilaq Association, NANA Regional Corporation, and Northwest Arctic Borough, and a Government-to-Government Consultation Initiation letter to Mr. James Adams, President of the Native Village of Noatak, in March 2006. No comments or concerns regarding historic or cultural resources were raised by these entities. Following completion of the 2006 field investigations,

the DOT&PF submitted a finding of No Historic Properties Affected determination in December 2007, and SHPO concurred on January 31, 2008.

Since 2008 proposed project elements have changed and the Area of Potential Effect (APE) has been revised. For purposes of the National Historic Preservation Act, the DOT&PF is re-initiating this consultation with you to assist us in determining the revised APE and identifying historic properties that may be affected by the proposed project.

Project Description

The proposed project would create a safe, reliable, and cost-effective facility that provides the community with adequate access, supports the community's long-term development goals, and is consistent with current FAA safety regulations. The existing airport is threatened by Noatak River erosion, which will necessitate permanent runway closure. Consequently, there is insufficient land to address other existing airport deficiencies. Time critical airport relocation ensures continued safe and reliable air transportation for Noatak.

The proposed project includes the following features (Figures 2-3):

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    - The access road would be approximately 2 miles long and 24 feet wide with side slopes that include safety features (e.g., signage) where required, and culverts installed to maintain drainage patterns.
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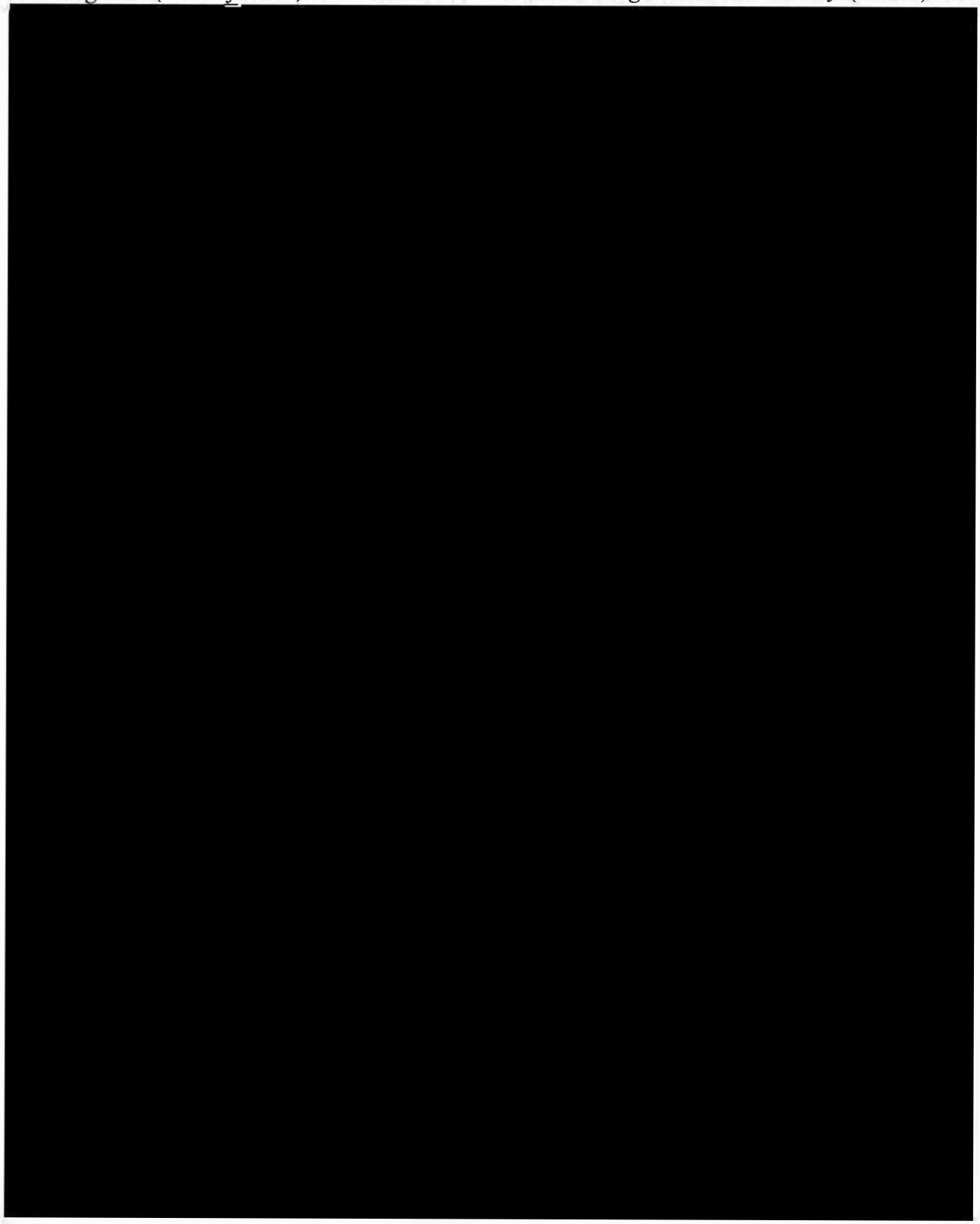

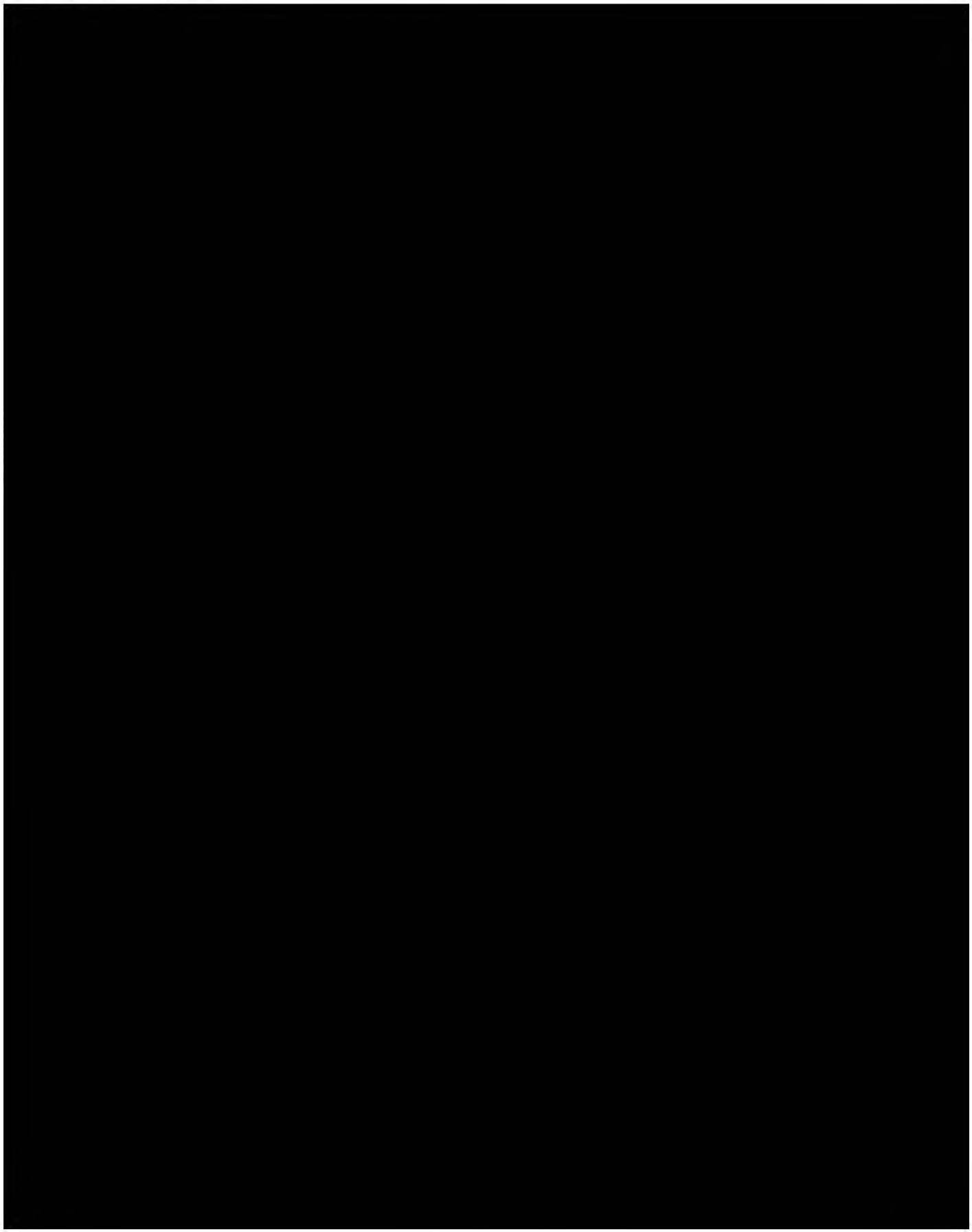

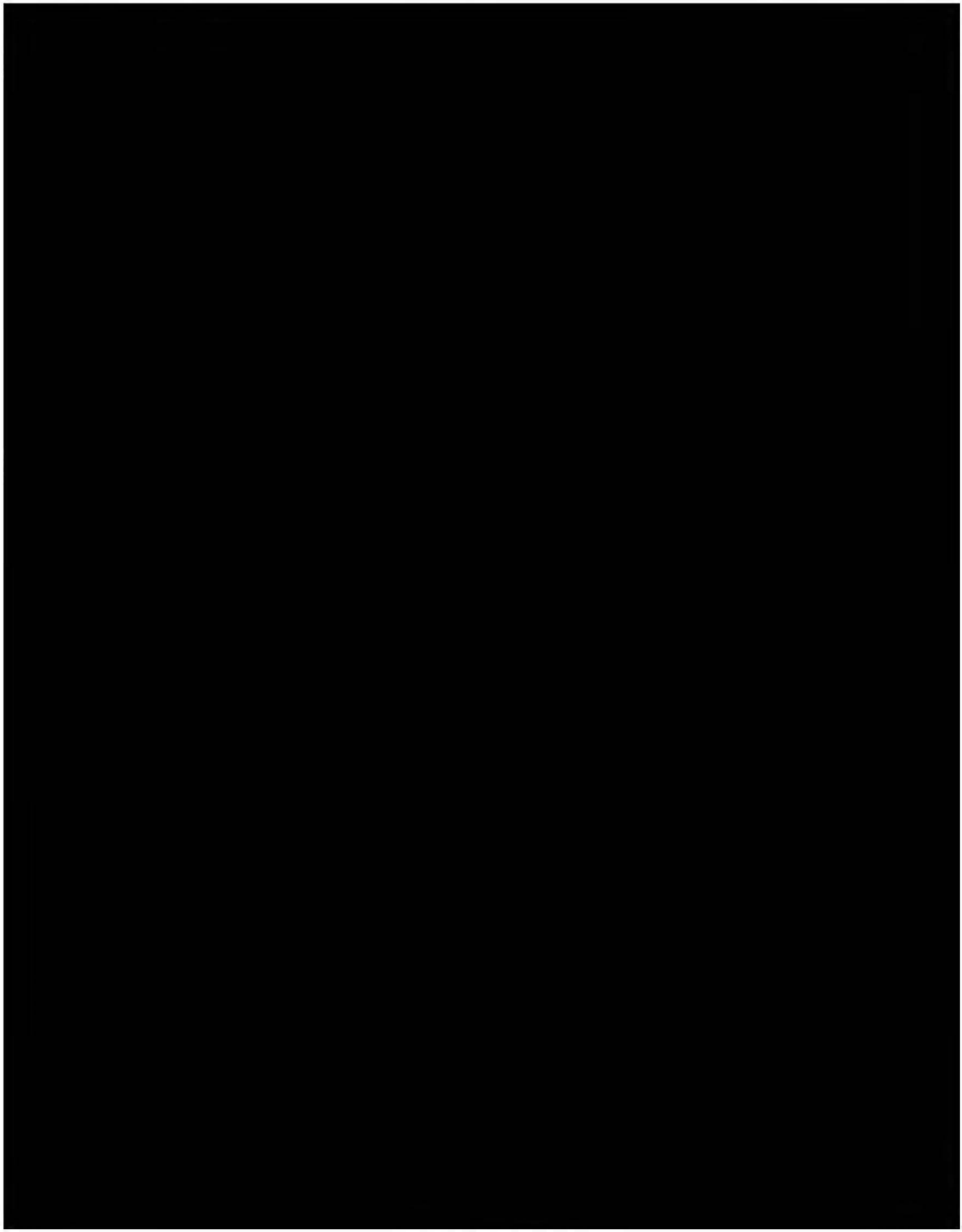

[redacted]

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In Reply Refer To:
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Initiation of Consultation

February 21, 2019

Lowell Sage Jr., President
Native Village of Kivalina
PO Box 50051
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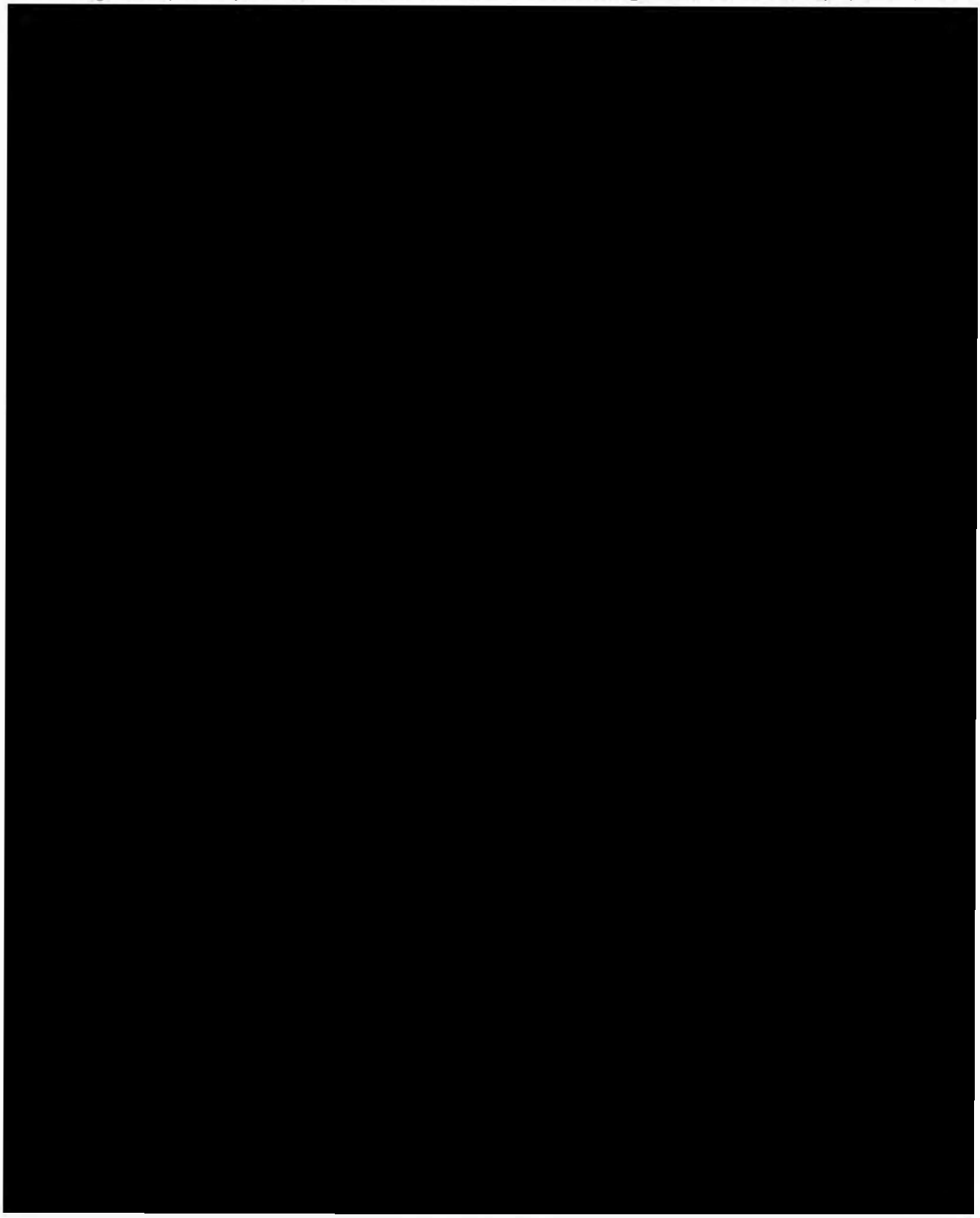

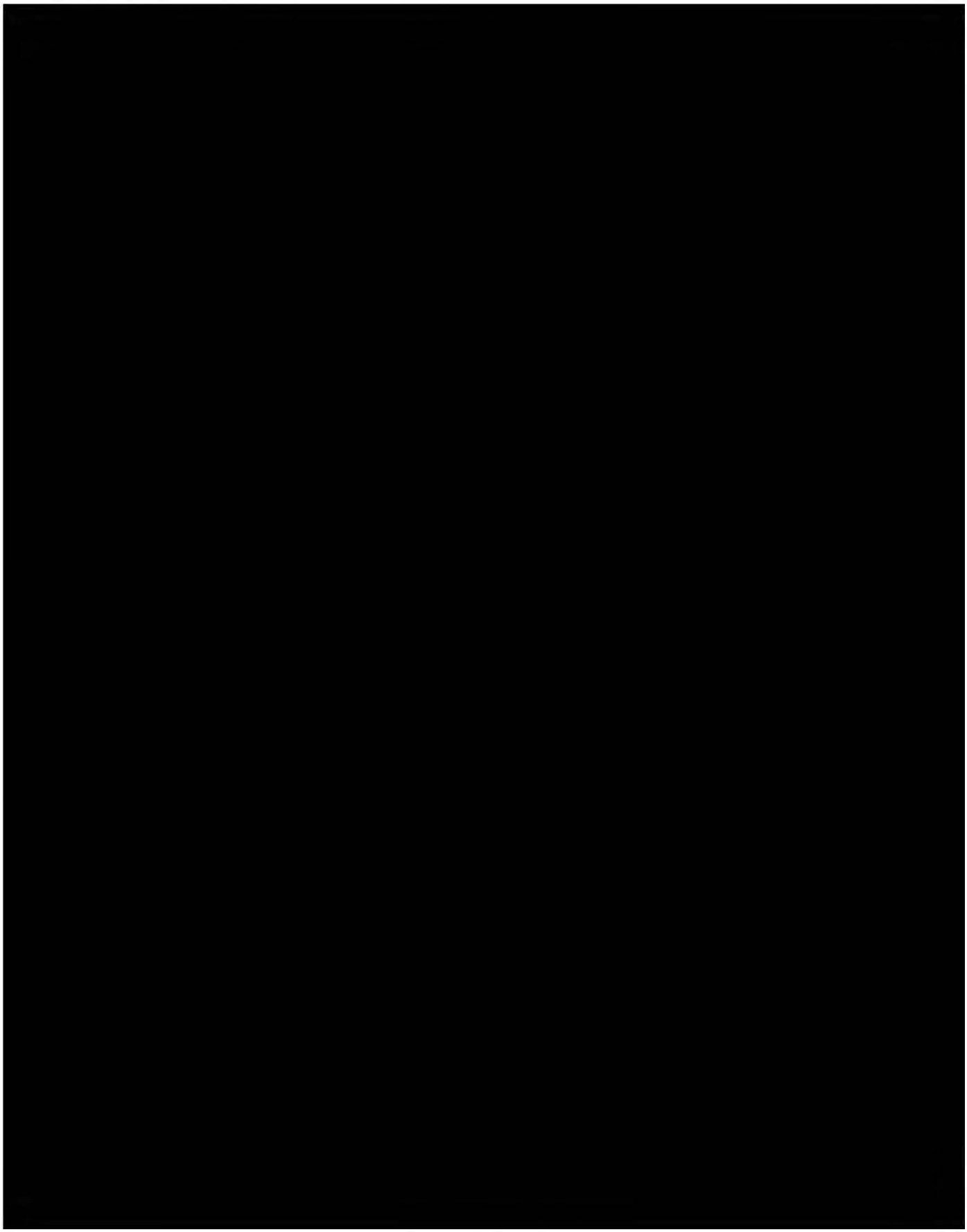

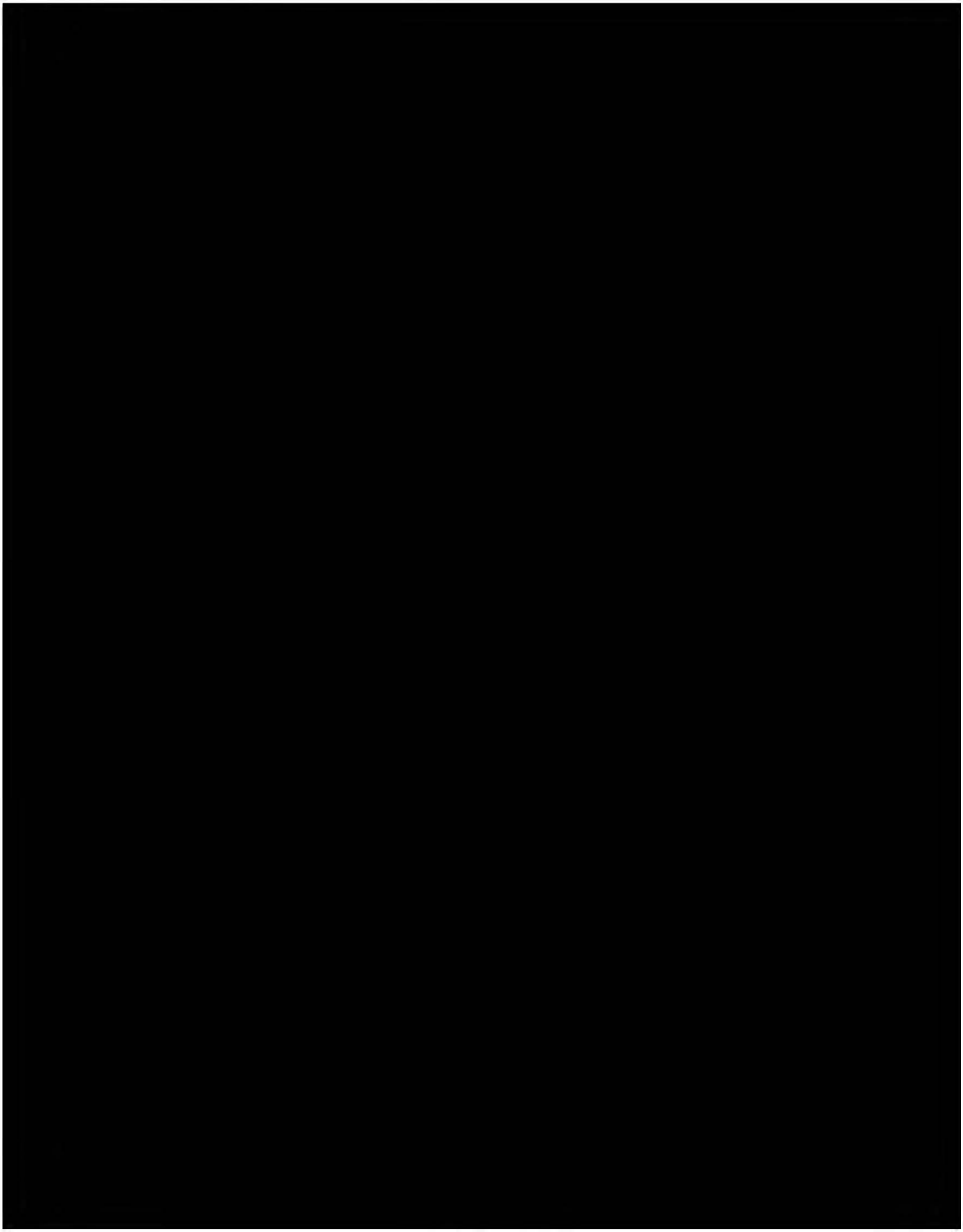

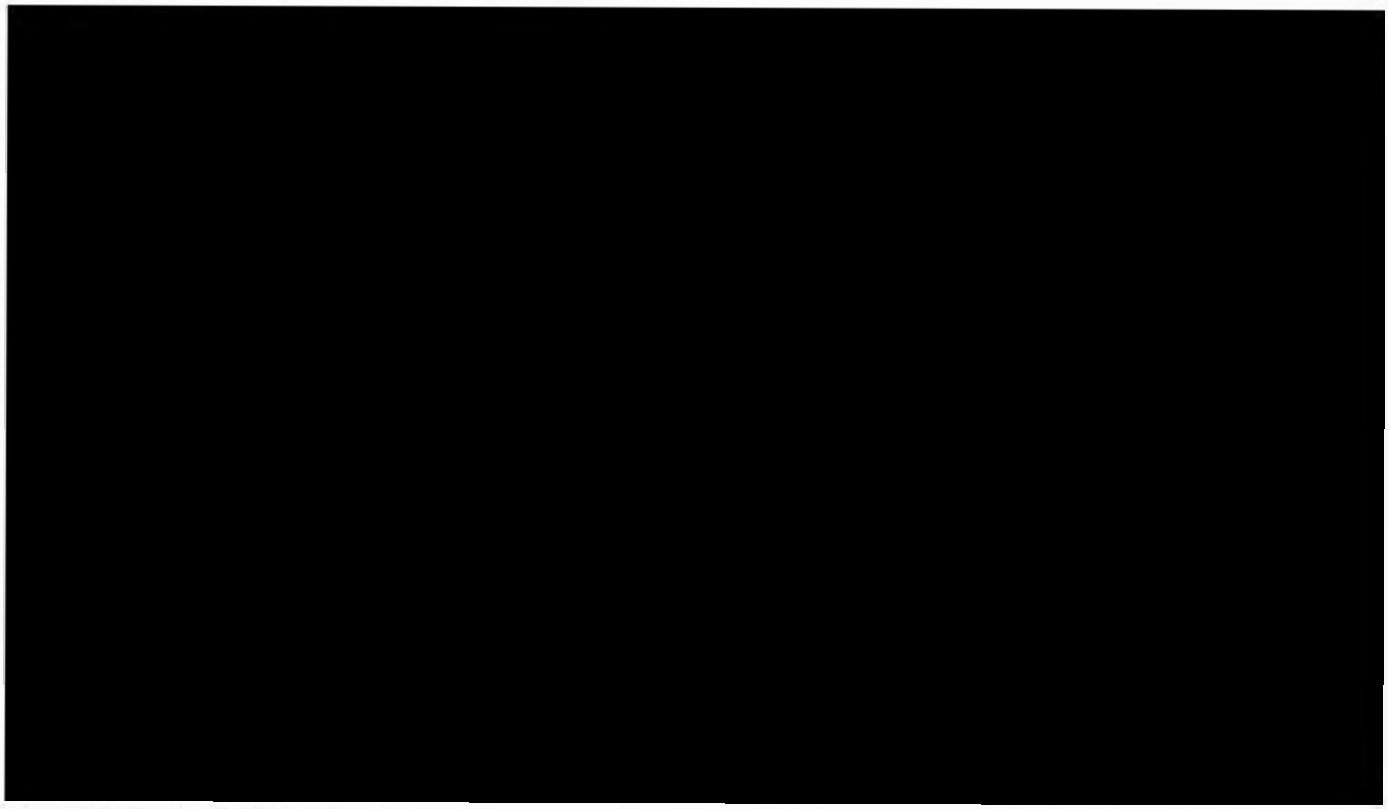

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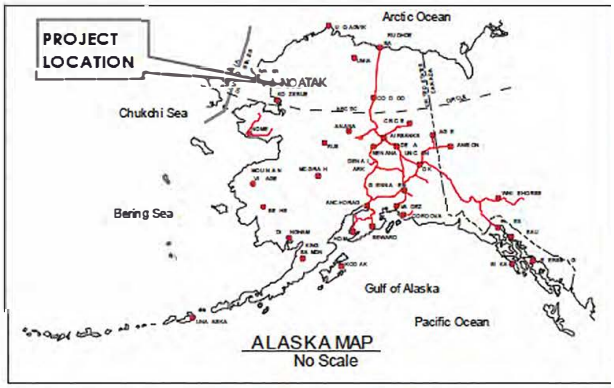

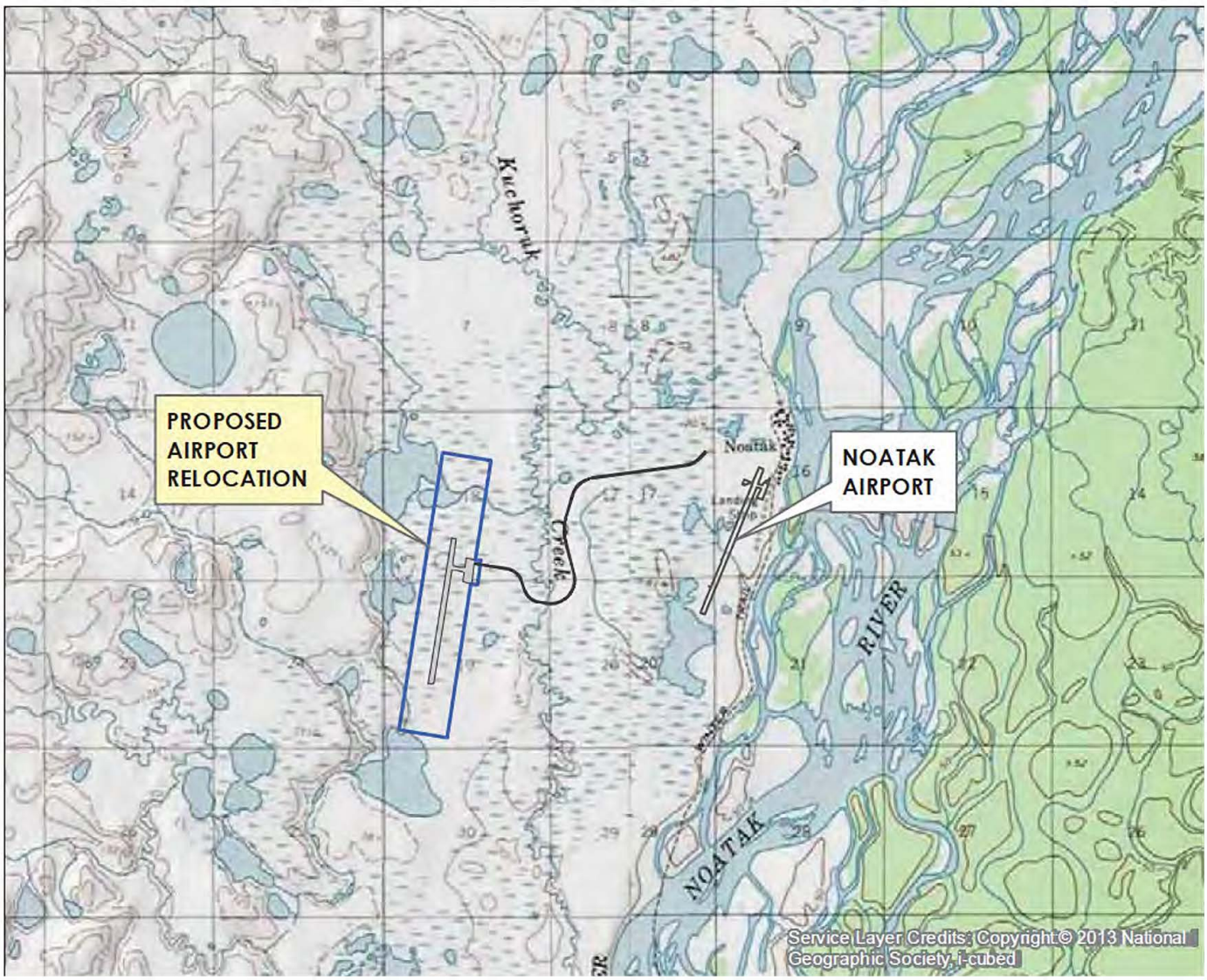

Project Origin: City of Noatak
Kotzebue Recording District,
T25, R19W, Sections 5,8,16-21, 29-32
T26, R19W, Sections 5-7, 18-20, 29, 32
T27, R19W, Sections 4, 5, 9, 16, 20, 21, 29, 32
T28, R19W, Sections 5-7, 17-21, 28, 33
T29, R19W, Sections 7, 17, 18, 20, 21, 27, 28, 33, 34
Kateel River Meridian

0 0.5 1 2 Miles
1:63,360 (at original document size of 8.5x11)

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Location & Vicinity Map

DATE: February, 2019 | FIGURE 1

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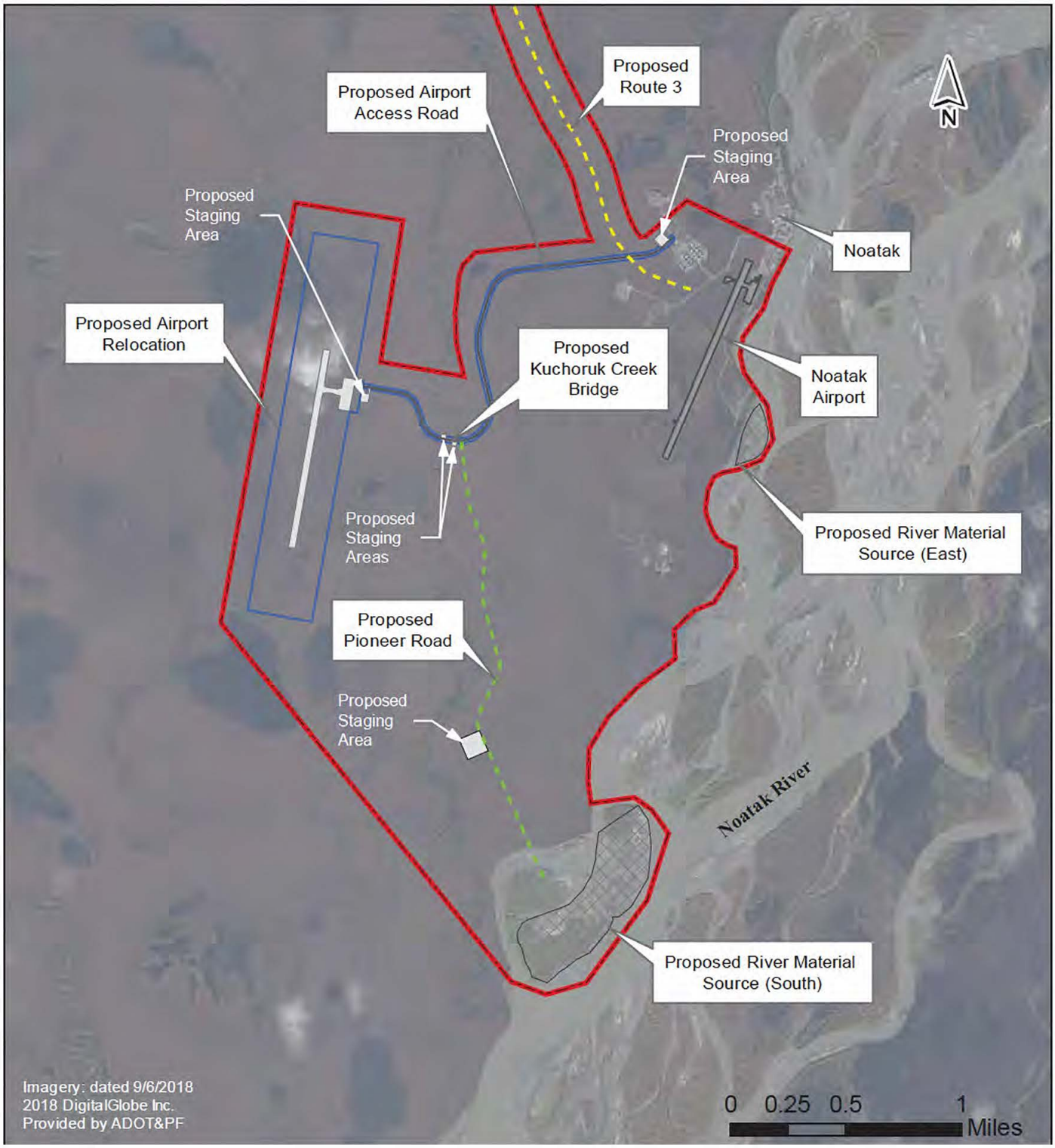


LEGEND

- Preliminary Area of Potential Effect (APE)
- Proposed Airport Property
- Proposed Runway & Apron
- Proposed Winter Snow Road (Route 3)
- Proposed Pioneer Road

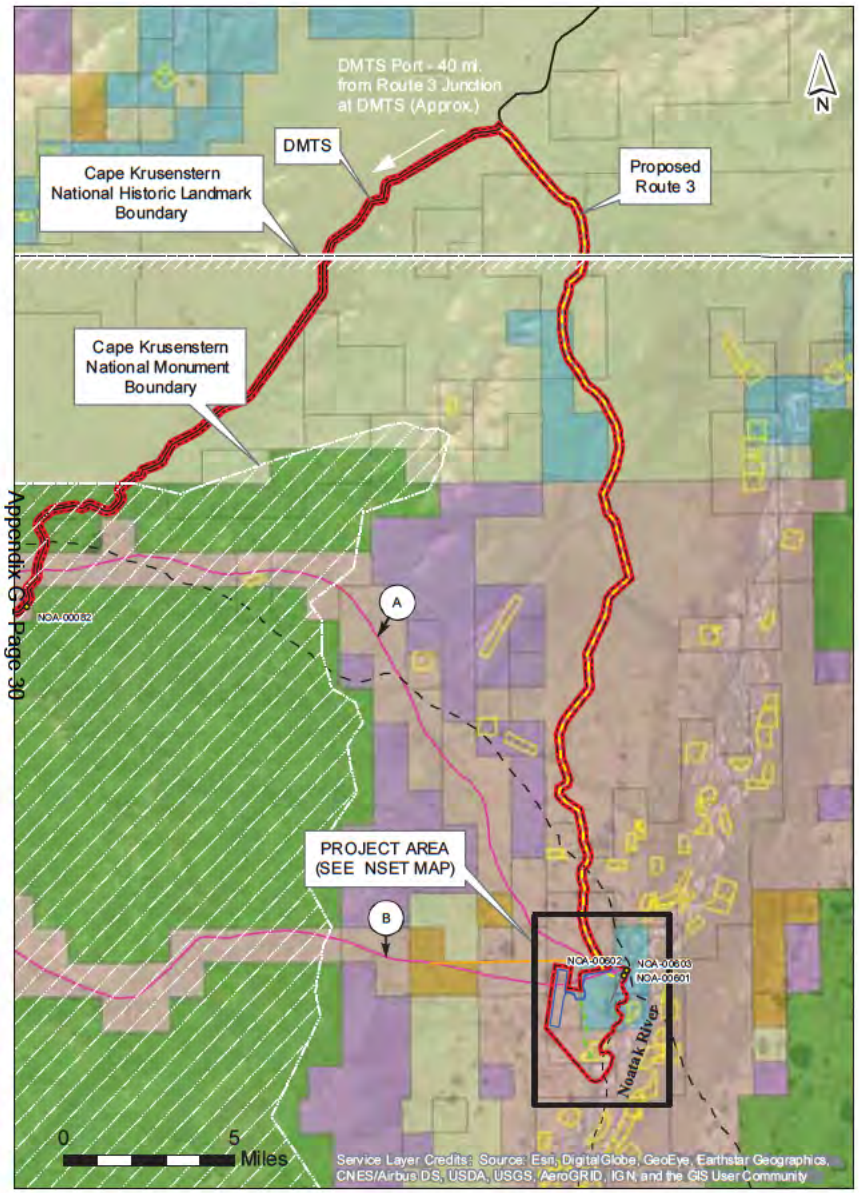
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

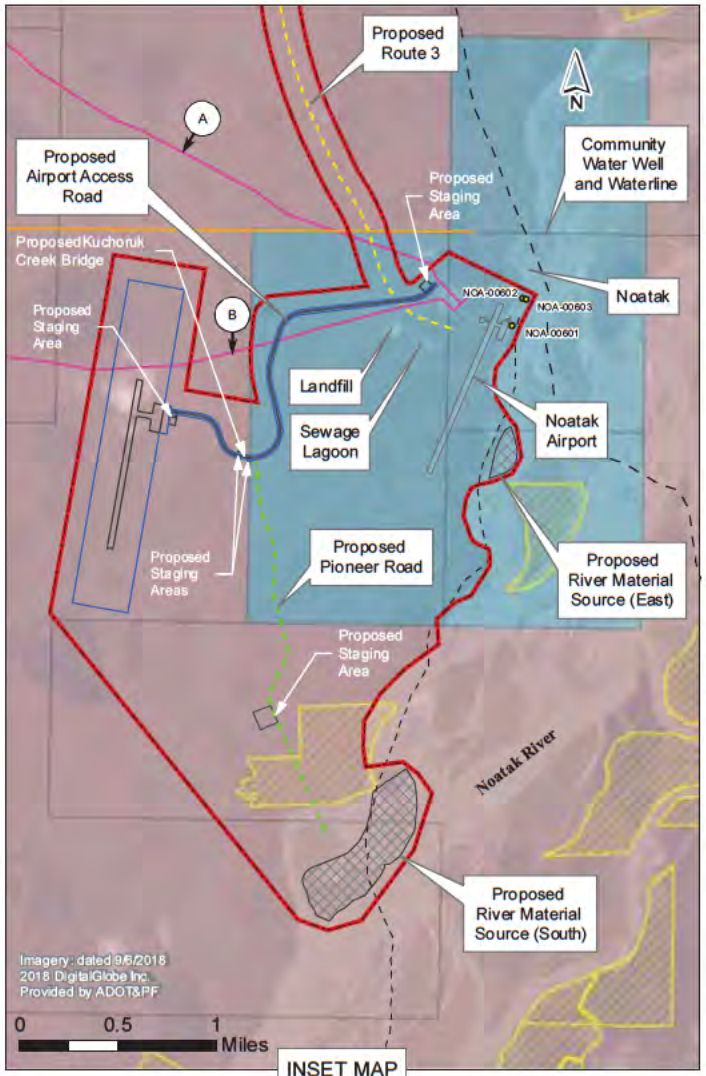
NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Preliminary APE

DATE: February, 2019 | FIGURE 2

\\2047059000\GIS\mxd\Section 106\2047059000_Sec106_Fig-02_APE_.mxd Revised: 2019-02-12 By: cpannone





LEGEND

- Preliminary Area of Potential Effect (APE)
- Proposed Airport Property
- Proposed Runway & Apron
- Proposed Airport Access
- Proposed Winter Snow Road (Route 3)
- Proposed Pioneer Road
- National Park Service Easements
- 17(b) Easement
- NAB Winter Trail
- Kotzebue - Noatak Trail (RS2477 Trail)
- Alaska Heritage Resources Survey Site

LAND OWNERSHIP

- BLM
- National Park Service
- Native Corporation
- Other Private or Municipal
- State
- State and Native
- Native Allotment

Notes and Citations

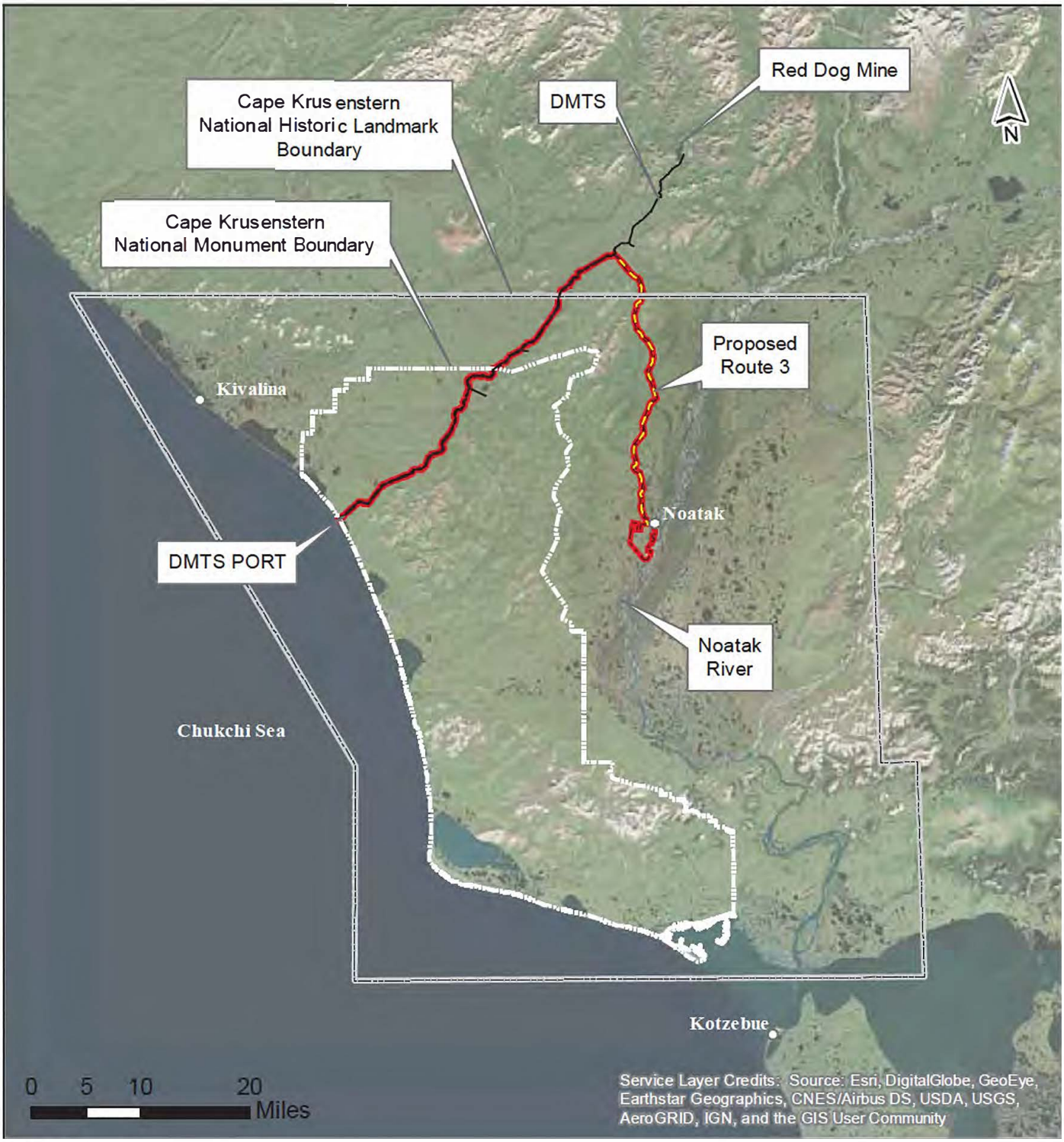
1. Coordinate System: NAD 1983 StatePlane Alaska 7 FIPS 5007 Feet
2. Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Orthoimagery: Noatak 2016 SID.
3. Land Status Data Source: Originator: Alaska Department of Natural Resources, Information Resource Management, Title: General Land Status - October 2017 - All Attributes - Clipped to 1:63,360 Coastline (EPSG 3338 NAD83 Alaska Albers).

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Land Ownership and Preliminary APE

DATE: February, 2019 | FIGURE 3



LEGEND

- Preliminaty Area of Potential Effect (APE)
- DeLong Mountain Transportation System (DMTS)
- Proposed Winter Snow Road (Route 3)

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Cape Krusenstern National Historic Landmark

DATE: February, 2019 | FIGURE 4

U:\2047059000\GIS\mxd\Section 106\2047059000_Sec106_Fig-04_Cape Krusenstern NHL.mxd Revised: 2019-02-11 By: cpannone

Department of Transportation and Public Facilities

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Northern Region
Design and Engineering Services

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2273
Toll free: 800-451-2363
Dot.alaska.gov

In Reply Refer To:
Noatak Airport Relocation
State/Federal Project Number(s):Z614780000/Pending
Initiation of Consultation

February 21, 2019

Honorable Austin Swan Sr., Mayor
City of Kivalina
PO Box 50079
Kivalina, AK 99750

Dear Mayor Swan,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaskan Region, Airports Division of the Federal Aviation Administration (FAA), proposes to relocate the Noatak Airport approximately 2 miles west of Noatak, AK (Noatak Airport Relocation). The existing airport and community are located 48 miles northwest of Kotzebue, and 71 miles north of the Arctic Circle. The proposed project is located at 67°33'39" North Latitude and 162°58'48" West Longitude; Sections 5, 8,16-21, 29-32, Township (T) 25, Range (R) 19W; Sections 5-7, 18-20, 29, 32, T26, R19W; Sections 4, 5, 9, 16, 20, 21, 29, 32, T27, R19W; Sections 5-7, 17-21, 28, 33, T28, R19W; Sections 7, 17, 18, 20, 21, 27, 28, 33, 34, T29, R19W; Kateel River Meridian; United States Geological Survey Quadrangle Noatak C-2 (Figure 1).

Previous consultations regarding the proposed project occurred between 2006-2008. The SHPO concurred on January 31, 2006 with a determination of "no historic properties affected" for the geotechnical sampling program to support this project (SHPO File No. 3130-IRFAA). The DOT&PF distributed project scoping letters to the Native Village of Noatak, Maniilaq Association, NANA Regional Corporation, and Northwest Arctic Borough, and a Government-to-Government Consultation Initiation letter to Mr. James Adams, President of the Native Village of Noatak, in March 2006. No comments or concerns regarding historic or cultural resources were raised by these entities. Following completion of the 2006 field investigations,

the DOT&PF submitted a finding of No Historic Properties Affected determination in December 2007, and SHPO concurred on January 31, 2008.

Since 2008 proposed project elements have changed and the Area of Potential Effect (APE) has been revised. For purposes of the National Historic Preservation Act, the DOT&PF is re-initiating this consultation with you to assist us in determining the revised APE and identifying historic properties that may be affected by the proposed project.

Project Description

The proposed project would create a safe, reliable, and cost-effective facility that provides the community with adequate access, supports the community's long-term development goals, and is consistent with current FAA safety regulations. The existing airport is threatened by Noatak River erosion, which will necessitate permanent runway closure. Consequently, there is insufficient land to address other existing airport deficiencies. Time critical airport relocation ensures continued safe and reliable air transportation for Noatak.

The proposed project includes the following features (Figures 2-3):

- Airport relocation located approximately 2 miles west of Noatak.
- Airport Access Road with overhead electrical line and new bridge at Kuchoruk Creek.
    - The access road would be approximately 2 miles long and 24 feet wide with side slopes that include safety features (e.g., signage) where required, and culverts installed to maintain drainage patterns.
    - The bridge would cross Kuchoruk Creek and be designed to accommodate high water and aufeis. Abutments would be placed on either side of the creek within the floodplain. Work may be required below ordinary high water of the creek; however no in-water work is anticipated.
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    - A pioneer material source access road would accommodate safe summertime access between River Material Source (South) and the Airport Access Road. The road would be designed to prevent damage to underlying soil hydrology.
- Equipment and Materials Mobilization.
    - Equipment and materials will be transported along the existing Delong Mountain Transportation System (DMTS) from the Red Dog Mine Port approximately 40 miles inland to the proposed start of a winter snow road (Route 3).
    - Route 3 would provide overland access between the DMTS and the Airport Access Road via a 28.2-mile winter snow road. Presence of adequate snow depth would be required for winter route use.
    - Construct gravel pads for staging areas

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The Preliminary Area of Potential Effect (APE) is shown on Figures 2-4. The Preliminary APE includes direct-impact areas at the locations of the proposed airport site, airport access road,

Kuchoruk Creek Bridge, in-river material sources, and equipment and material haul routes. The APE will be finalized after comments are received from your agency and the consulting parties.

Identification Efforts

Many cultural and archaeological surveys have been conducted along the DMTS as well as in Noatak and its surroundings. Archaeological research began along portions of the DMTS in 1977 and has continued through the 1980s, 1990s, and 2000s to support Red Dog Mine operation and expansion (Anderson 1977; Brownell and Blake 2017; Gaines et al. 2006; Gerlach and Hall 1986; Hall 1982, 1983, 1987; McClenahan and Gibson 1990; McConnell 2005; SRBA 2011, 2012, 2013, 2014; Tremayne 2016). In 2006, Charles M. Mobley & Associates performed archaeological investigations of the APE in support of the Section 106 identification process for this project. The results of two field investigations, conducted in the spring and summer of 2006 are presented in the following paragraphs.

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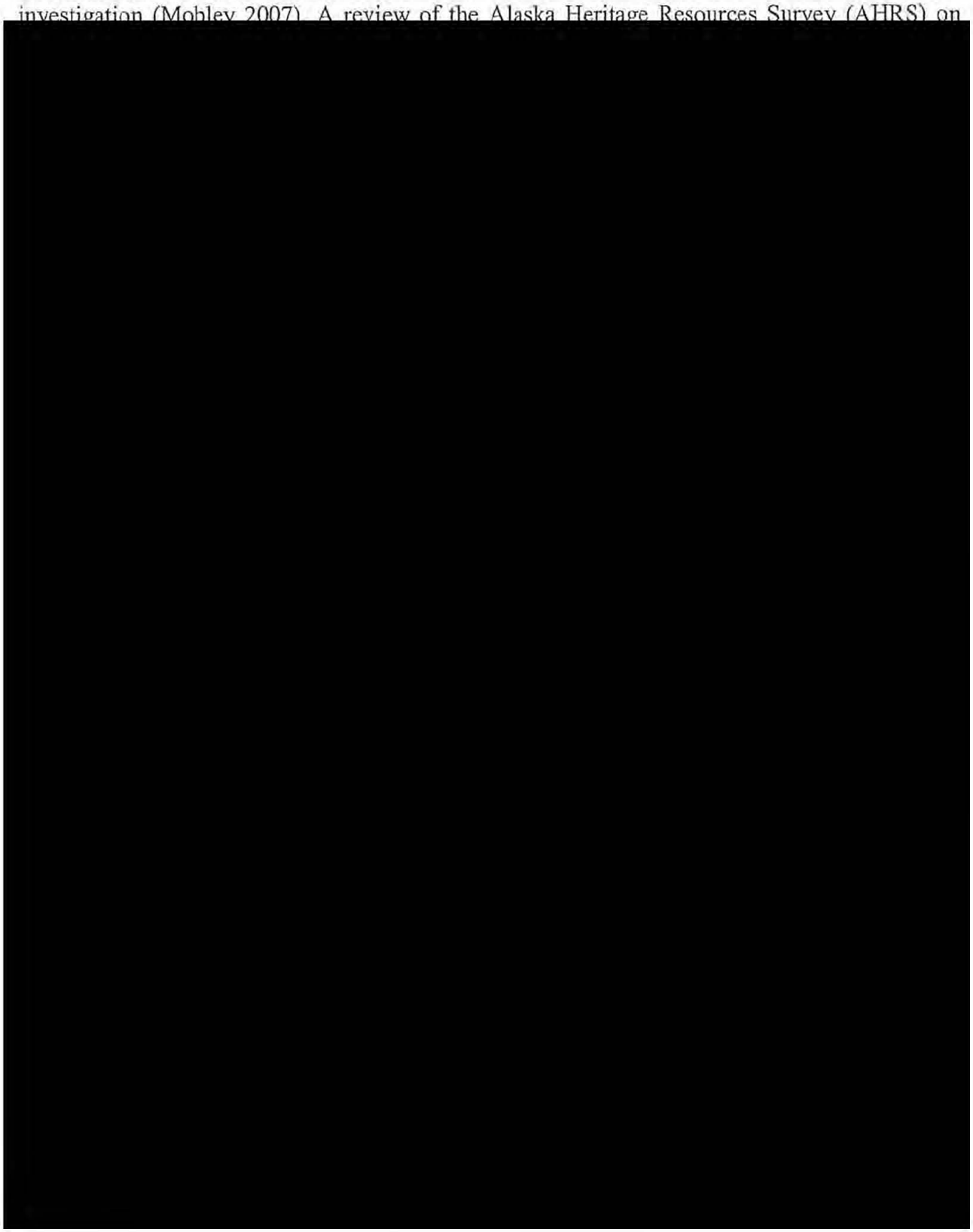

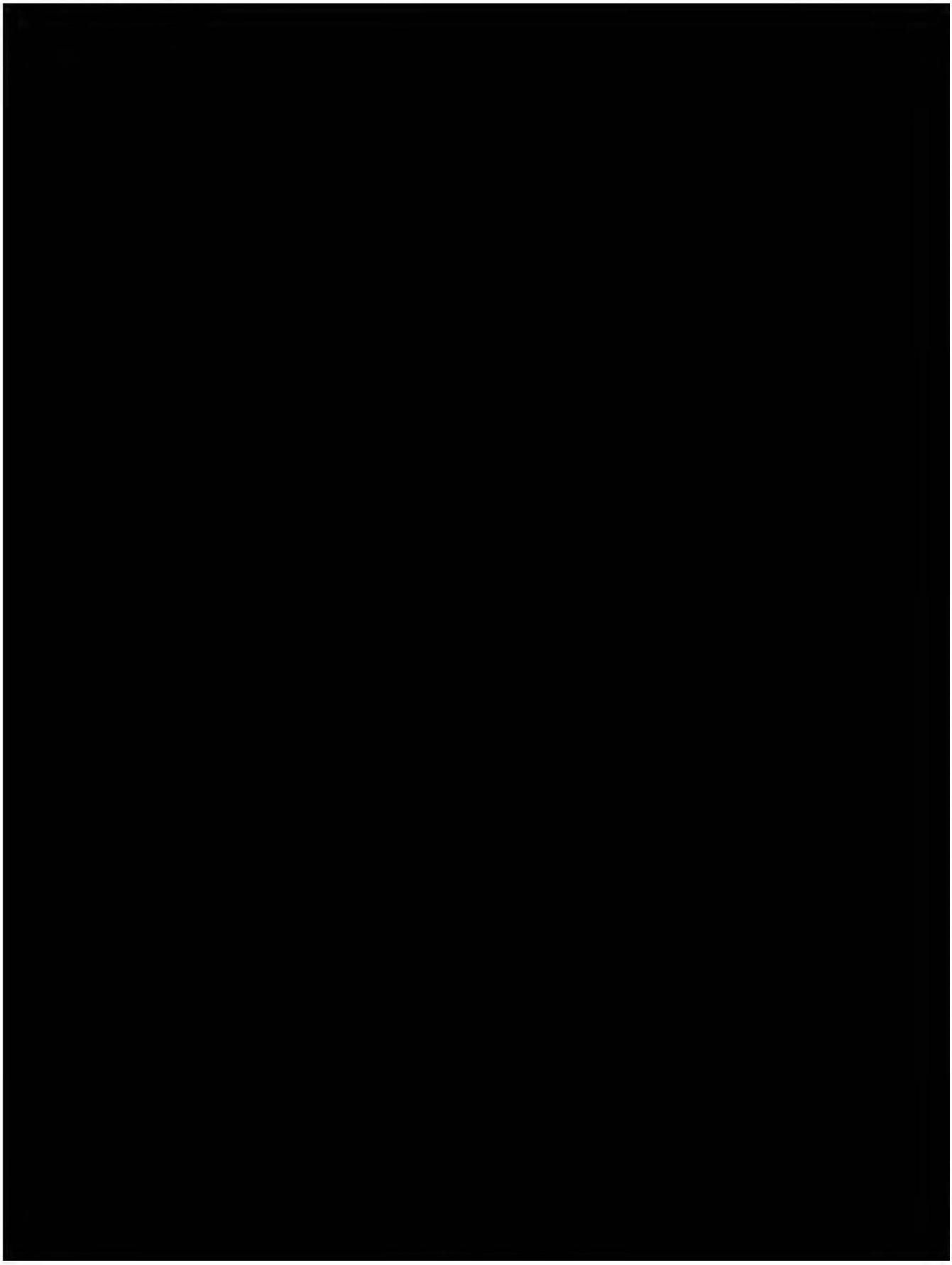

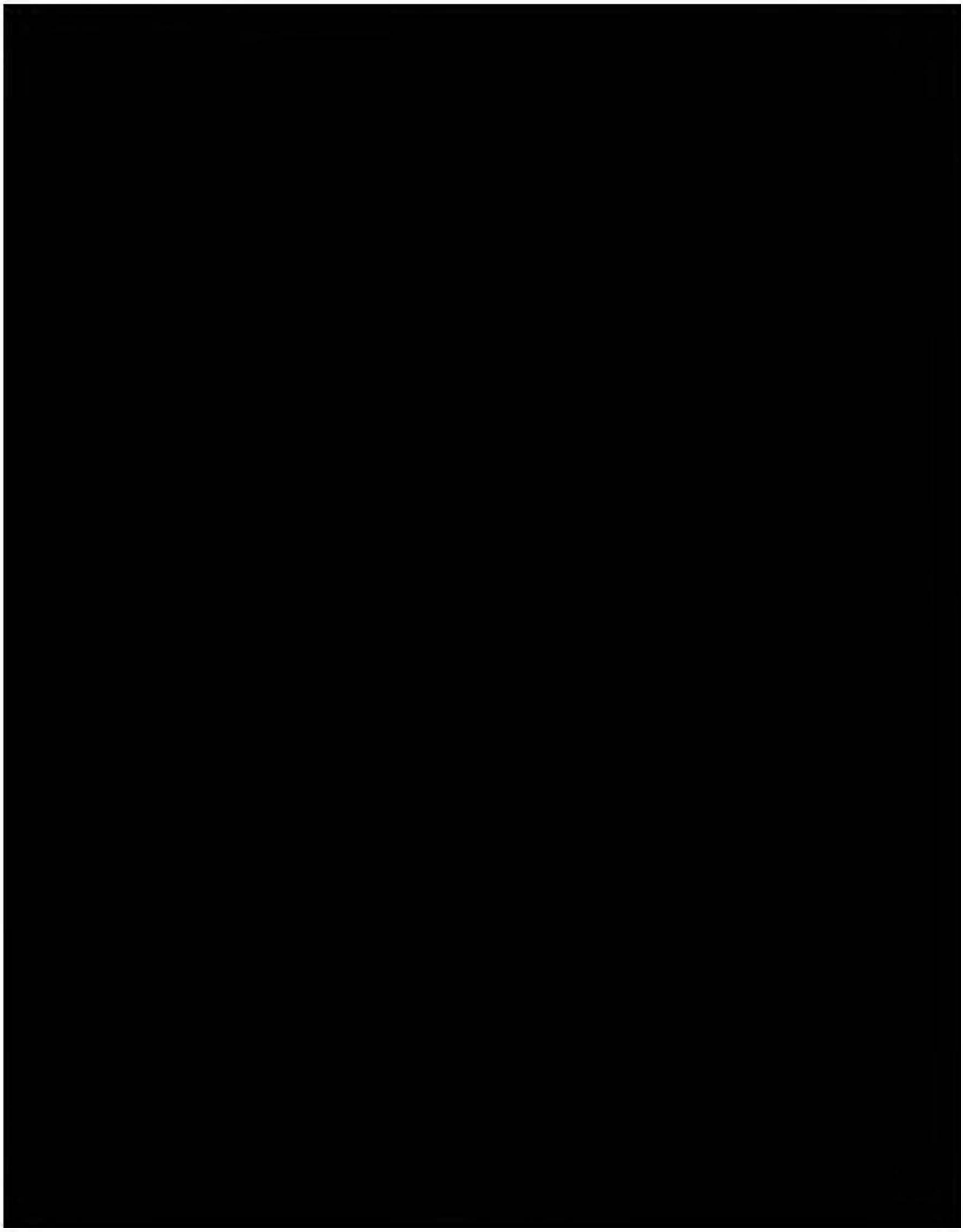

[redacted]

Consultation Efforts

On behalf of FAA, the DOT&PF has identified the following potentially interested parties to initiate consultation with regarding this project: the State Historic Preservation Officer (SHPO); the National Park Service (NPS); the Native Village of Kivalina; the City of Kivalina; the Native Village of Noatak; NANA Regional Corporation; Maniilaq Association; the Northwest Arctic Borough; NPS-Western Arctic National Parklands; and the Bureau of Indian Affairs (BIA).

If you have questions or comments related to this proposed project, or would like to inform us of places of traditional religious and cultural importance may be impacted by the proposed project, I can be reached at the address above, by telephone at 907-451-5293, or by e-mail at *thomas.gamza@alaska.gov*.

Your timely response will greatly assist us in incorporating your concerns into project development. For that purpose, we respectfully request that you respond within thirty days of your receipt of this correspondence.

Sincerely,

Thomas A. Gamza
Cultural Resource Specialist-Archaeologist (PQI)
State of Alaska DOT&PF Northern Region

Enclosures:

Figure 1: Location and Vicinity Map
Figure 2: Preliminary Area of Potential Effect
Figure 3: Land Ownership and Preliminary Area of Potential Effect
Figure 4: Cape Krusenstern National Historic Landmark & National Monument Boundary

Electronic cc w/ enclosures:

Jack Gilbertsen, FAA, Alaska Region, Regional Environmental Manager
Melissa Goldstein, DOT&PF Statewide Environmental NEPA Manager
Melissa Jensen, DOT&PF, Northern Region, Environmental Impact Analyst
Christopher Johnston, P.E., DOT&PF Northern Region, Project Manager
Brett Nelson, DOT&PF Northern Region, Regional Environmental Manager
Kathy Price, DOT&PF, Statewide Cultural Resources Manager

Department of Transportation and Public Facilities

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Northern Region
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In Reply Refer To:
Noatak Airport Relocation
State/Federal Project Number(s):Z614780000/Pending
Initiation of Consultation

February 21, 2019

Bert Frost, Regional Director
Alaska Regional Office
National Park Service
240 West 5th Avenue, Suite 114
Anchorage, AK 99501

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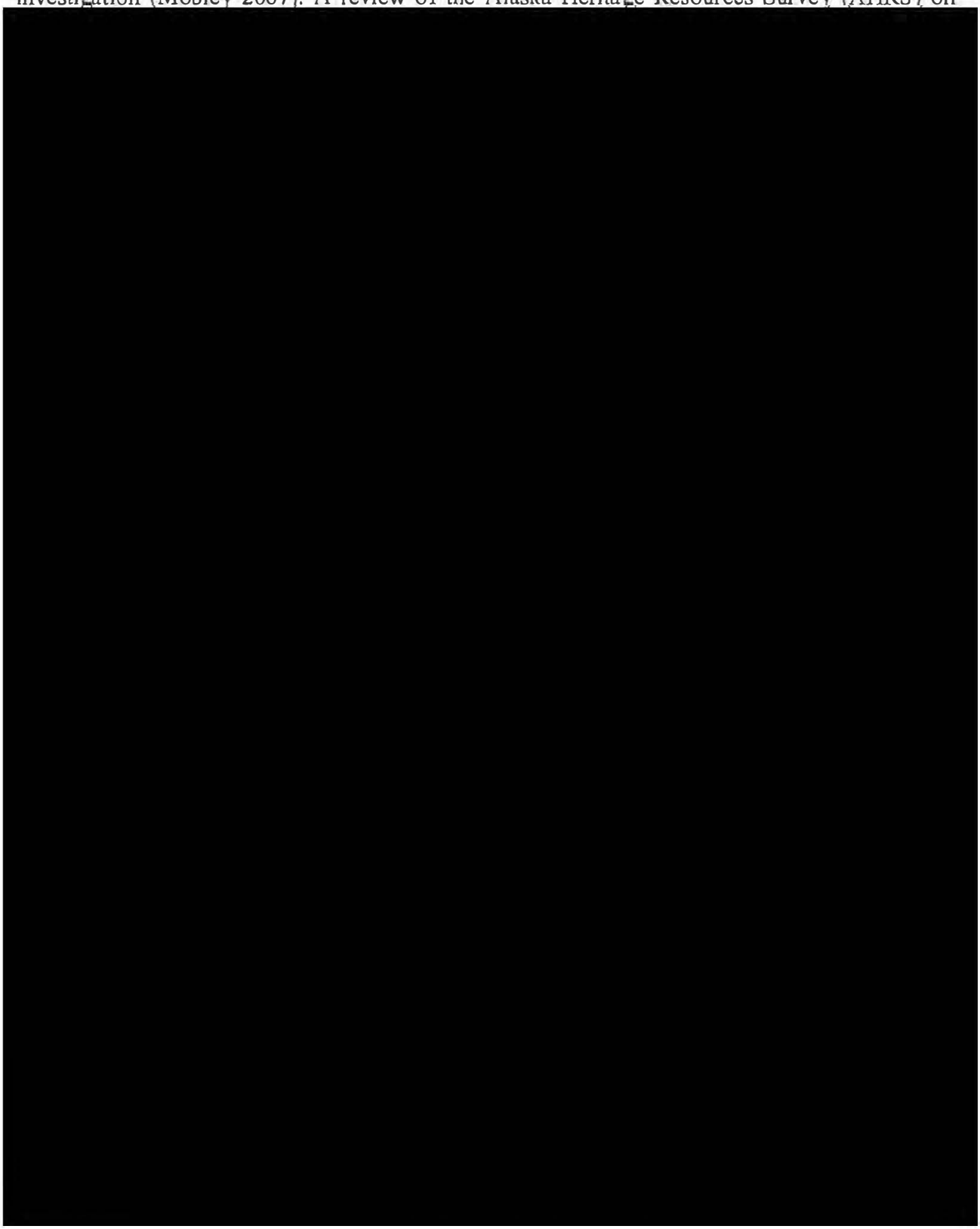

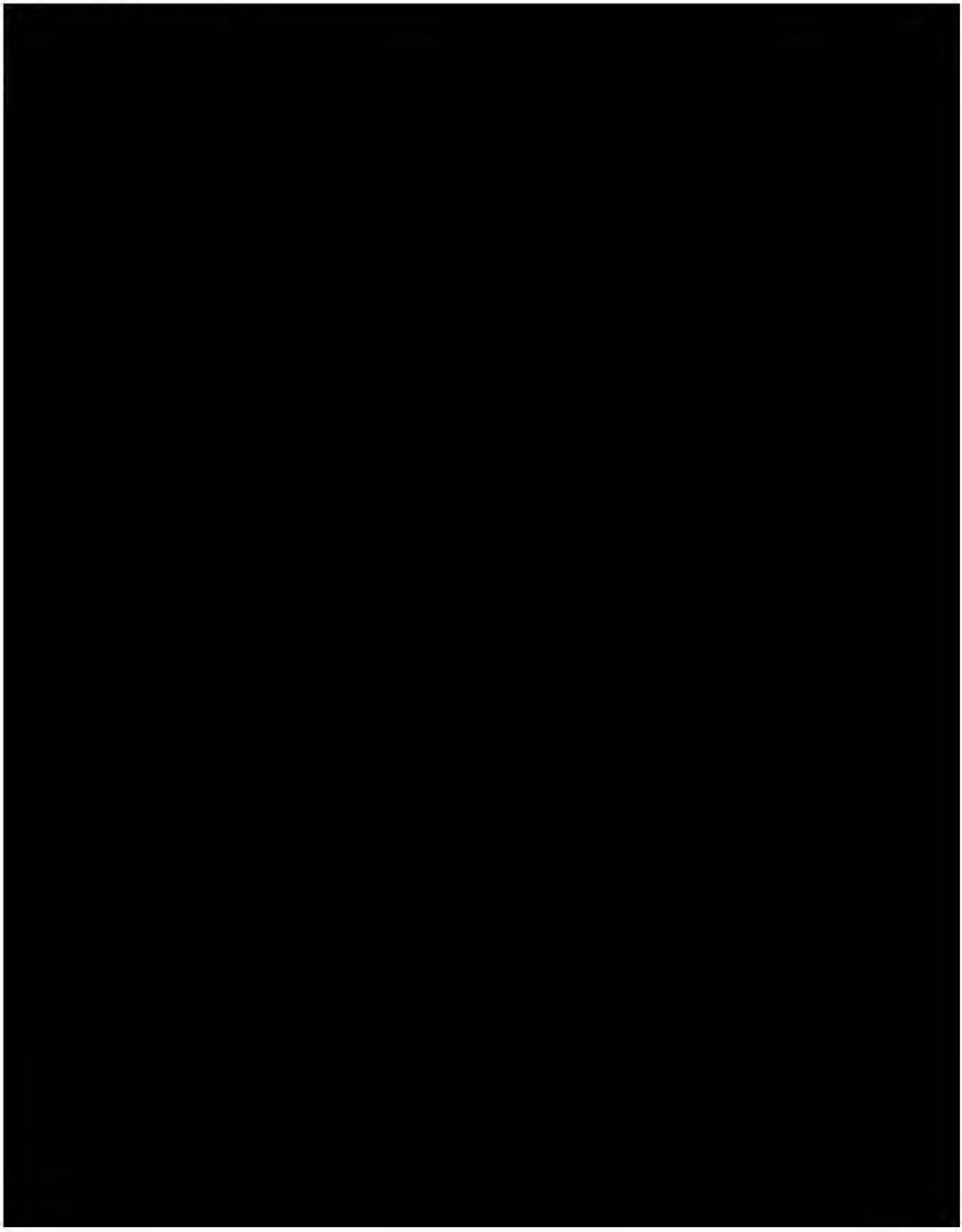

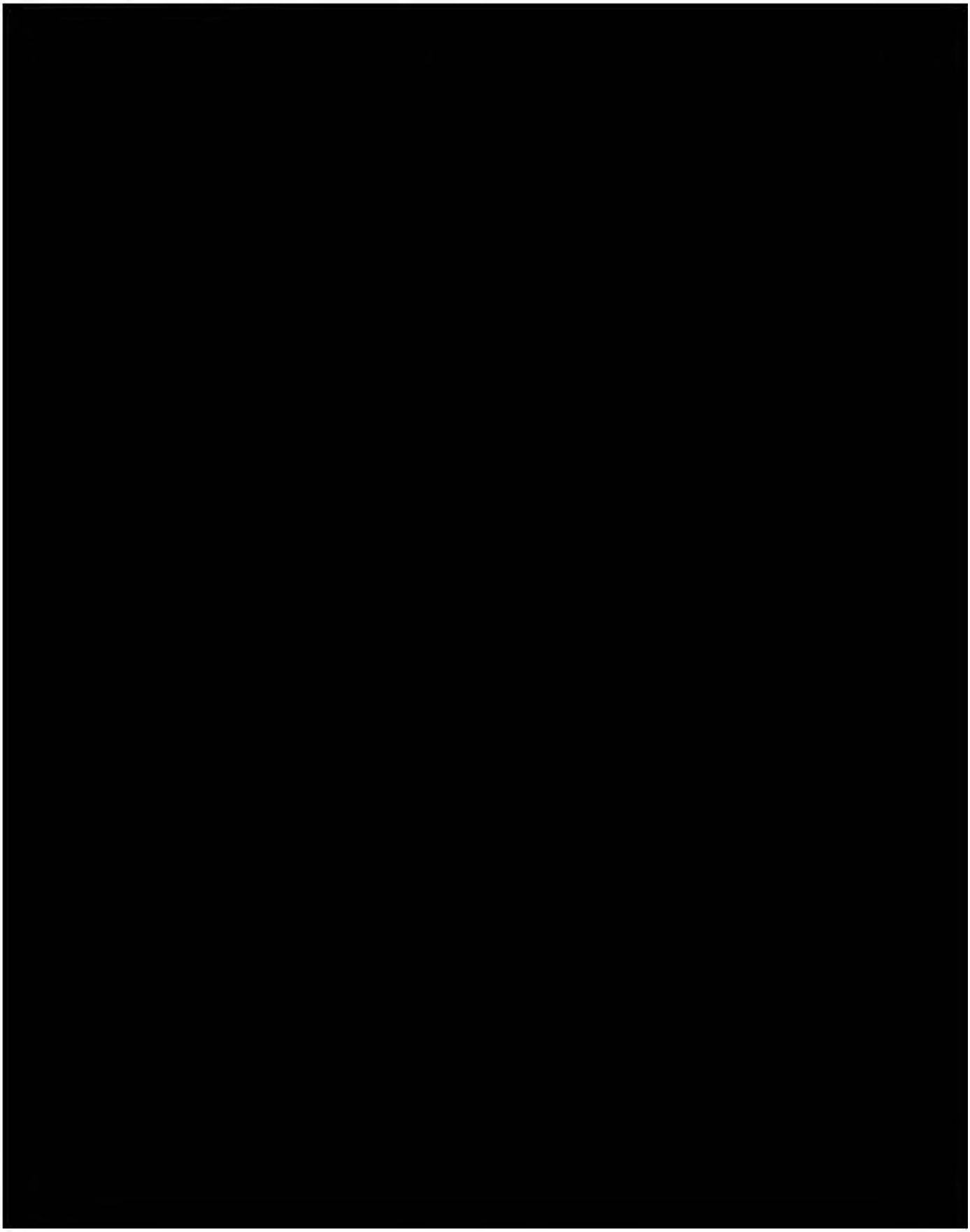

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Department of Transportation and Public Facilities

THE STATE of ALASKA
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Northern Region
Design and Engineering Services

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In Reply Refer To:
Noatak Airport Relocation
State/Federal Project Number(s):Z614780000/Pending
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February 21, 2019

Rhea Hood, Archeologist
Alaska Regional Office
National Park Service
240 West 5th Avenue
Anchorage, AK 99501

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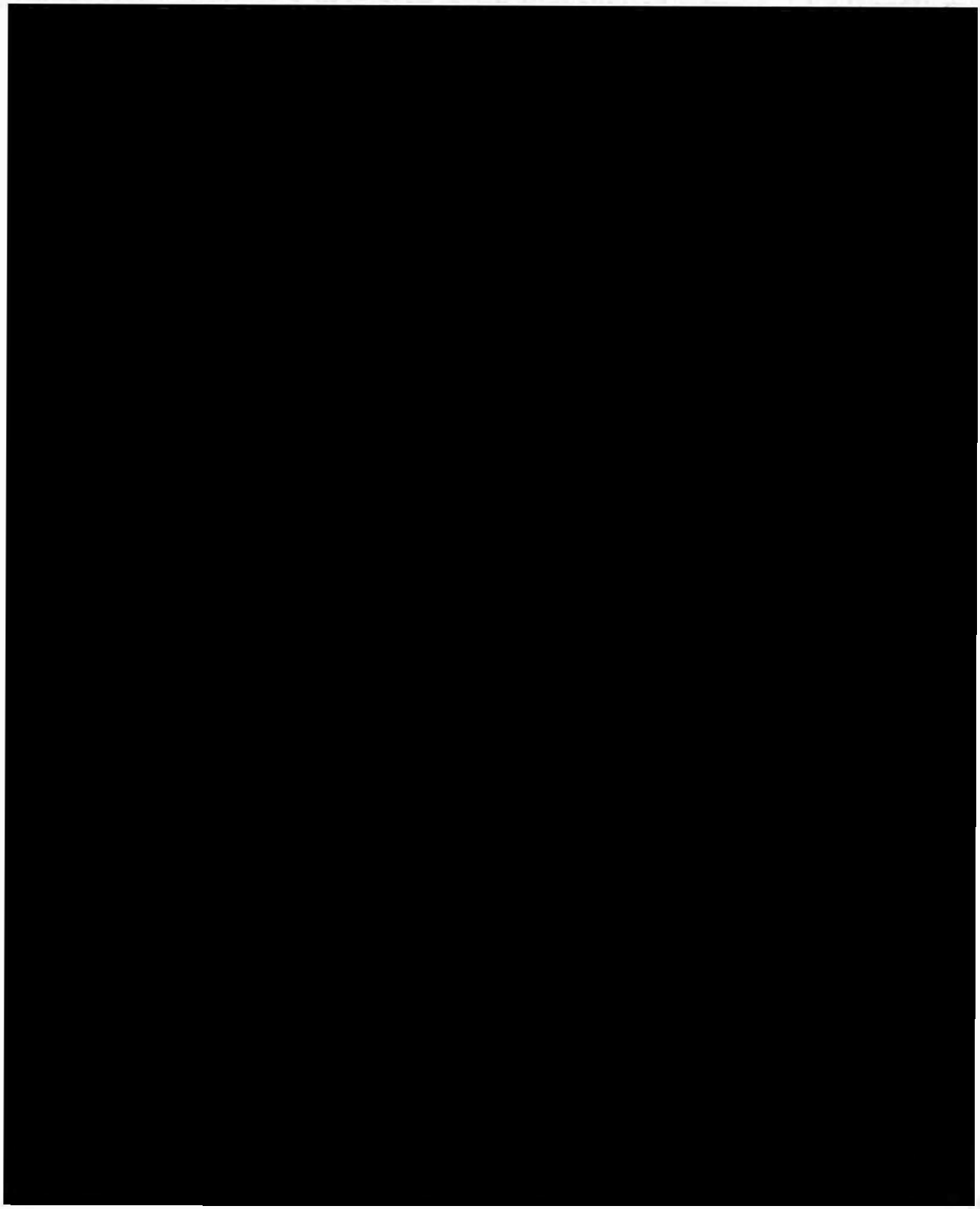

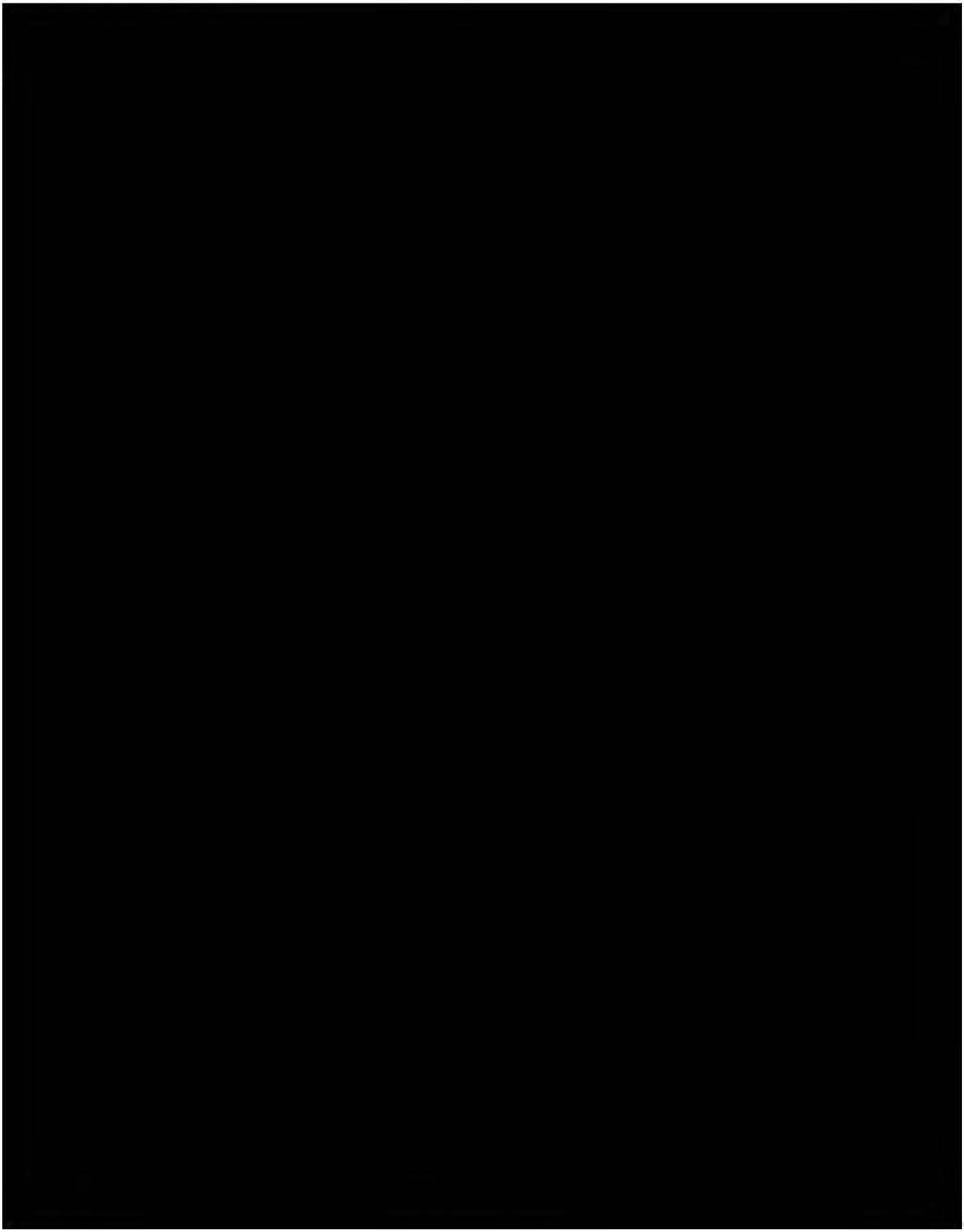

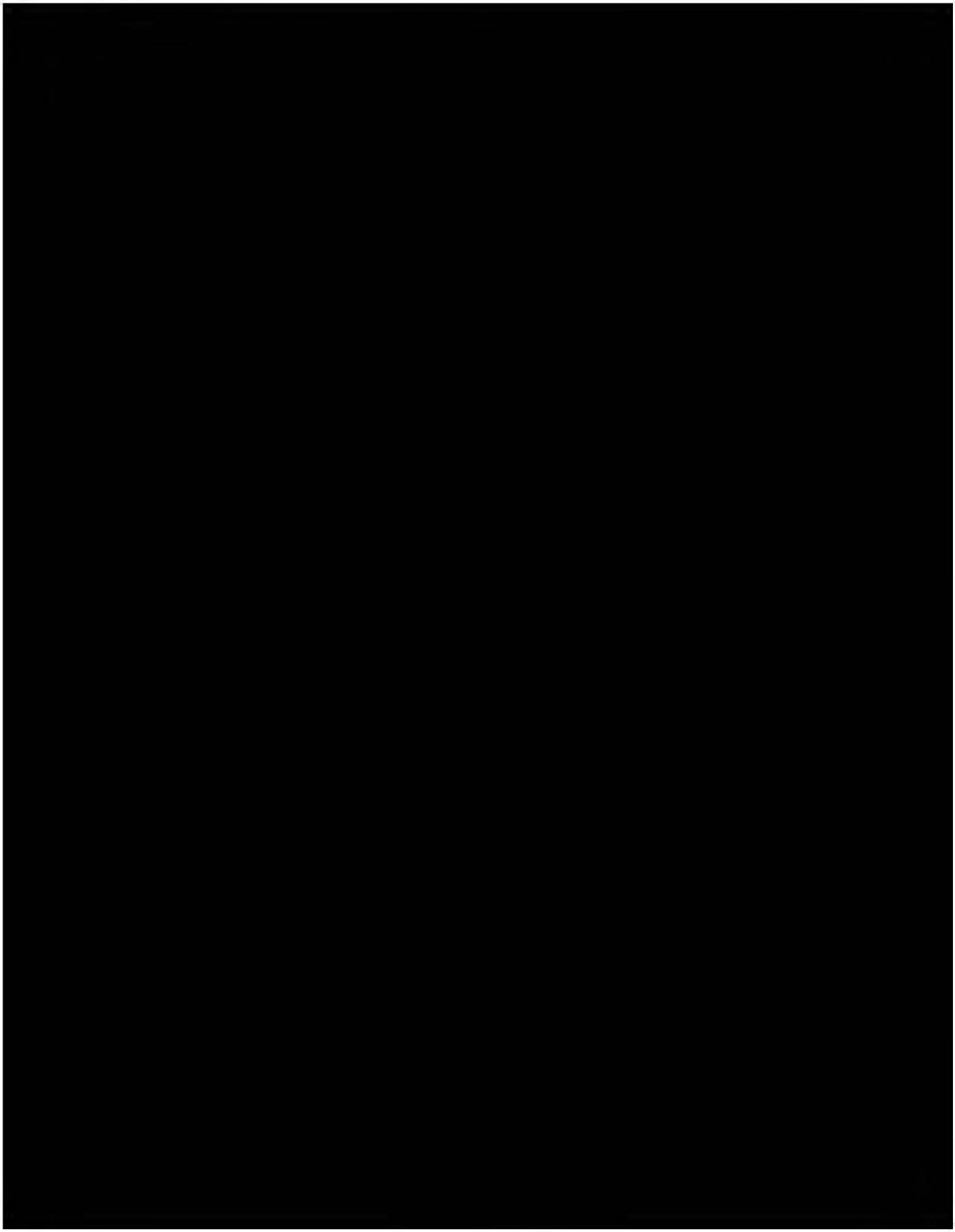

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Sincerely,

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State of Alaska DOT&PF Northern Region

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Department of Transportation and Public Facilities

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Northern Region
Design and Engineering Services

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2273
Toll free: 800-451-2363
Dot.alaska.gov

In Reply Refer To:
Noatak Airport Relocation
State/Federal Project Number(s):Z614780000/Pending
Initiation of Consultation

February 21, 2019

Maija Lukin, Superintendent
NPS-Western Arctic National Parklands
PO Box 1029
Kotzebue, AK 99752

Dear Ms. Lukin,

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Previous consultations regarding the proposed project occurred between 2006-2008. The SHPO concurred on January 31, 2006 with a determination of "no historic properties affected" for the geotechnical sampling program to support this project (SHPO File No. 3130-IRFAA). The DOT&PF distributed project scoping letters to the Native Village of Noatak, Maniilaq Association, NANA Regional Corporation, and Northwest Arctic Borough, and a Government-to-Government Consultation Initiation letter to Mr. James Adams, President of the Native Village of Noatak, in March 2006. No comments or concerns regarding historic or cultural resources were raised by these entities. Following completion of the 2006 field investigations,

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The proposed project would create a safe, reliable, and cost-effective facility that provides the community with adequate access, supports the community's long-term development goals, and is consistent with current FAA safety regulations. The existing airport is threatened by Noatak River erosion, which will necessitate permanent runway closure. Consequently, there is insufficient land to address other existing airport deficiencies. Time critical airport relocation ensures continued safe and reliable air transportation for Noatak.

The proposed project includes the following features (Figures 2-3):

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    - The access road would be approximately 2 miles long and 24 feet wide with side slopes that include safety features (e.g., signage) where required, and culverts installed to maintain drainage patterns.
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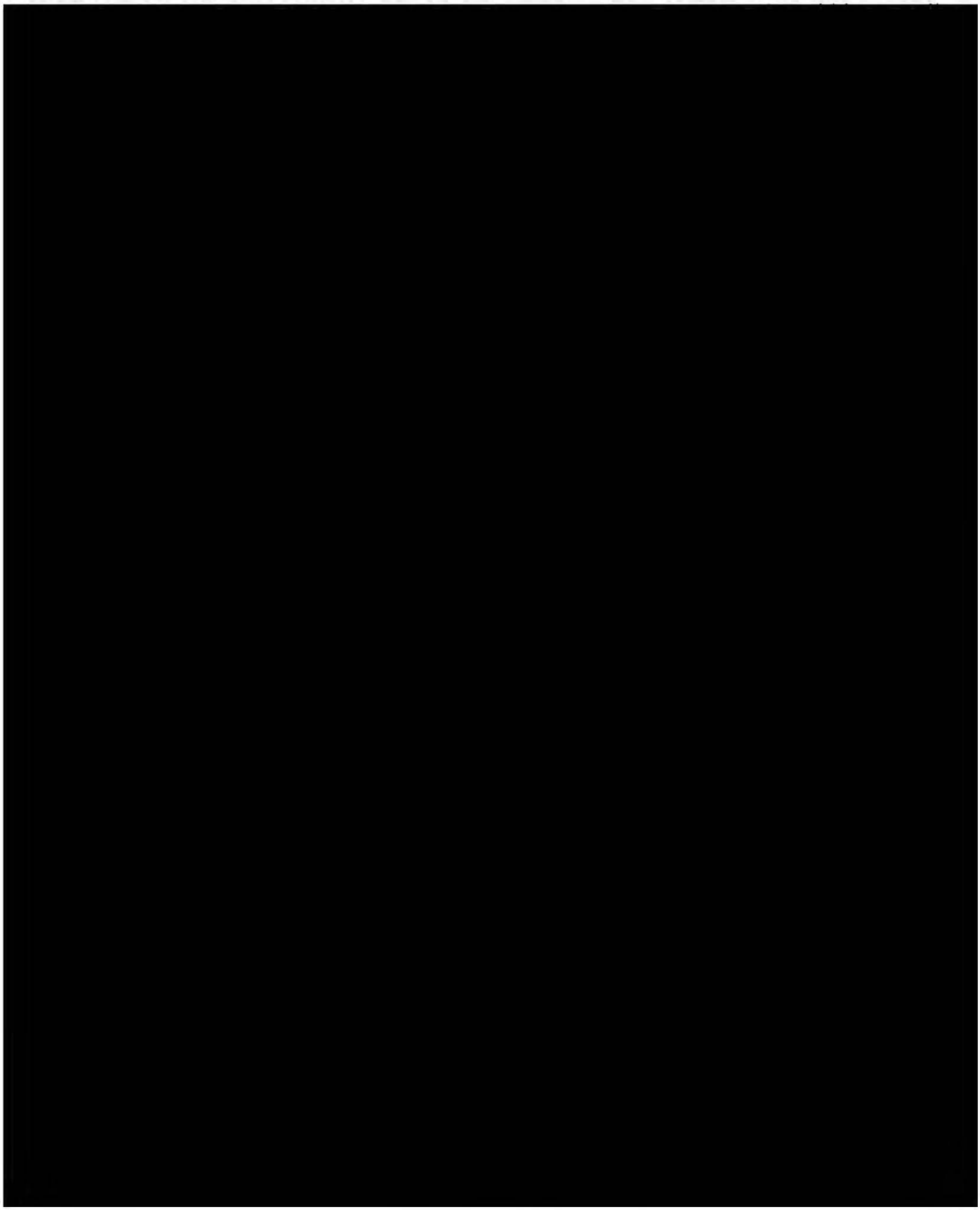

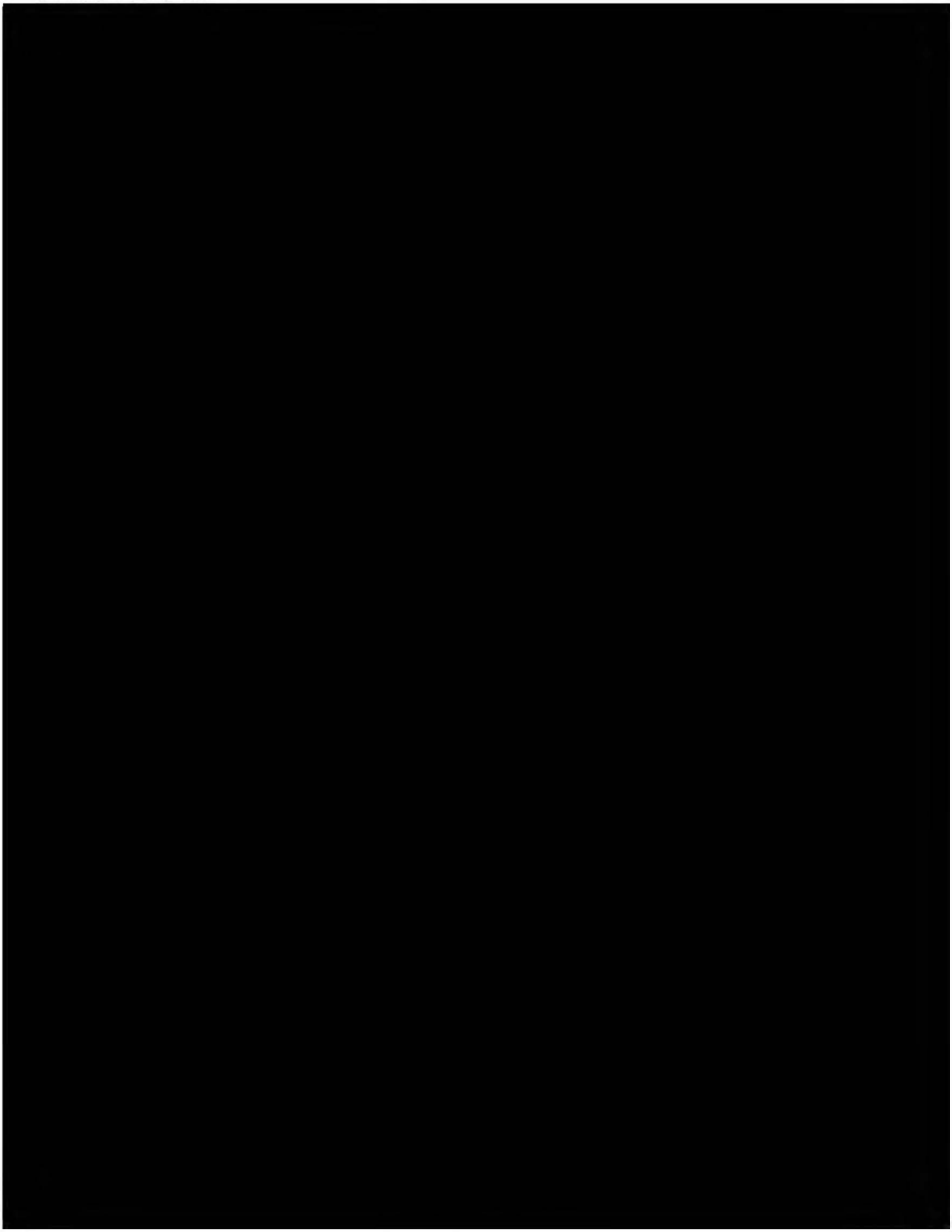

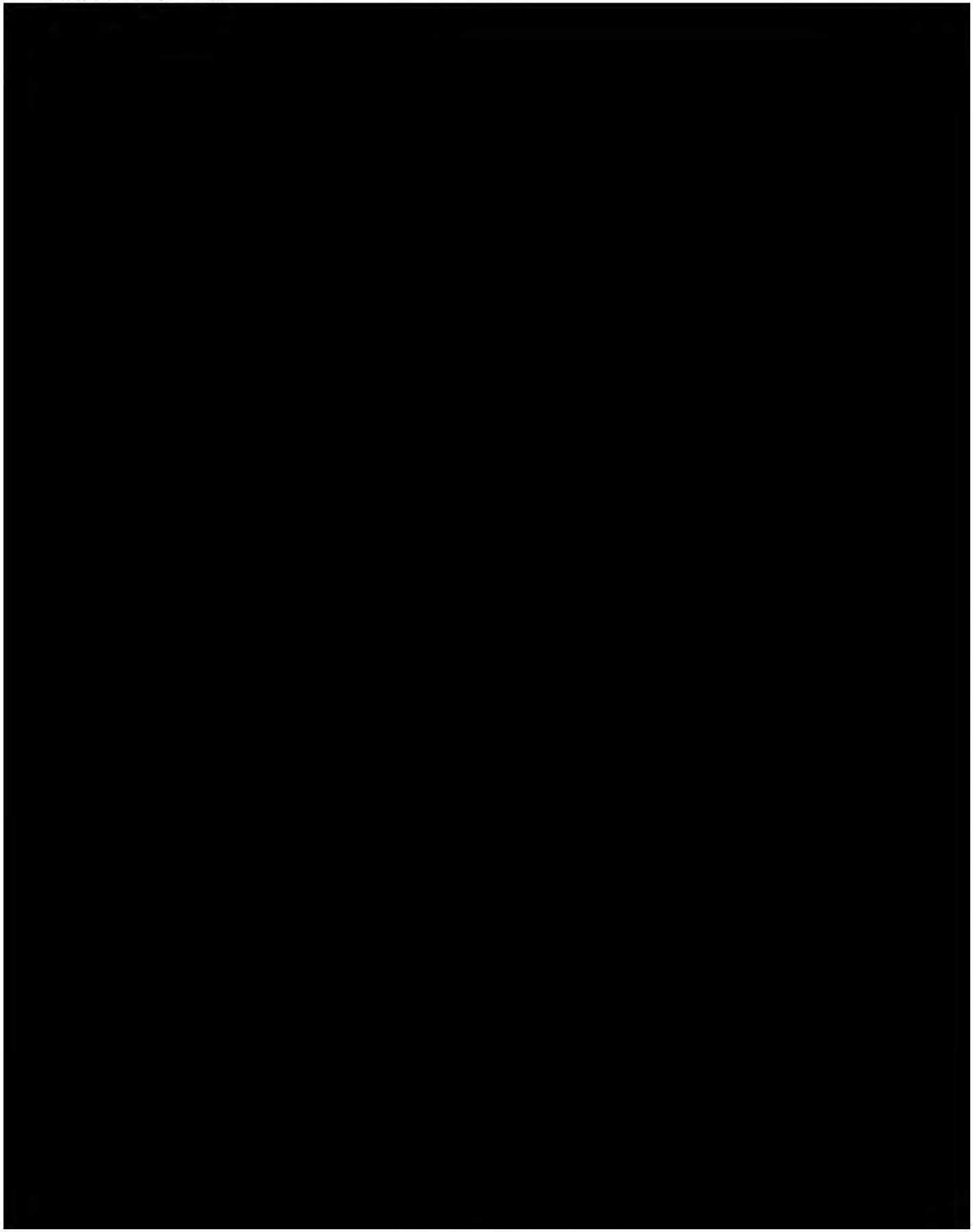

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In Reply Refer To:
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Northwest Arctic Borough
P.O. Box 1110
Kotzebue, AK 99752

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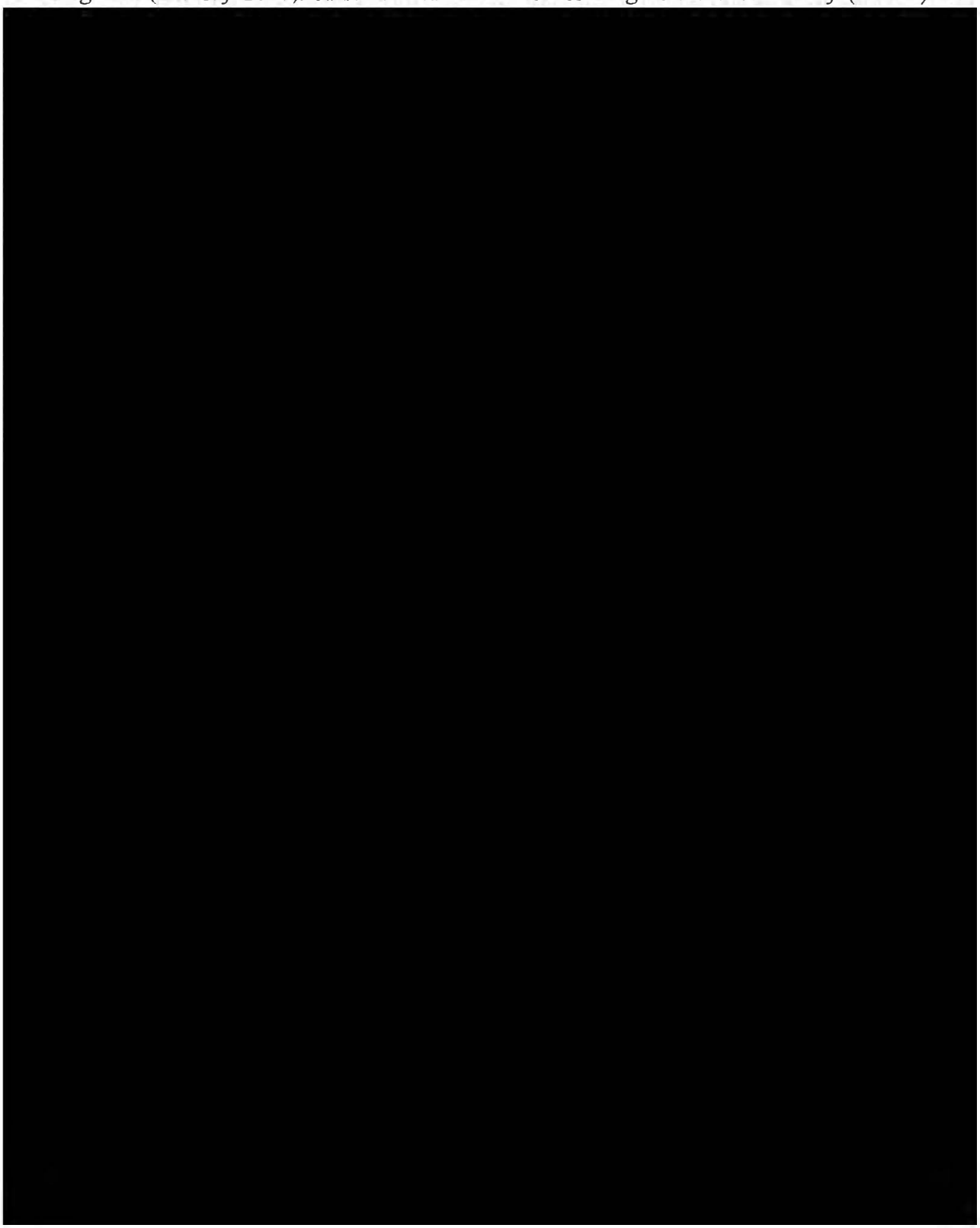

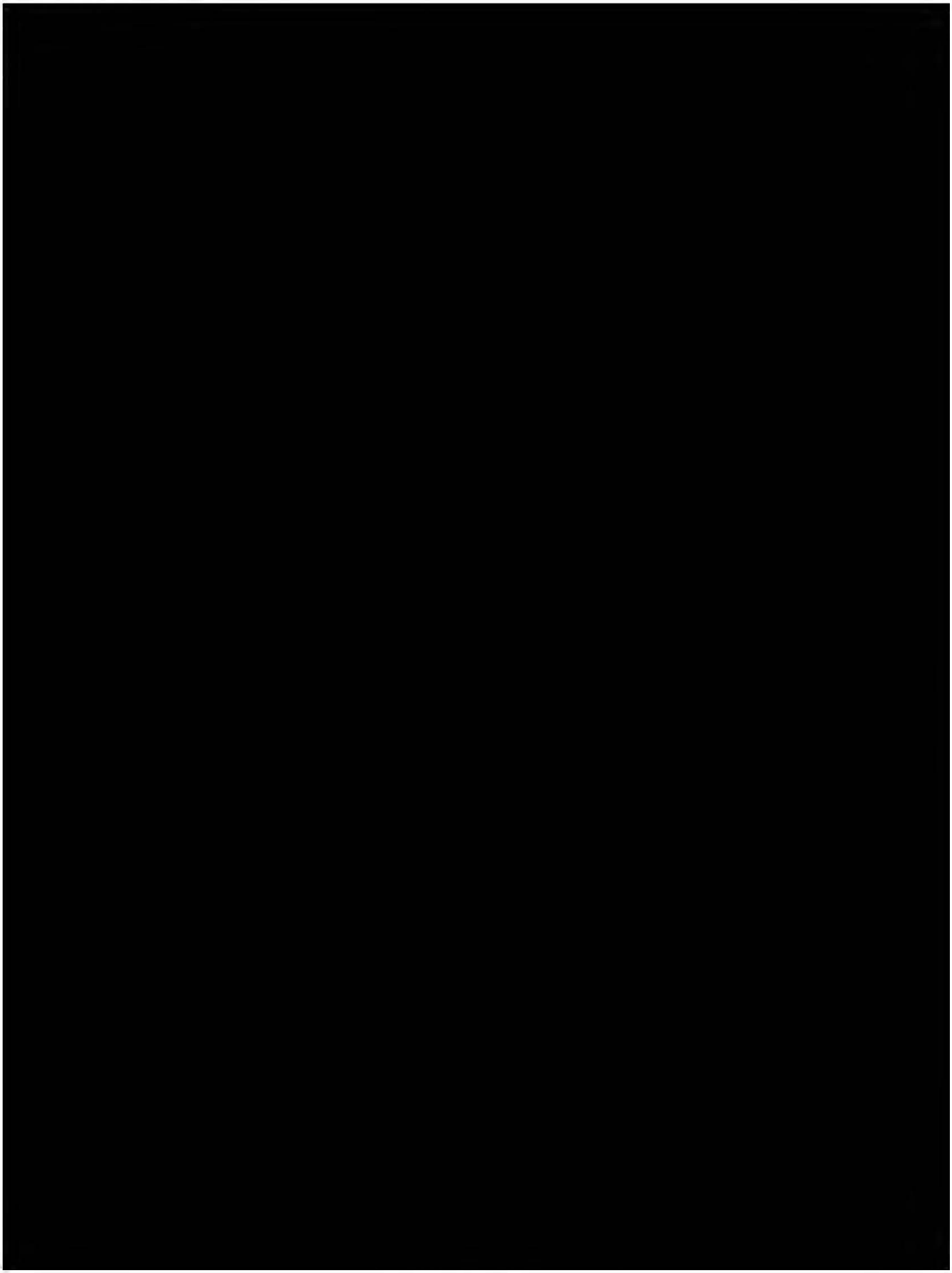

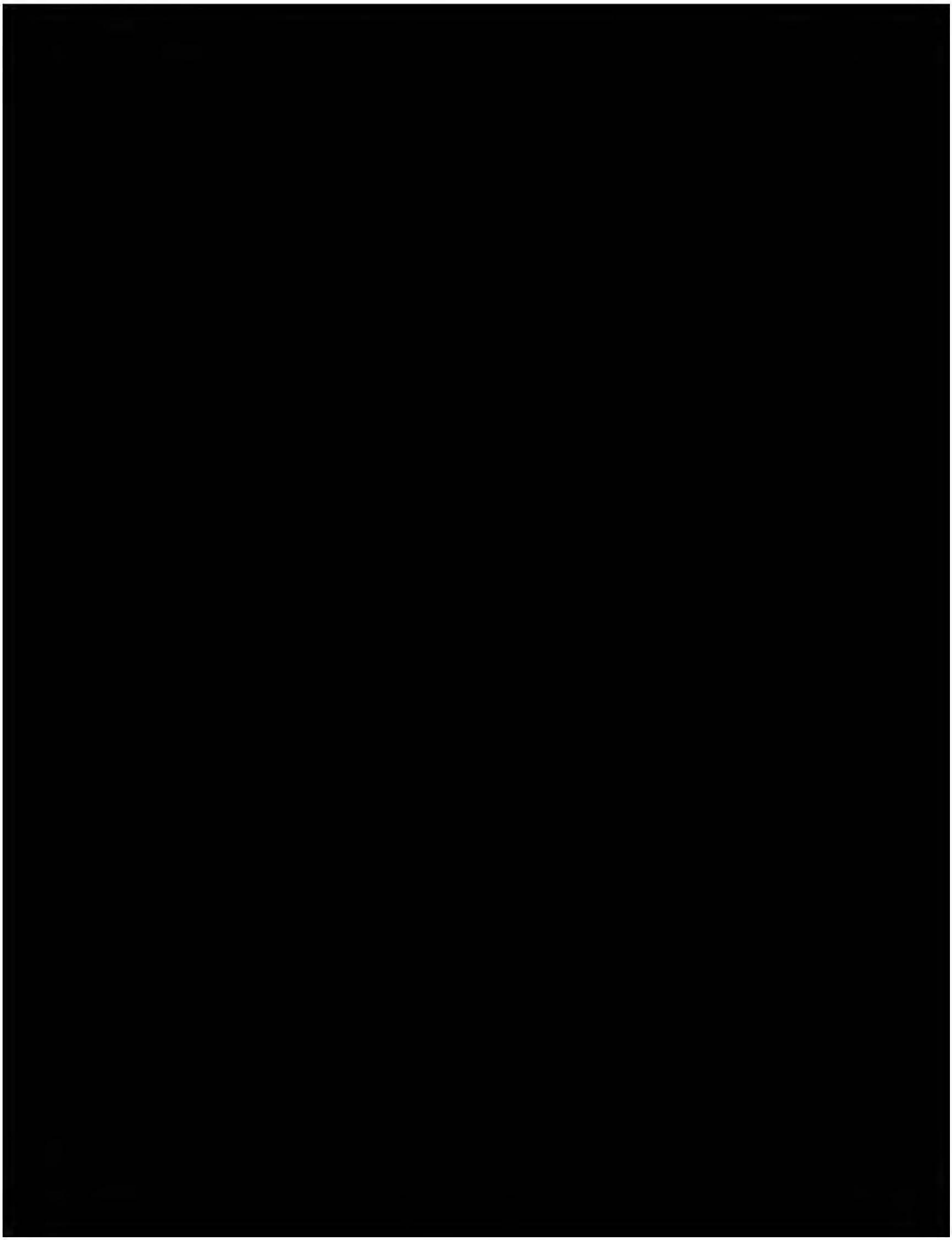

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In Reply Refer To:
Noatak Airport Relocation
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February 21, 2019

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Maniilaq Association
P.O. Box 256, #733 2nd Avenue
Kotzebue, AK 99752

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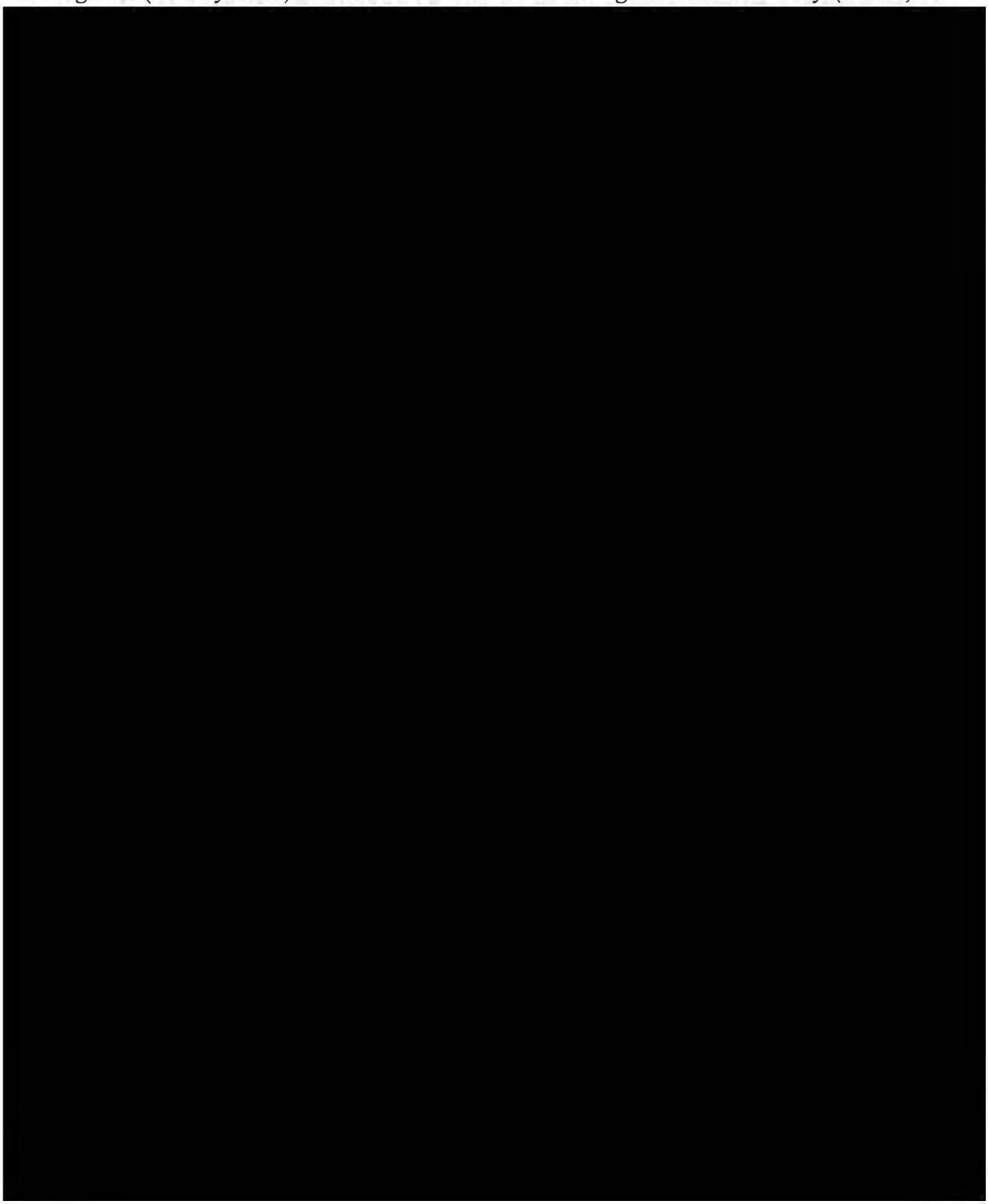

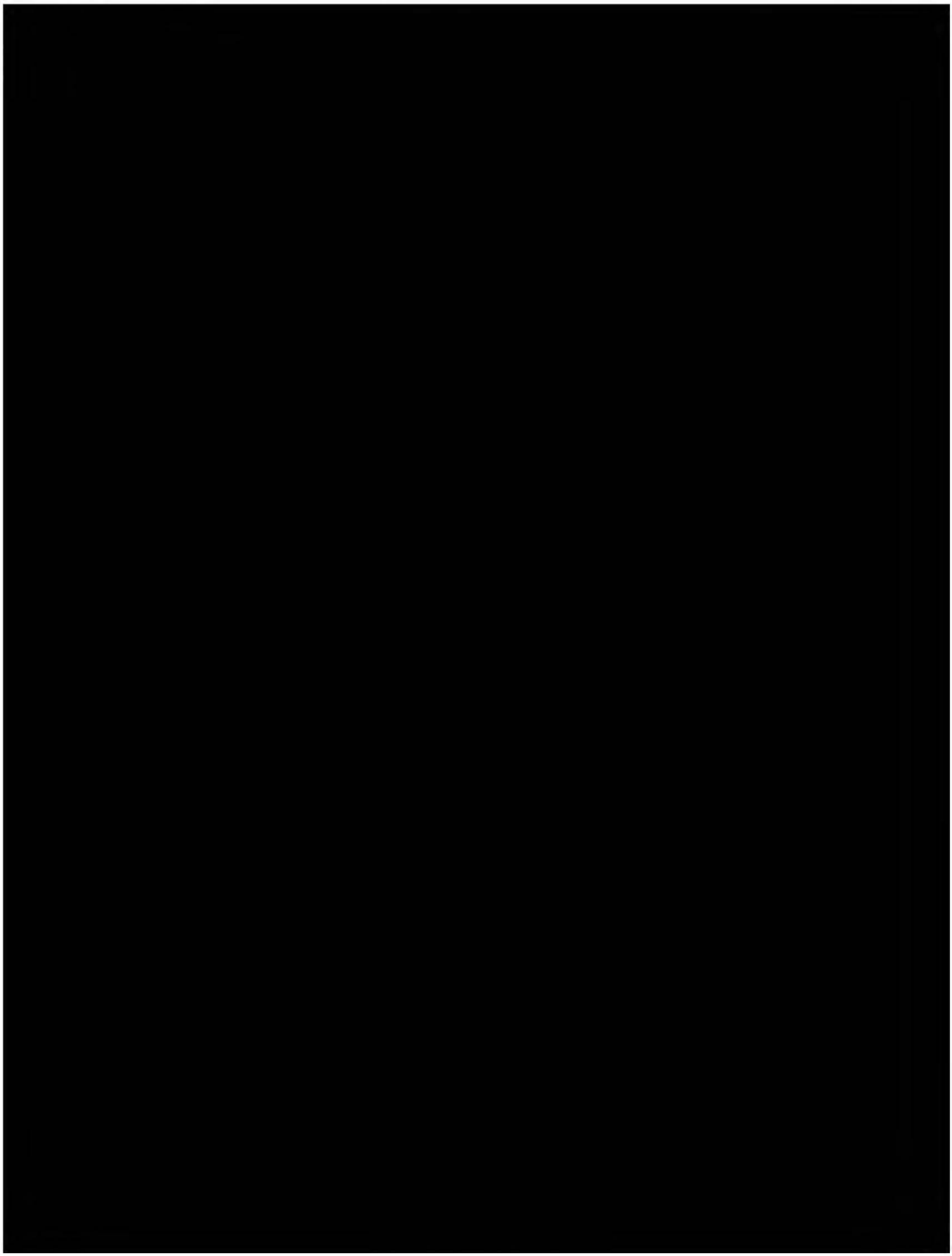

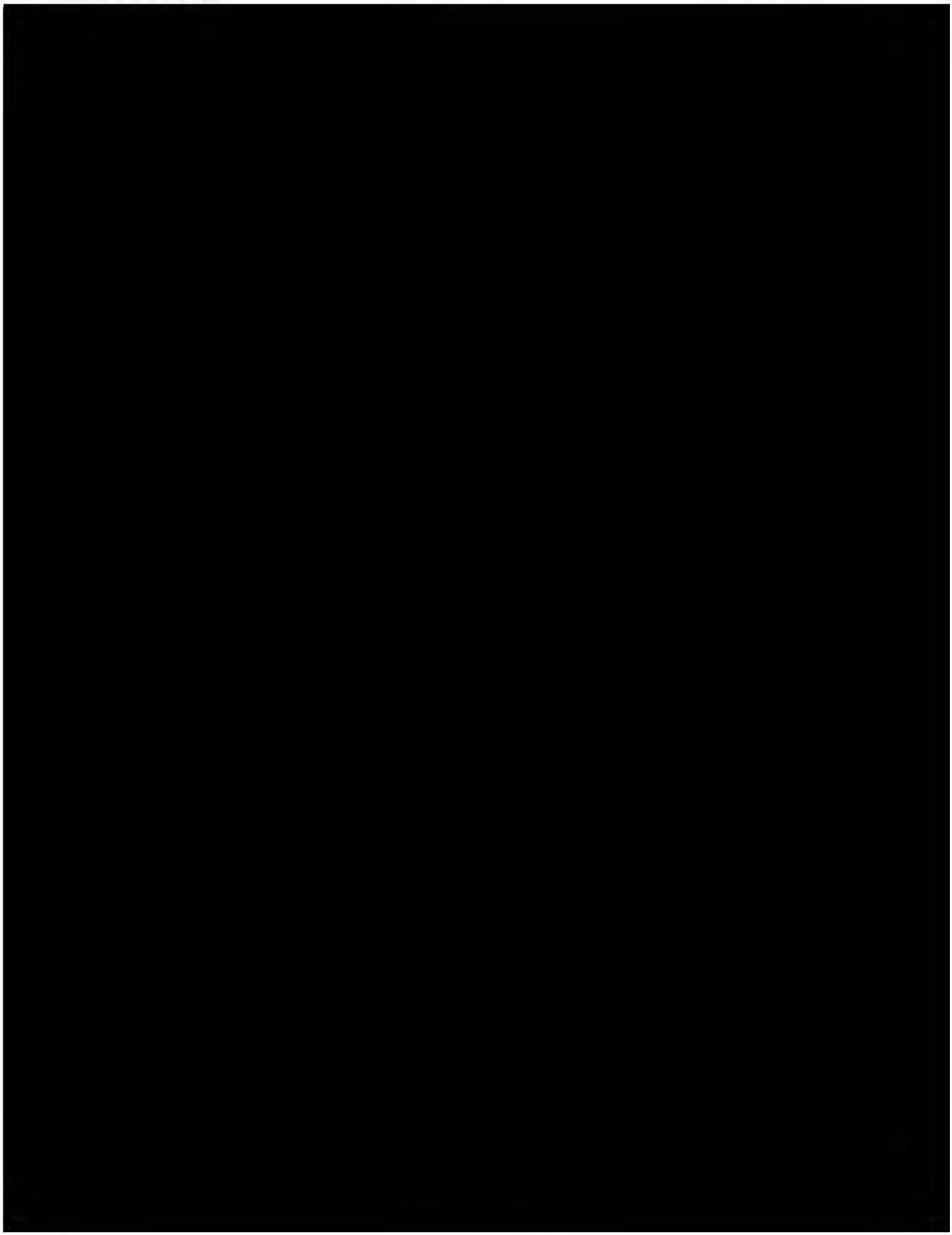

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Cultural Resource Specialist-Archaeologist (PQI)
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In Reply Refer To:
Noatak Airport Relocation
State/Federal Project Number(s):Z614780000/Pending
Initiation of Consultation

February 21, 2019

Eugene Peltola Jr., Regional Director
Bureau of Indian Affairs, Alaska Regional Office
3601C Street, Suite 1100
Anchorage, AK 99503-59

Dear Mr. Peltola,

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Previous consultations regarding the proposed project occurred between 2006-2008. The SHPO concurred on January 31, 2006 with a determination of "no historic properties affected" for the geotechnical sampling program to support this project (SHPO File No. 3130-IRFAA). The DOT&PF distributed project scoping letters to the Native Village of Noatak, Maniilaq Association, NANA Regional Corporation, and Northwest Arctic Borough, and a Government-to-Government Consultation Initiation letter to Mr. James Adams, President of the Native Village of Noatak, in March 2006. No comments or concerns regarding historic or cultural resources were raised by these entities. Following completion of the 2006 field investigations,

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The proposed project would create a safe, reliable, and cost-effective facility that provides the community with adequate access, supports the community's long-term development goals, and is consistent with current FAA safety regulations. The existing airport is threatened by Noatak River erosion, which will necessitate permanent runway closure. Consequently, there is insufficient land to address other existing airport deficiencies. Time critical airport relocation ensures continued safe and reliable air transportation for Noatak.

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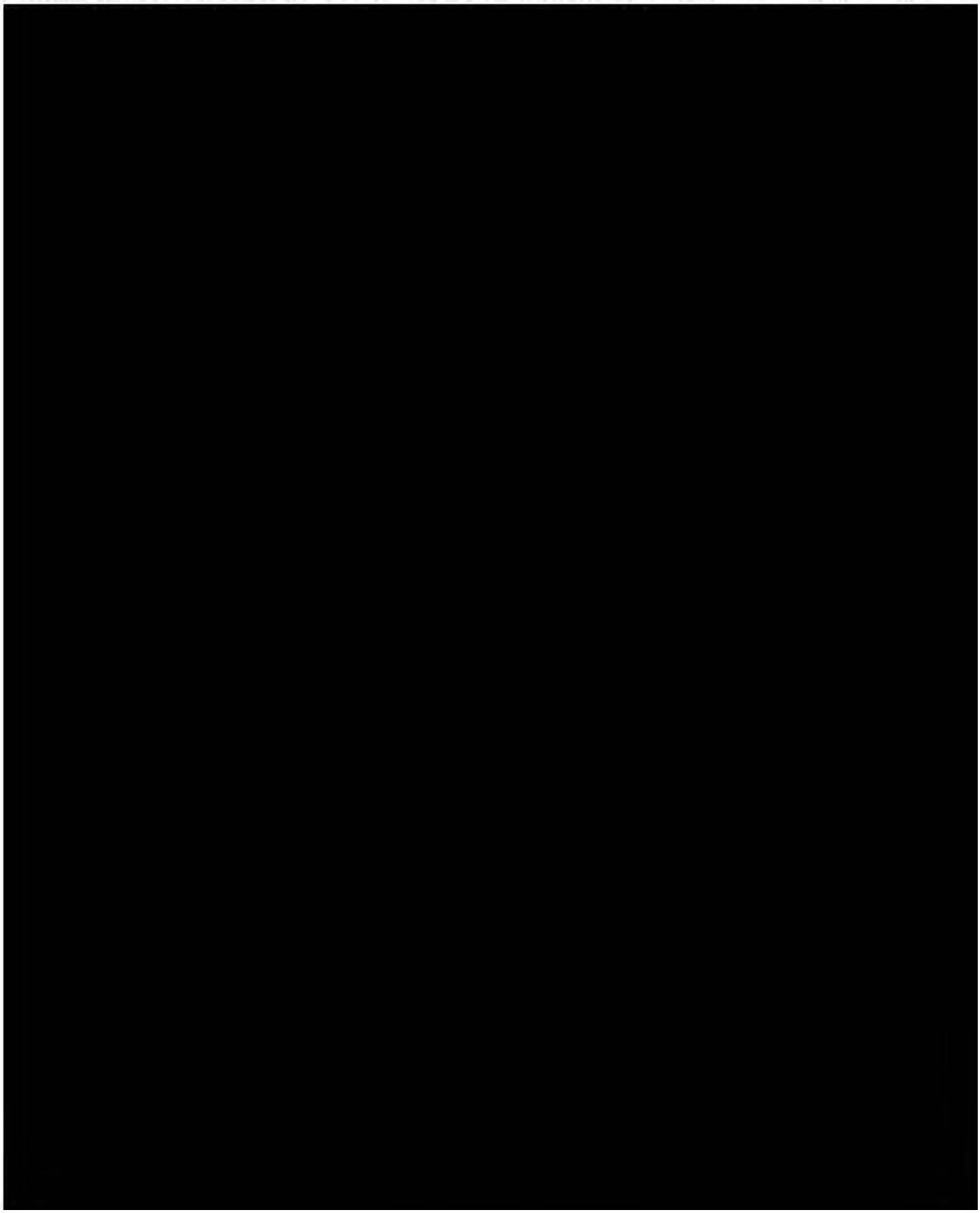

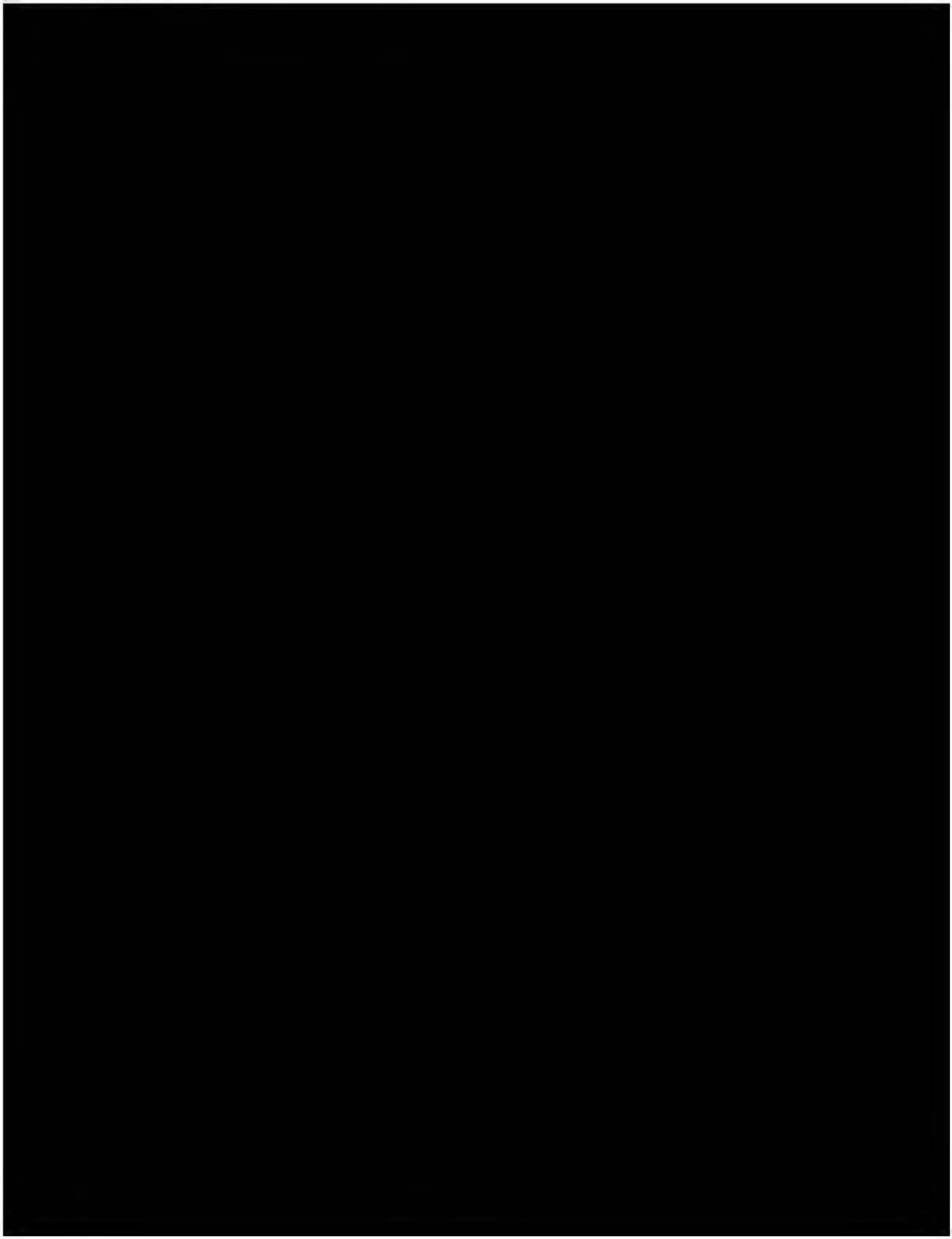

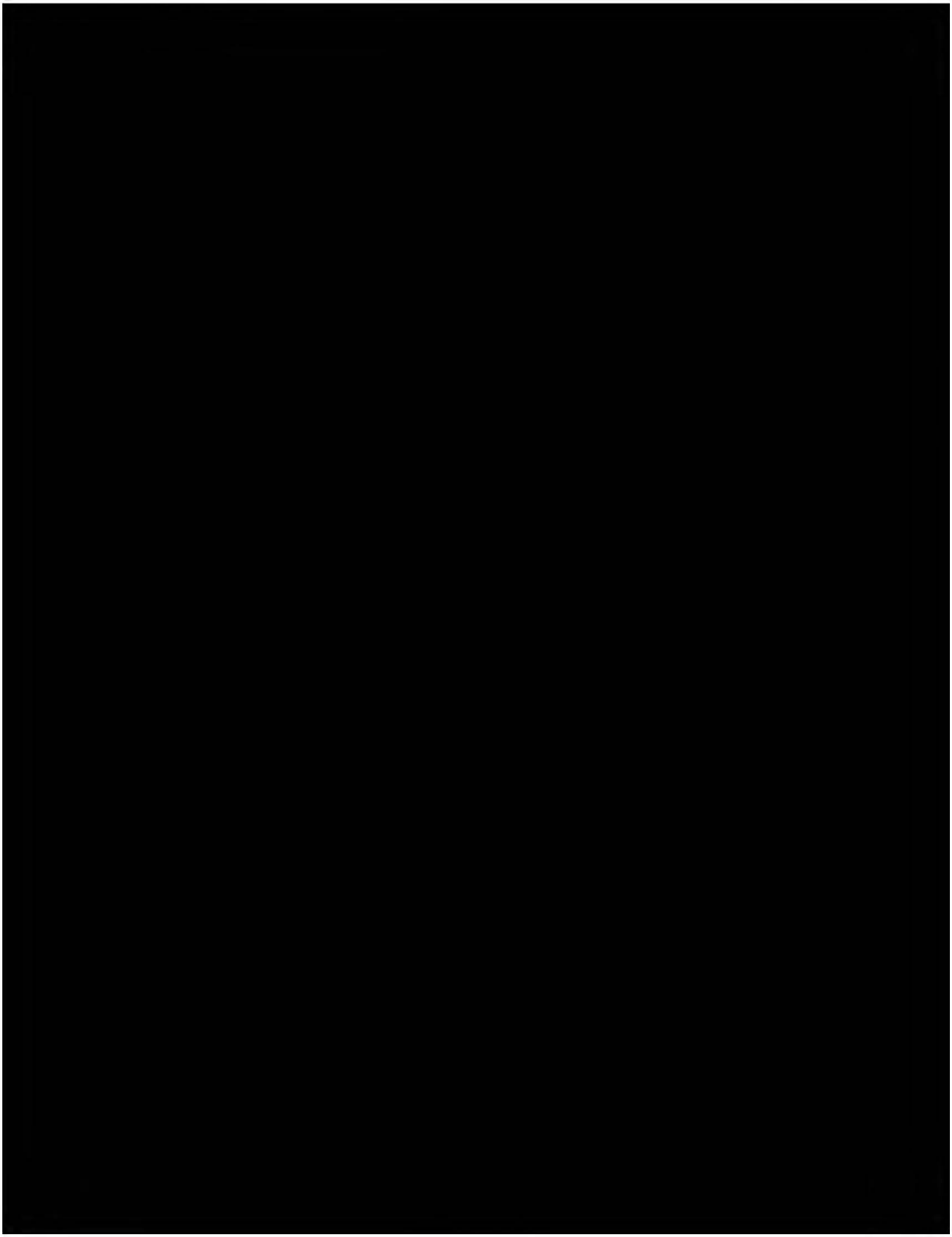

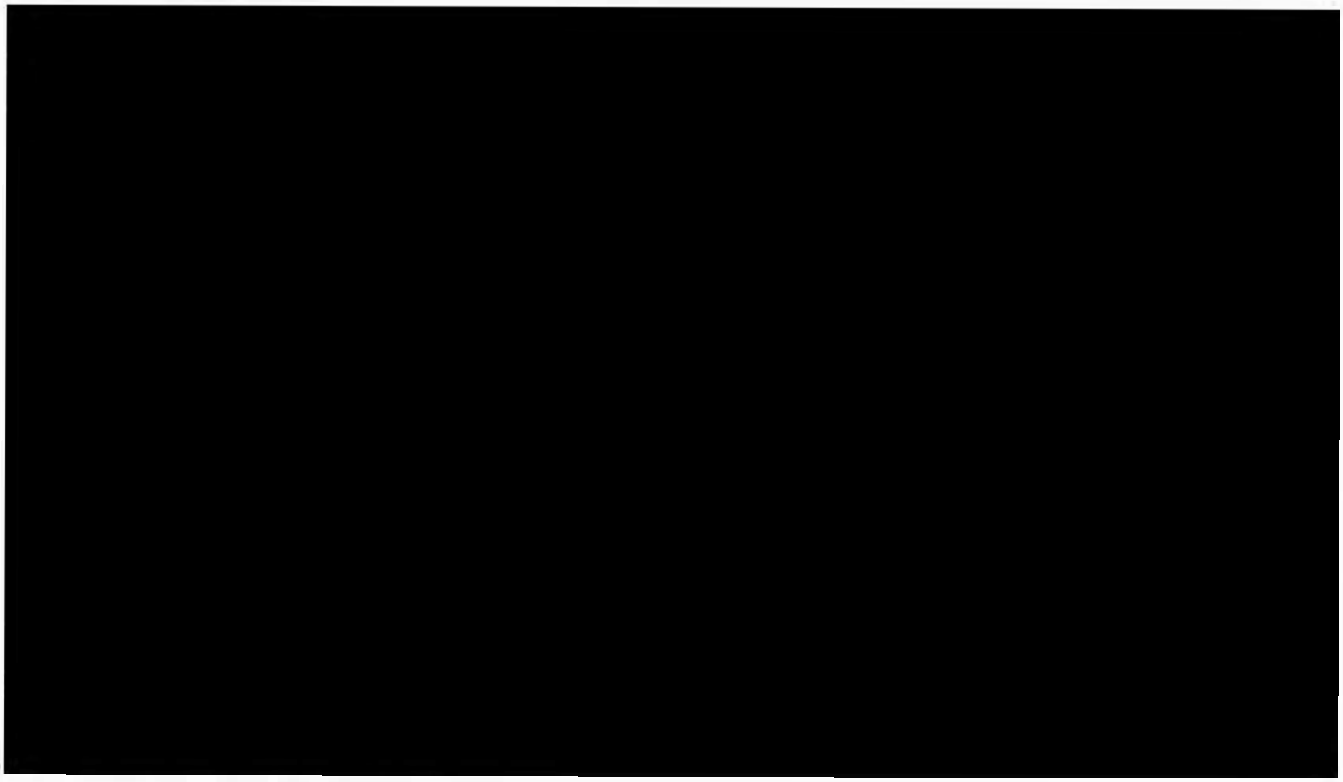

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In Reply Refer To:
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Initiation of Consultation

February 21, 2019

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Bureau of Indian Affairs, Alaska Regional Office
3601C Street, Suite 1100
Anchorage, AK 99503-5947

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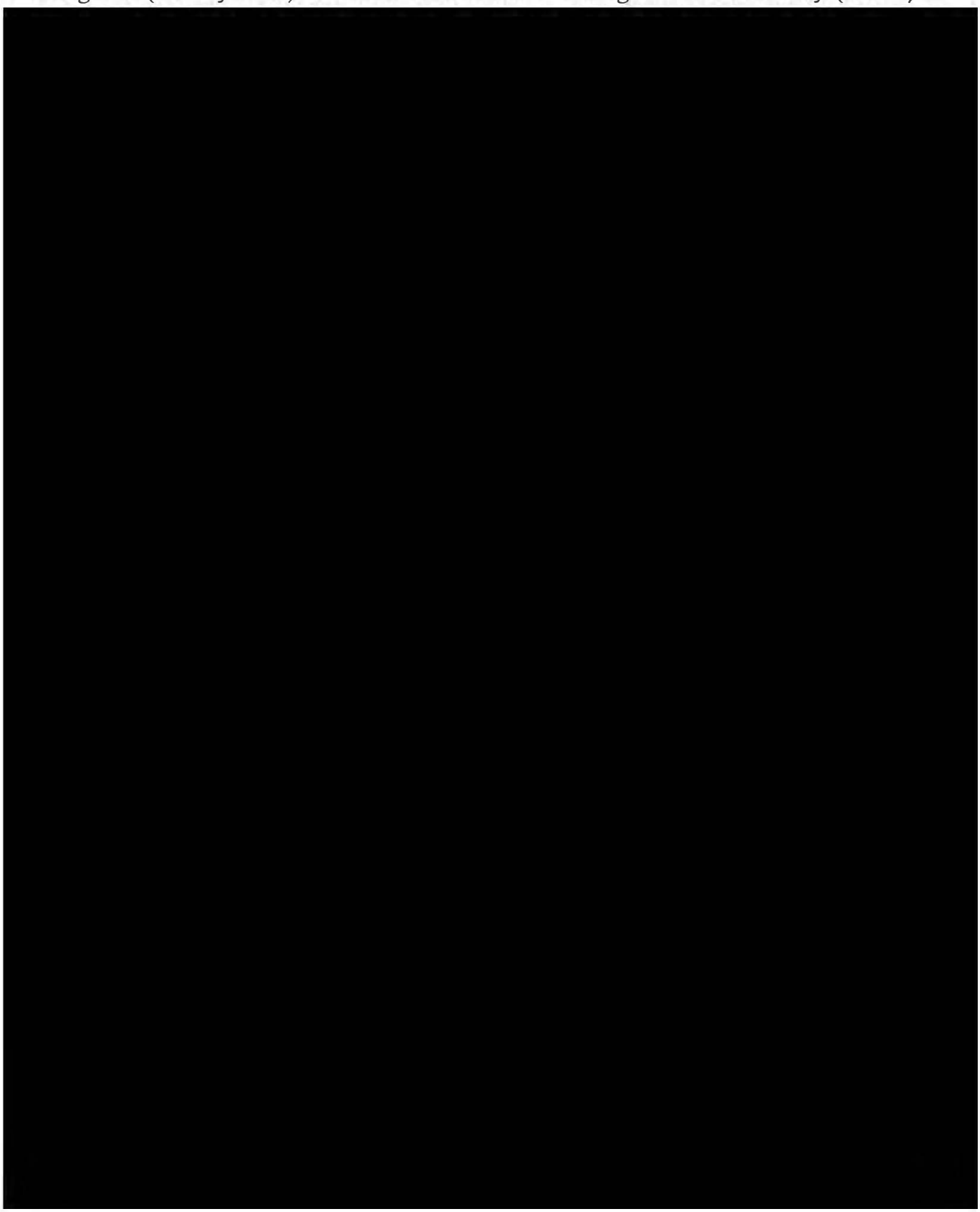

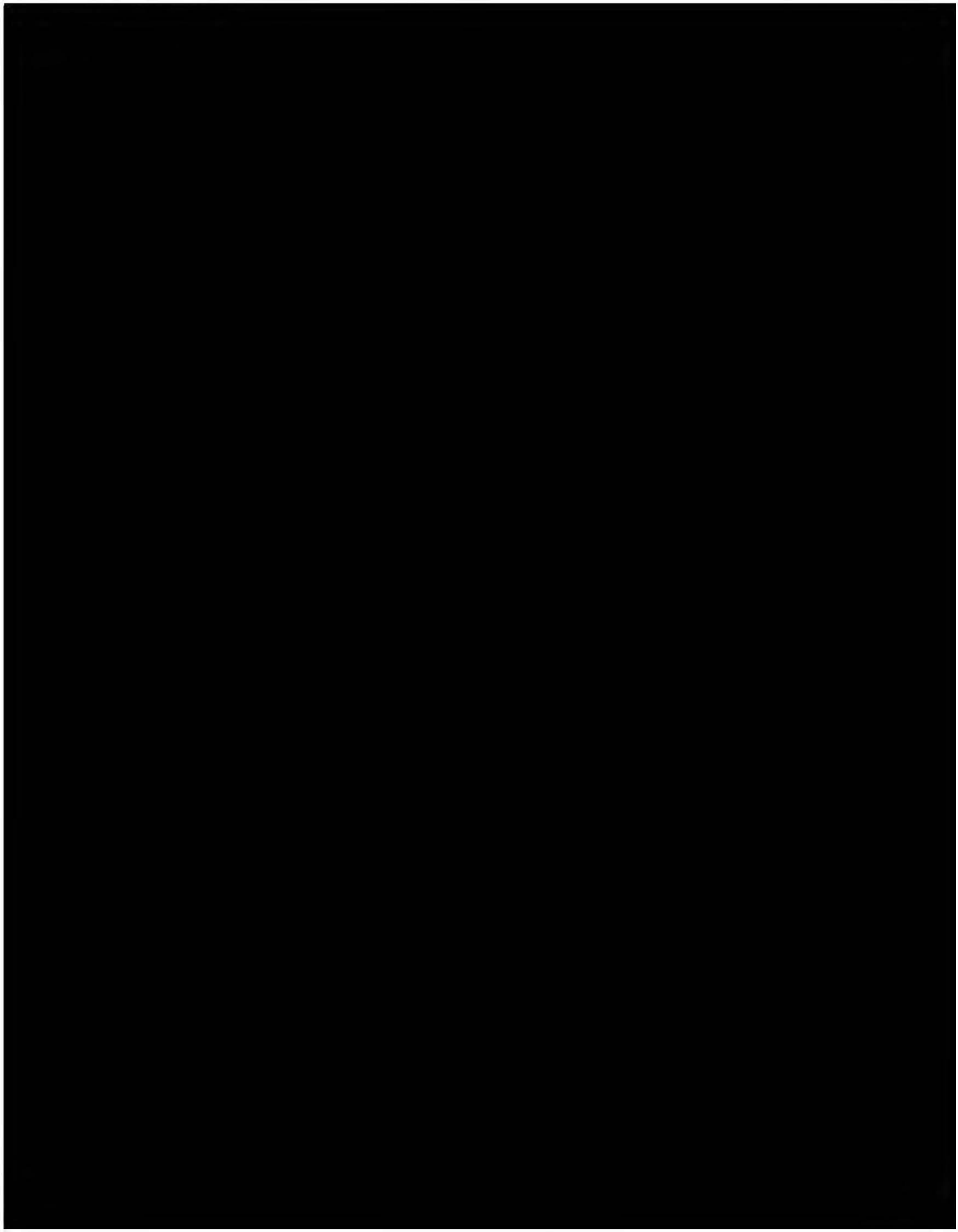

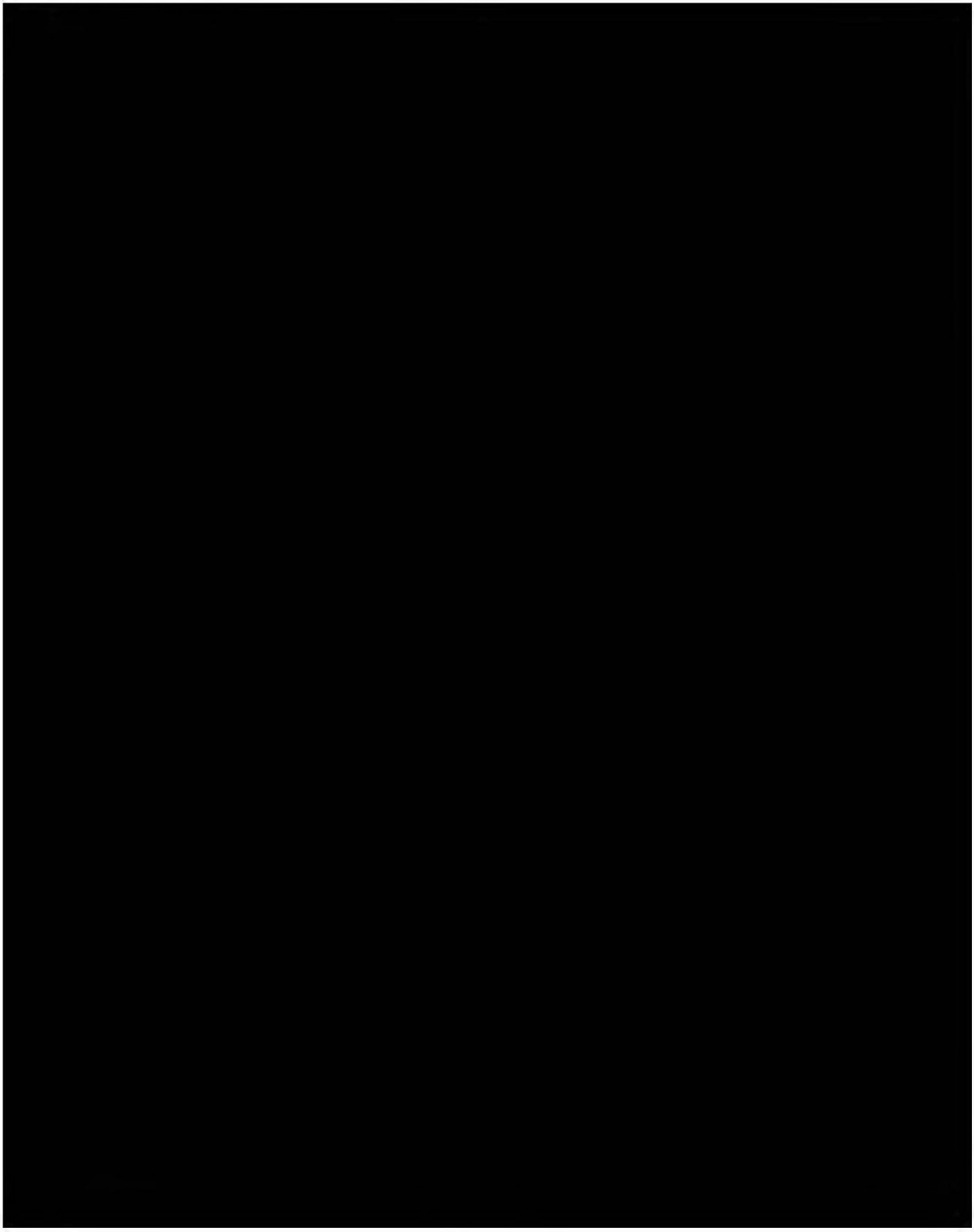

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In Reply Refer To:
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February 21, 2019

Wayne Westlake, President & CEO
NANA Regional Corporation, Inc.
PO Box 49
Kotzebue, AK 99752

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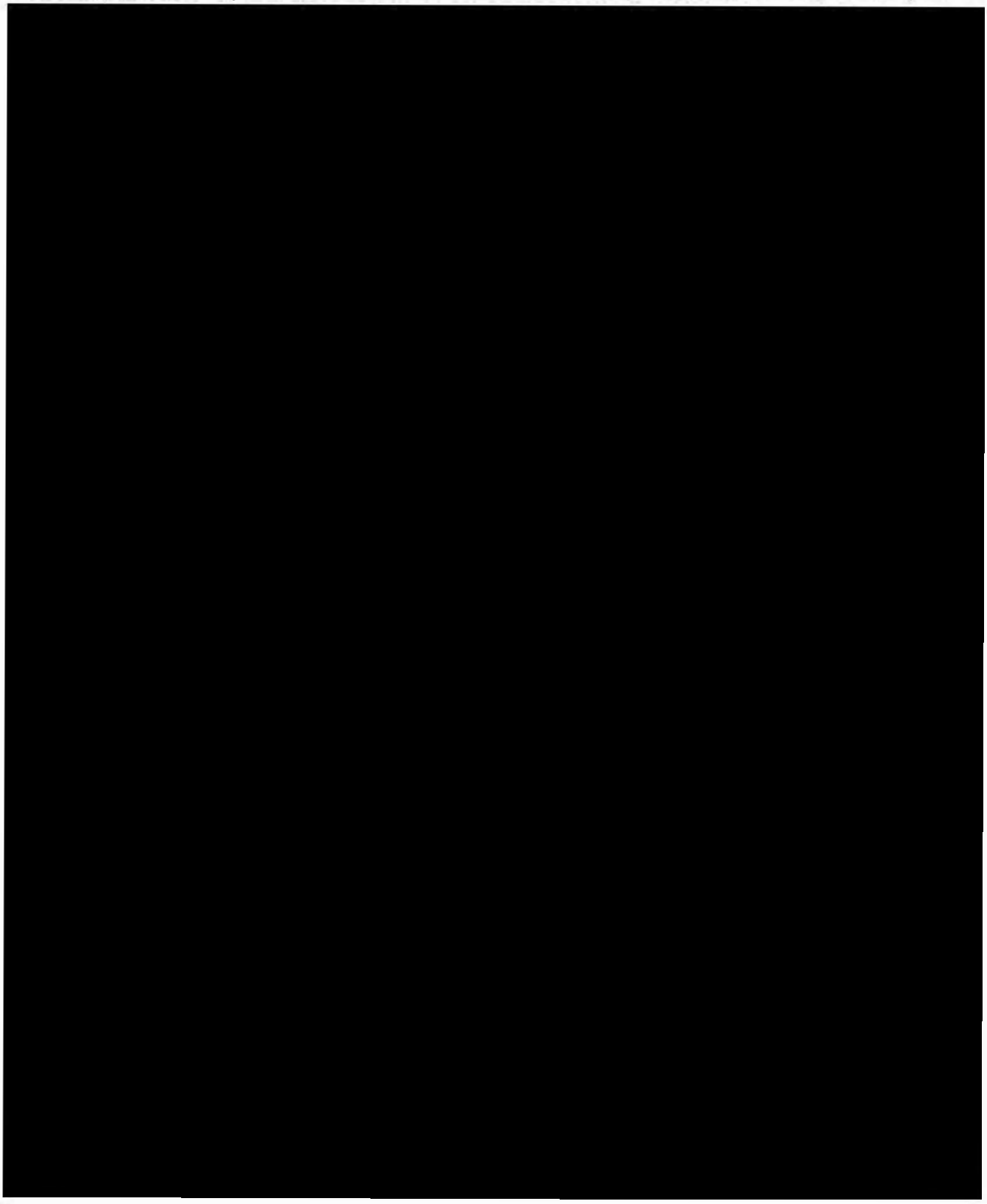

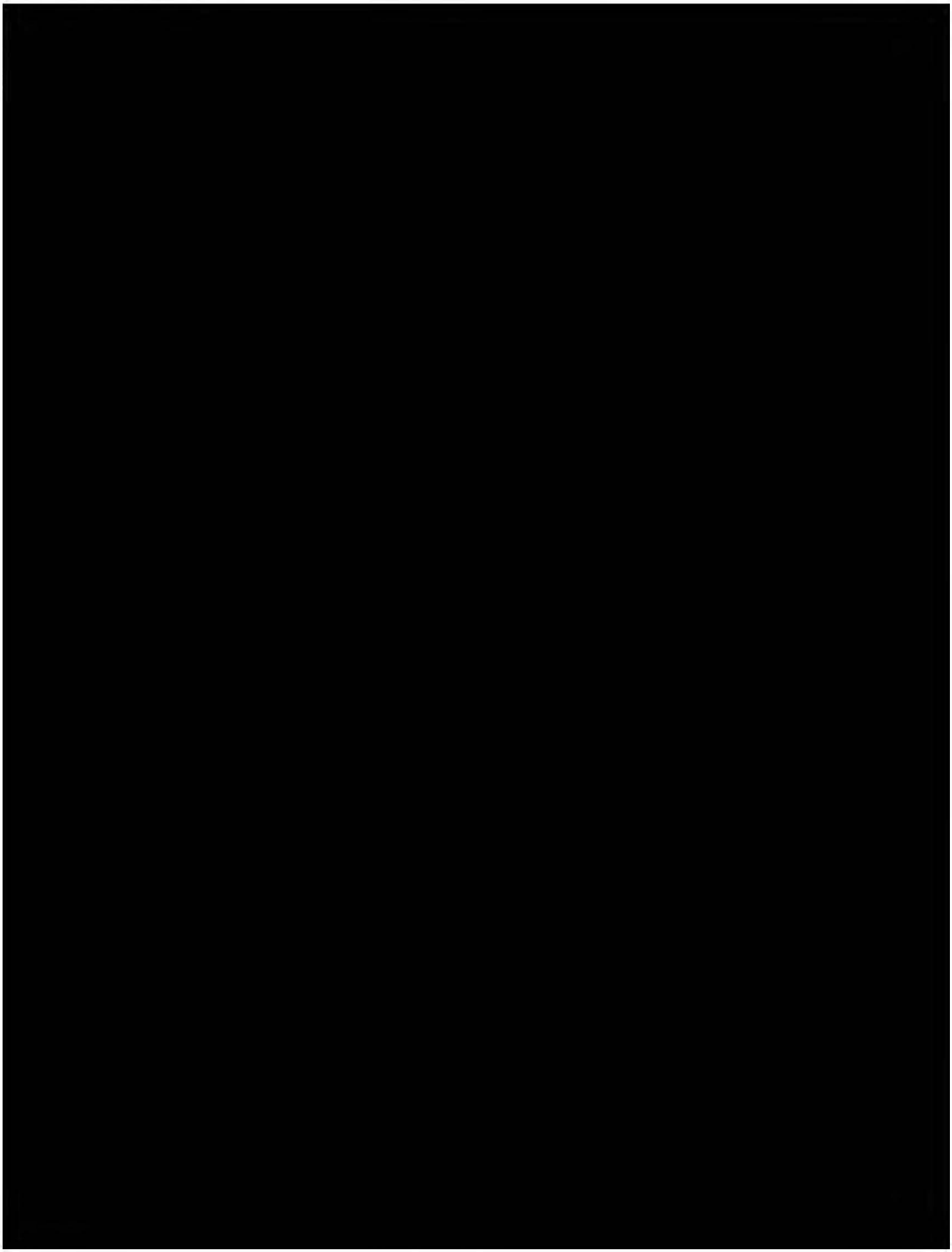

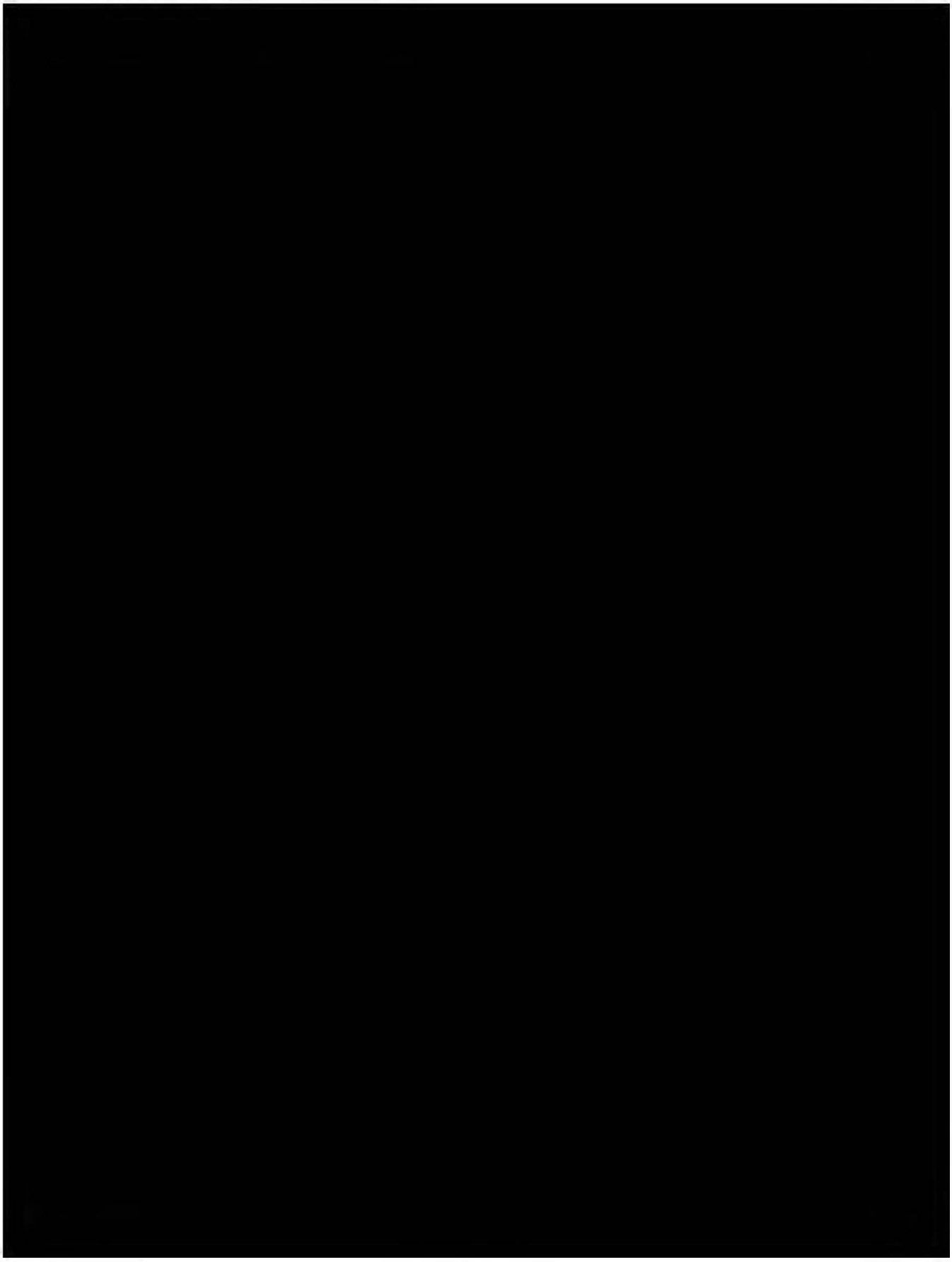

Consultation Efforts

On behalf of FAA, the DOT&PF has identified the following potentially interested parties to initiate consultation with regarding this project: the State Historic Preservation Officer (SHPO); the National Park Service (NPS); the Native Village of Kivalina; the City of Kivalina; the Native Village of Noatak; NANA Regional Corporation; Maniilaq Association; the Northwest Arctic Borough; NPS-Western Arctic National Parklands; and the Bureau of Indian Affairs (BIA).

If you have questions or comments related to this proposed project, or would like to inform us of places of traditional religious and cultural importance may be impacted by the proposed project, I can be reached at the address above, by telephone at 907-451-5293, or by e-mail at *thomas.gamza@alaska.gov*.

Your timely response will greatly assist us in incorporating your concerns into project development. For that purpose, we respectfully request that you respond within thirty days of your receipt of this correspondence.

Sincerely,

Thomas A. Gamza
Cultural Resource Specialist-Archaeologist (PQI)
State of Alaska DOT&PF Northern Region

Enclosures:

Figure 1: Location and Vicinity Map
Figure 2: Preliminary Area of Potential Effect
Figure 3: Land Ownership and Preliminary Area of Potential Effect
Figure 4: Cape Krusenstern National Historic Landmark & National Monument Boundary

Electronic cc w/ enclosures:

Jack Gilbertsen, FAA, Alaska Region, Regional Environmental Manager
Melissa Goldstein, DOT&PF Statewide Environmental NEPA Manager
Melissa Jensen, DOT&PF, Northern Region, Environmental Impact Analyst
Christopher Johnston, P.E., DOT&PF Northern Region, Project Manager
Brett Nelson, DOT&PF Northern Region, Regional Environmental Manager
Kathy Price, DOT&PF, Statewide Cultural Resources Manager

Department of Transportation and Public Facilities

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Northern Region
Design and Engineering Services

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2273
Toll free: 800-451-2363
Dot.alaska.gov

In Reply Refer To:
Noatak Airport Relocation
State/Federal Project Number(s):Z614780000/Pending
Initiation of Consultation

February 21, 2019

John Lincoln, Vice President of Lands
NANA Regional Corporation, Inc.
PO Box 49
Kotzebue, AK 99752

Dear Mr. Lincoln,

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaskan Region, Airports Division of the Federal Aviation Administration (FAA), proposes to relocate the Noatak Airport approximately 2 miles west of Noatak, AK (Noatak Airport Relocation). The existing airport and community are located 48 miles northwest of Kotzebue, and 71 miles north of the Arctic Circle. The proposed project is located at 67°33'39" North Latitude and 162°58'48" West Longitude; Sections 5, 8,16-21, 29-32, Township (T) 25, Range (R) 19W; Sections 5-7, 18-20, 29, 32, T26, R19W; Sections 4, 5, 9, 16, 20, 21, 29, 32, T27, R19W; Sections 5-7, 17-21, 28, 33, T28, R19W; Sections 7, 17, 18, 20, 21, 27, 28, 33, 34, T29, R19W; Kateel River Meridian; United States Geological Survey Quadrangle Noatak C-2 (Figure 1).

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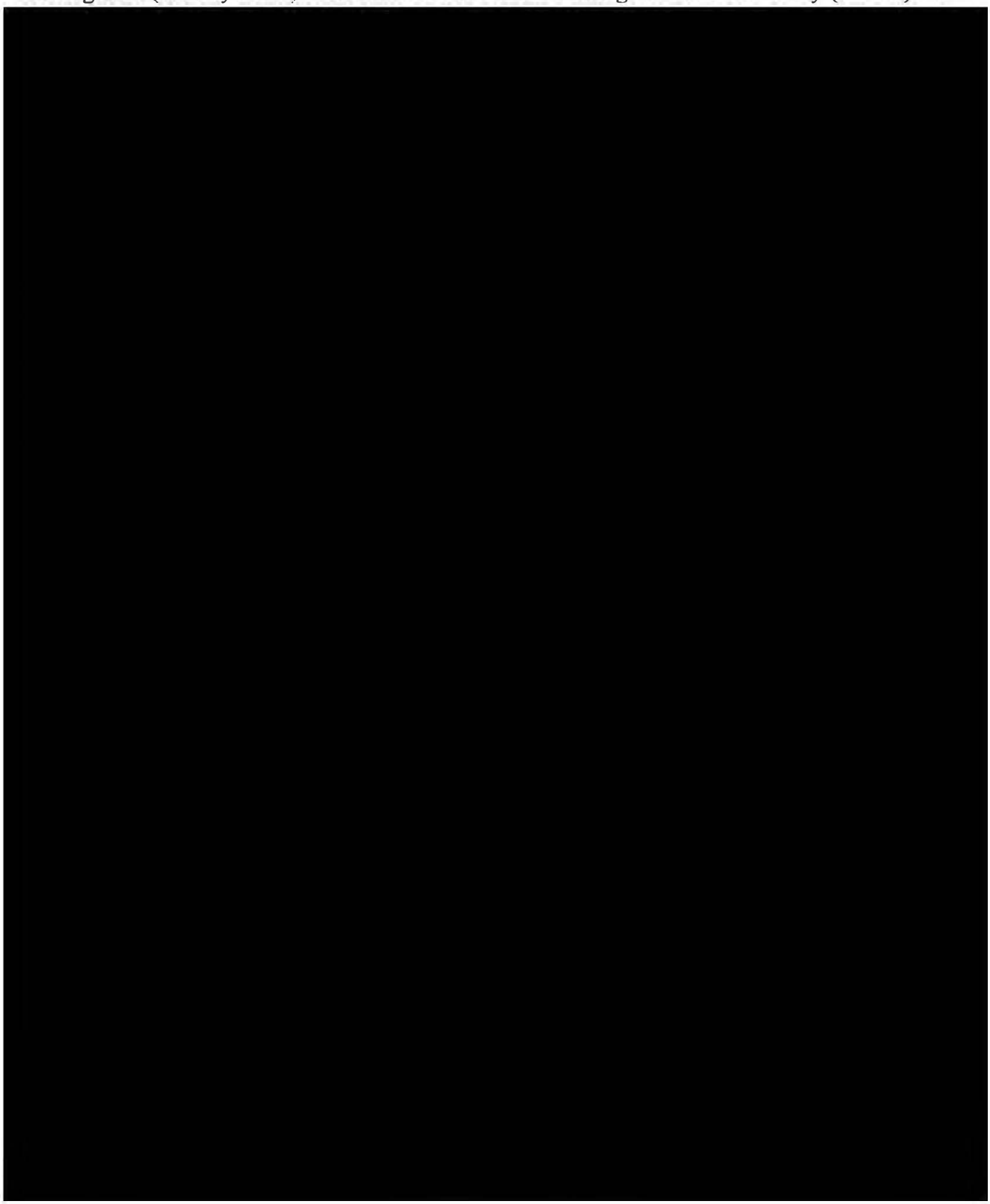

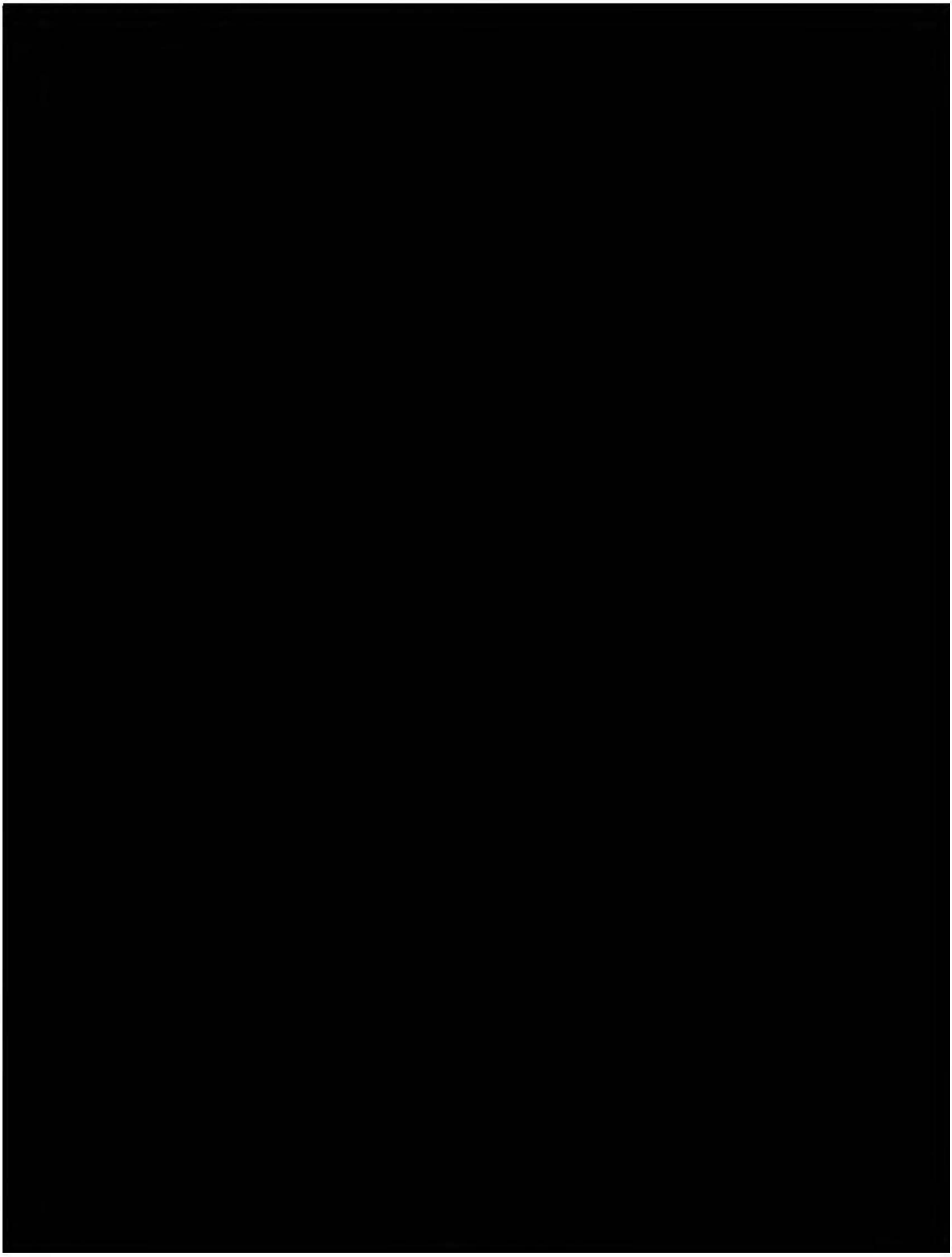

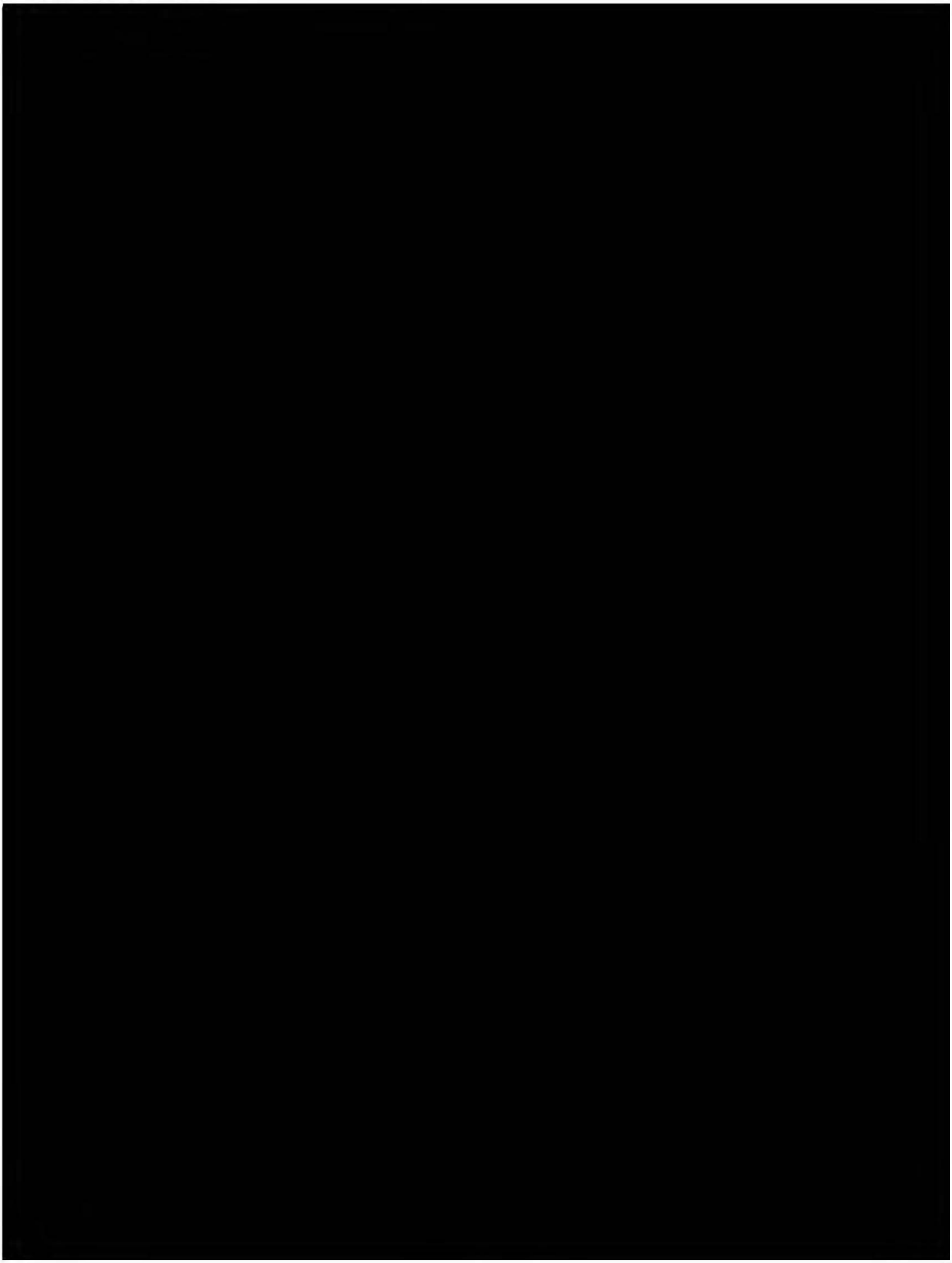

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Cultural Resource Specialist-Archaeologist (PQI)
State of Alaska DOT&PF Northern Region

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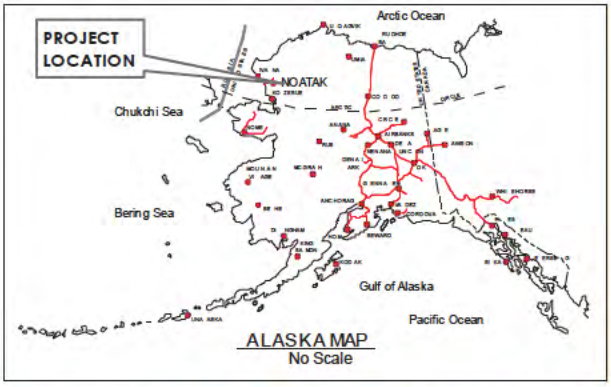
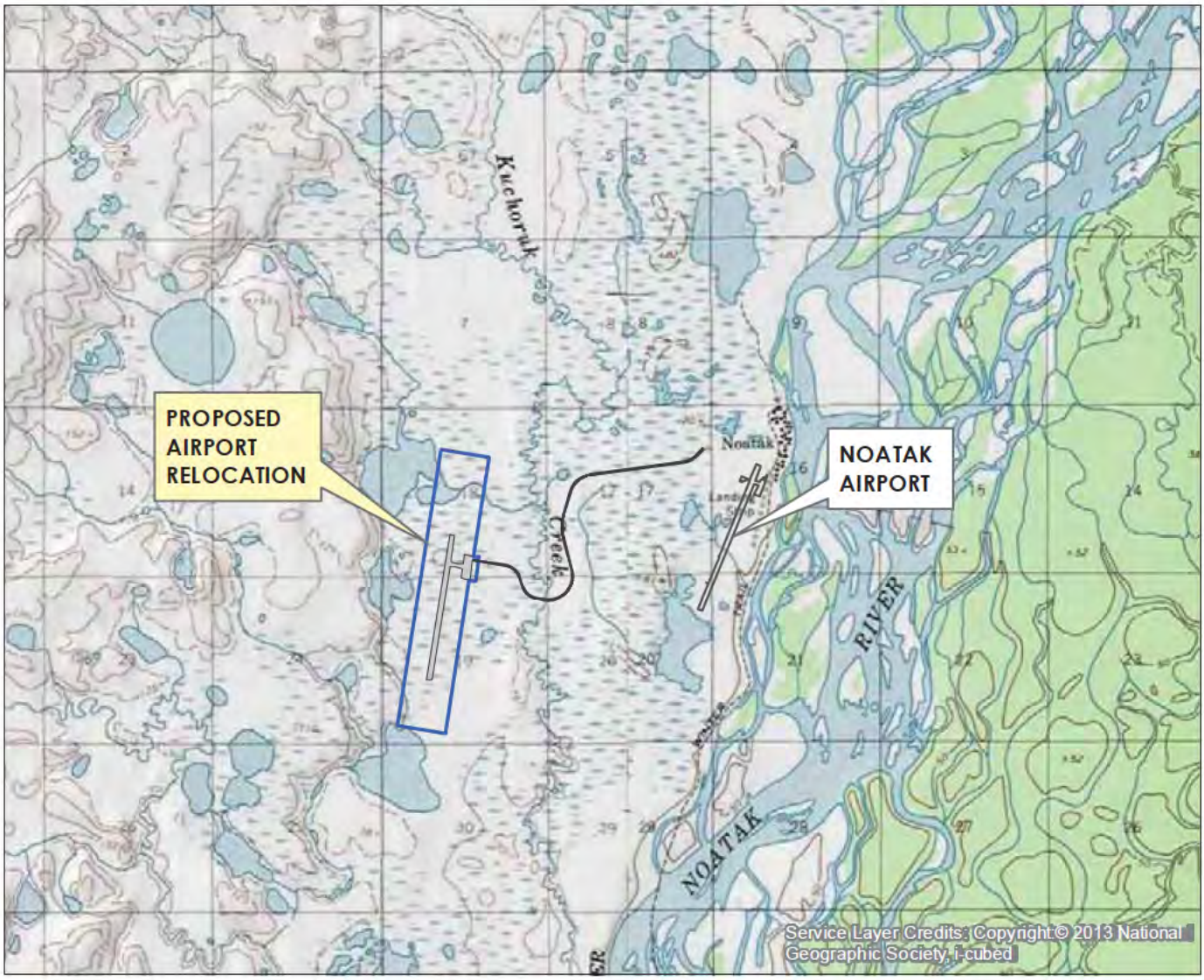




Project Origin: City of Noatak
Kotzebue Recording District,
T25, R19W, Sections 5,8,16-21, 29-32
T26, R19W, Sections 5-7, 18-20, 29, 32
T27, R19W, Sections 4, 5, 9, 16, 20, 21, 29, 32
T28, R19W, Sections 5-7, 17-21, 28, 33
T29, R19W, Sections 7, 17, 18, 20, 21, 27, 28, 33, 34
Kateel River Meridian

0 0.5 1 2 Miles
1:63,360 (at original document size of 8.5x11)

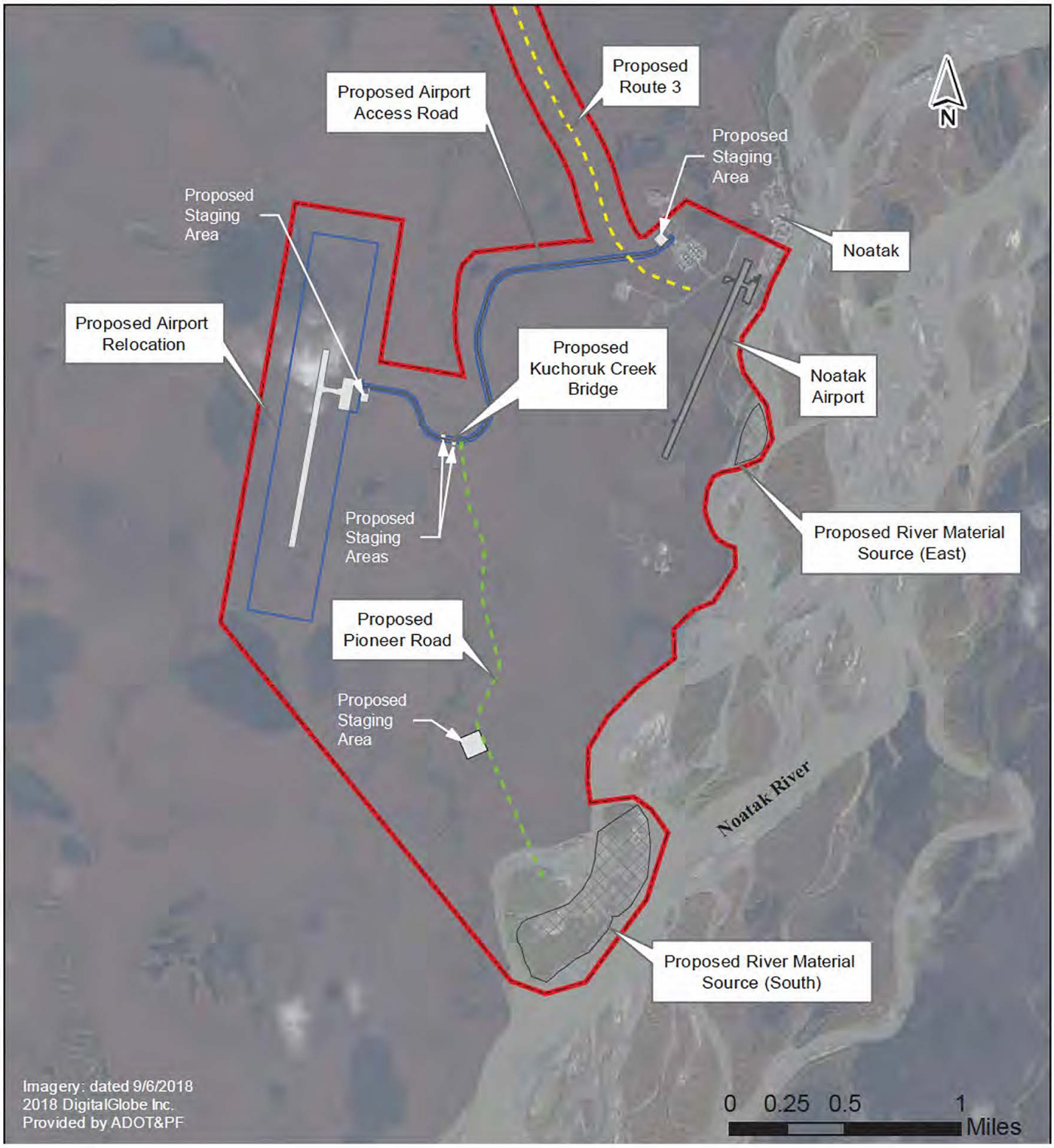
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Location & Vicinity Map

DATE: February, 2019 | FIGURE 1

U:\20470590000\GIS\mxd\Section 106\20470590000_Sec106_Fig-01_Loc-Vic_Map.mxd Revised: 2019-02-12 By: cpannone



LEGEND

- Preliminary Area of Potential Effect (APE)
- Proposed Airport Property
- Proposed Runway & Apron
- Proposed Winter Snow Road (Route 3)
- Proposed Pioneer Road

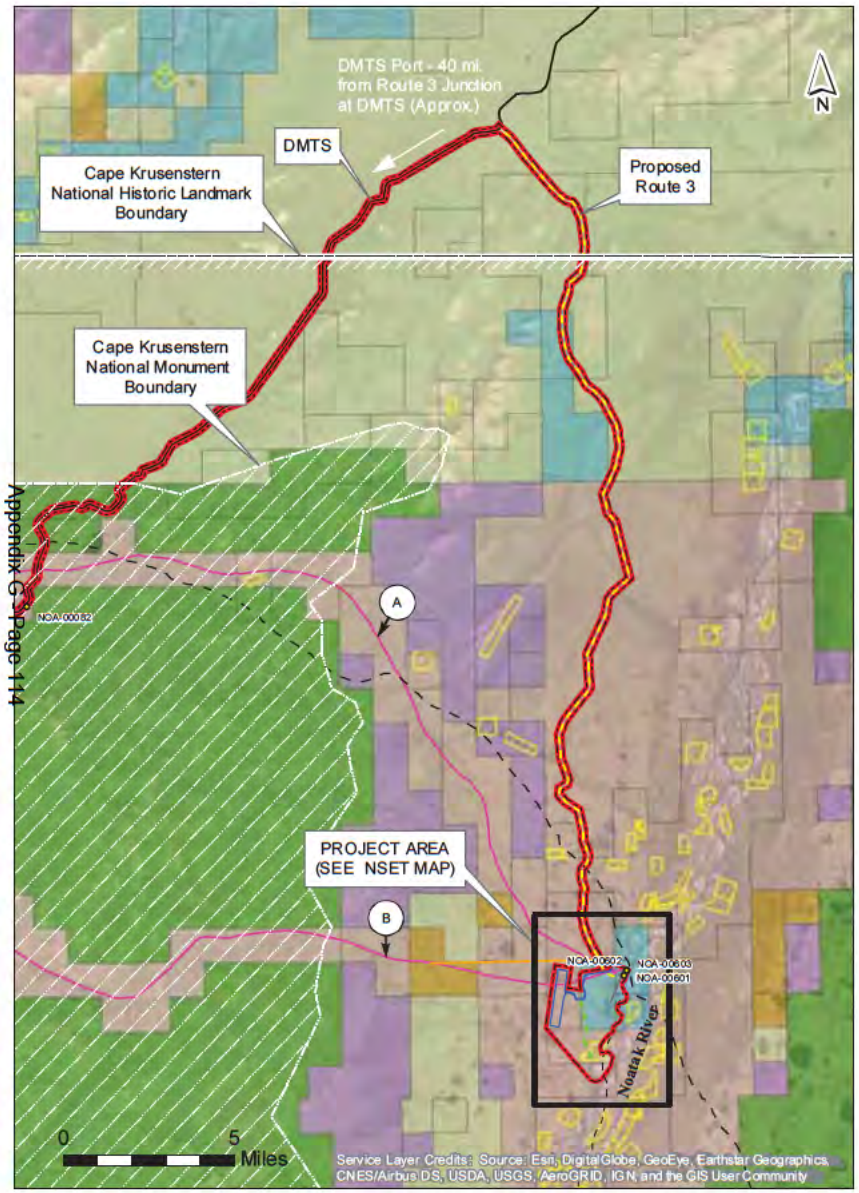
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

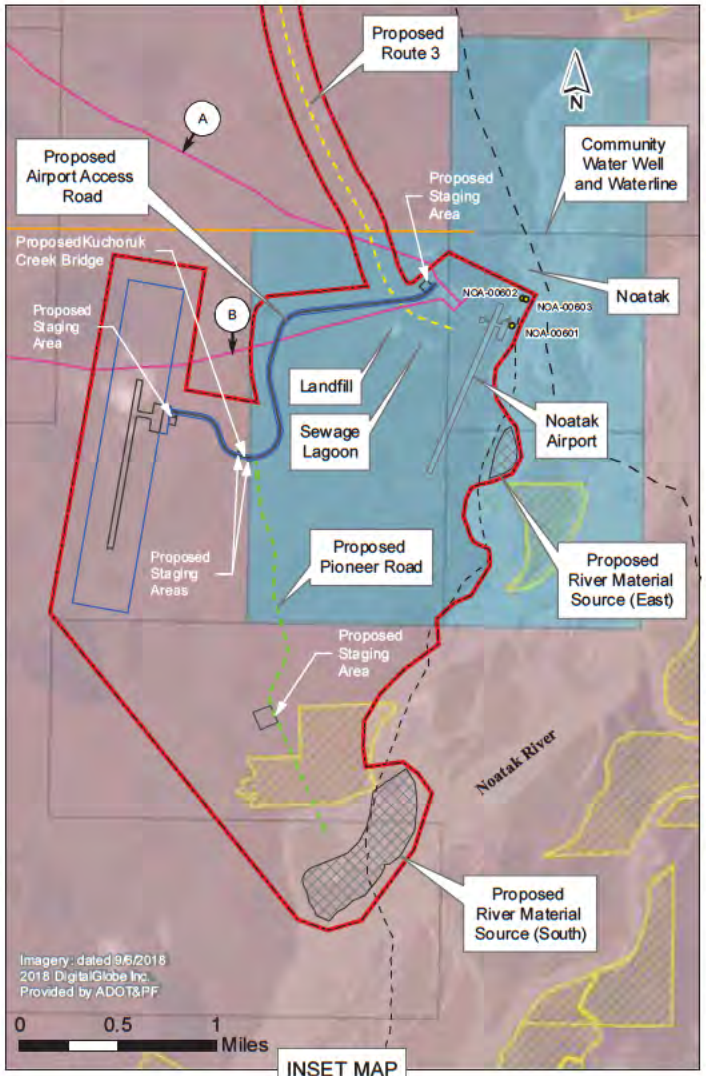
NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Preliminary APE

DATE: February, 2019 | FIGURE 2

\\2047059000\GIS\mxd\Section 106\2047059000_Sec106_Fig-02_APE_.mxd Revised: 2019-02-12 By: cpannone





LEGEND

- Preliminary Area of Potential Effect (APE)
- Proposed Airport Property
- Proposed Runway & Apron
- Proposed Airport Access
- Proposed Winter Snow Road (Route 3)
- Proposed Pioneer Road
- National Park Service Easements
- 17(b) Easement
- NAB Winter Trail
- Kotzebue - Noatak Trail (RS2477 Trail)
- Alaska Heritage Resources Survey Site

LAND OWNERSHIP

- BLM
- National Park Service
- Native Corporation
- Other Private or Municipal
- State
- State and Native
- Native Allotment

Notes and Citations

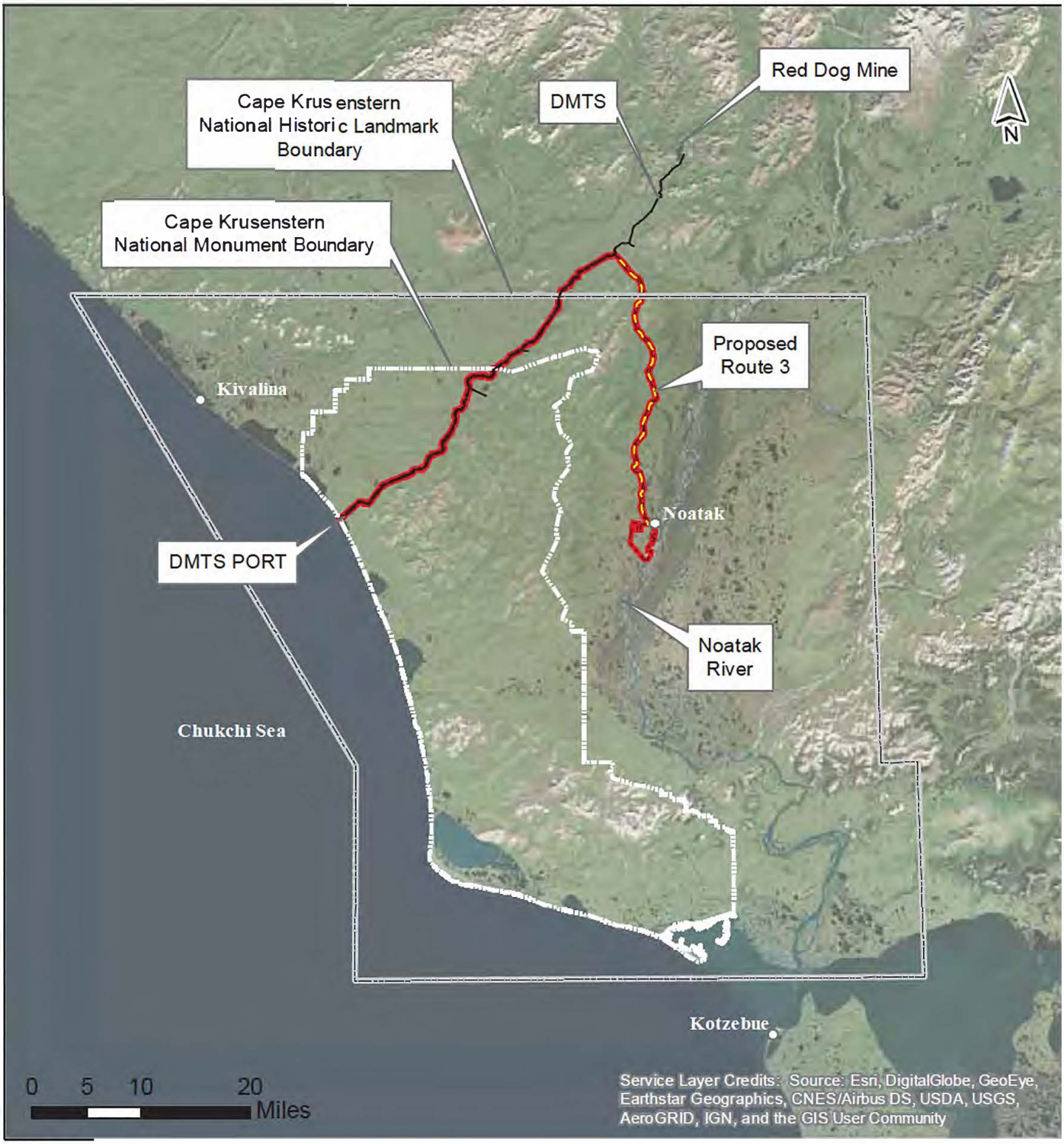
1. Coordinate System: NAD 1983 State Plane Alaska 7 FIPS 5007 Feet
2. Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Orthoimagery Noatak 2016 SID.
3. Land Status Data Source: Originator: Alaska Department of Natural Resources, Information Resource Management, Title: General Land Status - October 2017 - All Attributes - Clipped to 1:63,360 Coastline (EPSG 3338 NAD83 Alaska Albers).

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Land Ownership and Preliminary APE

DATE: February, 2019 | FIGURE 3



LEGEND

- Preliminaty Area of Potential Effect (APE)
- DeLong Mountain Transportation System (DMTS)
- Proposed Winter Snow Road (Route 3)

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Cape Krusenstern National Historic Landmark

DATE: February, 2019 | FIGURE 4

i:\2047059000\GIS\mxd\Section 106\2047059000_Sec106_Fig-04_Cape Krusenstern NHL.mxd revised: 2019-02-11 By: cpannone

United States Department of the Interior

NATIONAL PARK SERVICE
Alaska Region
240 West 5th Avenue, Room 114
Anchorage, Alaska 99501

IN REPLY REFER TO:

1.B (AKRO-CR)

April 1, 2019

VIA ELECTRONIC MAIL – NO HARD COPY TO FOLLOW

Thomas A. Gamza
State of Alaska DOT&PF, Northern Region
2301 Peger Road
Fairbanks, AK 99709-5316

Subject: Noatak Airport Relocation Project. State/Federal Project No. Z614780000/Pending, Initiation of Consultation

Dear Mr. Gamza:

Thank you for reinitiating consultation for the proposed Noatak Airport Relocation Project, State/Federal Project No. Z614780000. The National Park Service (NPS) continues to serve as a consulting party for this project under Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. § 306108) to help ensure the integrity of Cape Krusenstern Archeological District National Historic Landmark (NHL).

As described, the project consists of building a new airport and runway, building an access road and bridge crossing Kuchoruk Creek, opening in-river material extraction sites and constructing access roads to those sites, constructing a 28.2- mile winter snow road from Delong Mountain Transportation System to the Noatak Airport construction site (DMTS winter haul route), and installing gravel pads for staging areas.

[redacted]

Based on your summary of previous cultural resource identification efforts we understand that [redacted] cultural sites were identified in the APE. We also understand that the proposed DMTS winter haul route and a material site pioneer access road (north of Kuchoruk Creek/Noatak River confluence) have not been surveyed. We recognize that there is still the potential for discovery in the un-surveyed areas as the project is implemented. Because the Cape Krusenstern

Archeological National Historic Landmark is designated under Criterion D, for its potential to provide important information about history of the lower Noatak Valley as "an avenue between coast and interior for millennia, a wealth of archaeological sites…with a high potential for new studies on the prehistoric occupation…of the western arctic" and Beringia. The nomination notes that the Village of Noatak is on a site "evidencing prehistoric occupation."

Given that there is potential for finding cultural resources within the NHL, we would appreciate receiving a copy of plans for inadvertent discoveries, as well as final reports with information that arises as a result of inadvertent discoveries.

We appreciate DOT&PF's inclusion of NPS throughout this Section 106 process. If you have questions about our comments or concerns, please contact Rhea Hood at 907-644-3460 or rhea_hood@nps.gov.

Sincerely,

Jennifer Pederson Weinberger
Cultural Resources Program Manager

cc:
Rhea Hood, NPS Archeologist
Maija Lukin, Superintendent, NPS Western Arctic Parklands
Mark Rollins, Review & Compliance, Alaska State Historic Preservation Office

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Transportation and Public Facilities

NORTHERN REGION
Design and Engineering Services

2301 Peger Road
Fairbanks, Alaska 99709-5388
Main: 907-451-2200
Fax: 907-451-5126
TDD: 907-451-2363
dot.alaska.gov

In Reply Refer To:
Noatak Airport Relocation
Project Numbers (State/Federal): Z614780000/AIP TBA
No Historic Properties Adversely Affected
Attention: This finding contains no (0) DOEs

August 26, 2021

Ms. Judith Bittner
State Historic Preservation Officer
Alaska Office of History and Archaeology
550 W. 7th Avenue, Suite 1310
Anchorage, Alaska 99501-3565

Dear Ms. Bittner:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Alaskan Region, Airports Division of the Federal Aviation Administration (FAA), proposes to relocate the Noatak Airport approximately 2 miles west of Noatak, AK (Noatak Airport Relocation). The existing airport and community are located 48 miles northwest of Kotzebue, and 71 miles north of the Arctic Circle. The proposed project is located at 67°33'39" North Latitude and 162°58'48" West Longitude (see Table 1 and Figure 1).

Table 1. Project location

Township	Range	Section(s)	USGS Quad Map1:63,360	Meridian
025N	019W	5, 8, 16-21, 29-32	Noatak C-2	Kateel River
026N	019W	5-7, 18-20, 29,32	Noatak C-2	Kateel River
027N	019W	4-5, 9, 16, 20-21, 29, 32	Noatak C-2	Kateel River
028N	019W	5-7, 17-21, 28, 33	Noatak C-2	Kateel River
029N	019W	7, 17-18, 20-21, 27-28, 33-34	Noatak C-2	Kateel River

The DOT&PF on behalf of FAA finds **that no historic properties would be adversely affected** by the proposed project pursuant to 36 CFR§800.5(b), implementing regulations of Section 106 of the National Historic Preservation Act. This submission provides documentation in support of this finding, as required at 36 CFR§800.11(e).

Project Background
On January 3, 2006, a findings letter was submitted by the DOT&PF Northern Region Environmental Coordinator on behalf of FAA to the Alaska State Historic Preservation Officer (SHPO) with a finding of

No Historic Properties Affected for geotechnical sampling on river bars in support of the Noatak Airport Relocation Project. The SHPO concurred with that finding on January 31, 2006 (SHPO File No. 3130-IRFAA).

On December 21, 2007, a findings letter was submitted by the DOT&PF Northern Region Environmental Coordinator on behalf of FAA with a finding of No Historic Properties Affected for the Noatak Airport Relocation Project. The SHPO concurred with that finding on January 31, 2008 (SHPO File No. 3130-IRFAA).

Since 2008, proposed project elements have changed. On February 21, 2019, the DOT&PF re-initiated consultation with the SHPO and other consulting parties for assistance in determining the revised Area of Potential Effect (APE) and identifying historic properties that may be affected by the proposed project.

Project Description

The currently proposed project includes the following features (Figures 2-3):

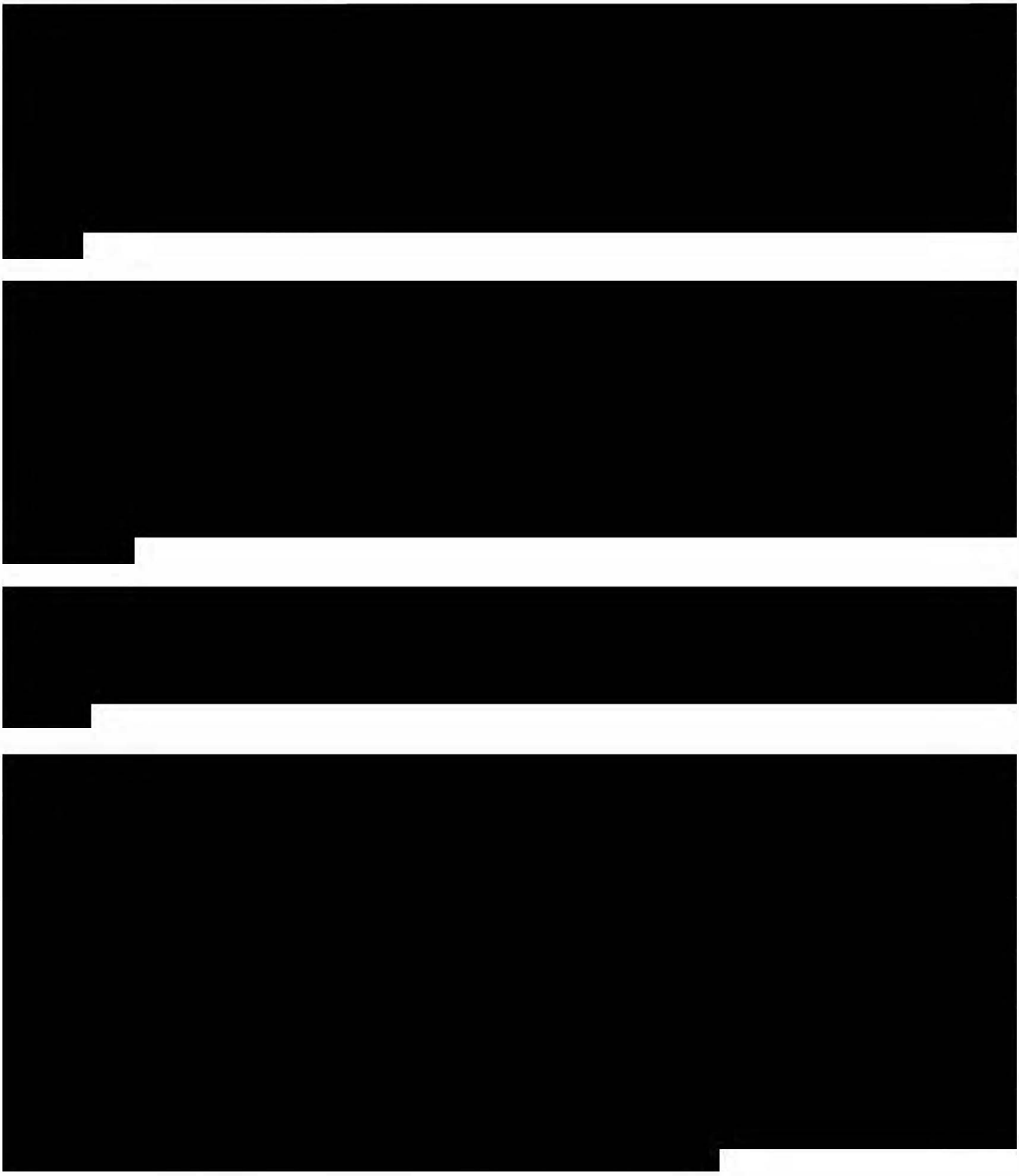
- Airport relocation located approximately 2 miles west of Noatak.
- Installation of the new Airport Access Road with overhead electrical line and new bridge at Kuchoruk Creek.
    - The access road would be approximately 2 miles long and 24 feet wide with side slopes that include safety features (e.g., signage) where required, and culverts installed to maintain drainage patterns.
    - The bridge would cross Kuchoruk Creek and be designed to accommodate high water and aufeis (ice accumulation on the road surface). Abutments would be placed on either side of the creek within the floodplain.
- River Material Sources (South and East) with installation of a new overland access road.
    - Local gravels within the Noatak River drainage would be used for construction.
    - A pioneer material source access road to accommodate safe summertime access between River Material Source (South) and the Airport Access Road.
- Equipment and Materials Mobilization.
    - Equipment and materials will be transported along the existing Delong Mountain Transportation System (DMTS) (see Figure 3 in red/black) from the Red Dog Mine Port approximately 40 miles inland to the proposed start of a winter snow road (Route 3) (see Figure 3).
    - Route 3 would provide overland access between the DMTS and the Airport Access Road via a 28.2-mile winter snow road.
    - Construct gravel pads for staging areas (see Figure 3).

Area of Potential Effect

The Project Area of Potential Effect (APE) is shown on Figures 2-4. The APE includes areas of potential ground-disturbance from construction activities at the locations of the proposed airport site, airport access road, Kuchoruk Creek Bridge, in-river material sources, staging areas, and equipment and material haul routes. Visual effects on adjacent properties were taken into consideration when determining the APE, and none were identified.

Identification Efforts

[redacted]



Additional Identification Efforts

A search of the DOT&PF Northern Region Cultural Resources Library indicated that the project APE in and around the Noatak Airport [including the proposed winter haul route, proposed pioneer road, proposed runway and apron, proposed staging areas, and the proposed river material sources (east and south)] has

[1] *Referred to in this document as the winter trail or the trail*

undergone several cultural resources surveys in support of telecommunications and DOT&PF projects (see Blanchard and McIntosh 2016; Holman 2020; Mobley 2006, 2007; and Wiersum 1986). The Delong Mountain Transportation System haul route has also been surveyed for cultural resources in support of the Red Dog Mine operations and expansion (see Anderson 1977; Brownell and Blake 2017; Gaines et al. 2006; Gerlach and Hall 1986; Hall 1982, 1983, 1987; McClenahan and Gibson 1990; McConnell 2005; SRBA 2011, 2012, 2013, 2014; Tremayne 2016). The DOT&PF Archaeologist-Cultural Resources Specialist (PQI) believes that this level of identification is sufficient for this project.

Finding of Effect

NOA-00042, Cape Kruzenstern Archaeological District National Monument-National Historic Landmark (NHL) – As the entirety of the Noatak Airport Relocation Project is located within the Cape Kruzenstern NHL, it is important to assess the effects that project activities will have on the NHL. The current project APE where ground disturbing activities will occur was surveyed for cultural resources by Holman (2020) and portions of the project APE were surveyed by Blanchard and McIntosh (2016), Mobley (2006, 2007), and Wiersum (1986). No additional AHRS sites within the project were uncovered as a result of those cultural resources surveys. However, because the Cape Kruzenstern NHL is significant under Criterion D, and has a wealth of archaeological sites with a high potential for discovering new sites, the DOT&PF has developed an inadvertent discovery plan (see Attachment 2) to help ensure that project activities do not cause an adverse effect on the NHL. The inadvertent discovery plan establishes protocols to follow if cultural resources are encountered during construction activities. With the extensive archaeological survey coverage within the project APE coupled with the inadvertent discovery plan in place for the NHL, the DOT&PF Northern Region PQI believes that a **No Historic Properties Adversely Affected** finding is appropriate for the Cape Kruzenstern National Historic Landmark and seeks the SHPO's concurrence with this finding.

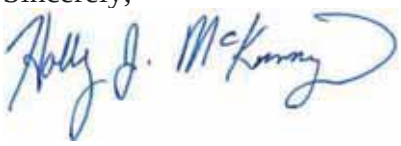
Overall, the DOT&PF Northern Region PQI seeks concurrence from the Alaska SHPO for a finding of **No Historic Properties Adversely Affected** for the project as presented.

Consulting Parties

On February 21, 2019, the DOT&PF, on behalf of FAA sent out consultation initiation letters to the following potential interested parties regarding this project: The Alaska State Historic Preservation Officer (SHPO), National Park Service (NPS); the Native Village of Kivalina; the City of Kivalina; the Native Village of Noatak; NANA Regional Corporation; Maniilaq Association; the Northwest Arctic Borough; NPS-Western Arctic National Parklands; and the Bureau of Indian Affairs (BIA). Comments were received from Mark Rollins of the SHPO office reference 3130-1R FAA RevComp ID #2019-00227 on March 12, 2019 indicating that the project is within the boundary of NOA-00042, Cape Kruzenstern Archaeological District National Monument-National Historic Landmark (NHL). As such, they requested that DOT&PF give special consideration to the project's possible effects on the historic properties within and adjacent to the APE. The SHPO had no objections to the APE and requested that we contact Rhea Hood at the NPS to discuss the project's potential effects on the NHL. Comments were also received from Jennifer Pederson Weinberger and Rhea Hood of the NPS on April 1, 2019 requesting that an inadvertent discovery plan be implemented for the project and requesting final reports with information that arises as a result of inadvertent discoveries be sent to NPS. An inadvertent discovery plan is included as part of this findings letter (see Attachment 2). No other comments were received.

Please direct your concurrence or comments to me at my address above, by telephone 907-451-2227, or by e-mail at holly.mckinney@alaska.gov.

Sincerely,



Holly J. McKinney
Cultural Resource Specialist -Archaeologist (PQI)
State of Alaska DOT&PF, Northern Region

Enclosures:

Figure 1: Location and Vicinity map
Figure 2: Area of Potential Effect
Figure 3: Land Ownership and Area of Potential Effect
Figure 4: Cape Kruzenstern National Historic Landmark & National Monument Boundary

Attachment 1: Noatak Airport Relocation Project: Cultural Resources Survey Report (Holman, 2020).
Attachment 2: Noatak Airport Relocation Project Inadvertent Discovery Plan

References:

Anderson, Douglas
1977 Prehistoric and Early Historic Human Settlements and Resources Use Areas in the Selawik Drainage, Alaska. Report prepared for the United States National Park Service.

Blanchard, Morgan R., and Jill Baxter-McIntosh
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2011 Nuiqsut Caribou Subsistence Monitoring Project: Results of Year Two Hunter Interviews. Prepared for ConocoPhillips, Alaska, Inc. Anchorage, Alaska.

Braund, Stephen R. and Associates
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Braund, Stephen R. and Associates
2014 Nuiqsut Caribou Subsistence Monitoring Project: Results of Year Five Hunter Interviews. Prepared for ConocoPhillips, Alaska, Inc. Anchorage, Alaska.

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2017 Cultural Resource Surveys for the Tailings Pond Dam Raise, Dump Expansion, and Port Improvements at Red Dog Mine, Northwest Arctic Borough, Alaska. Report prepared for Teck Alaska Incorporated.

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Hall, Edwin S.
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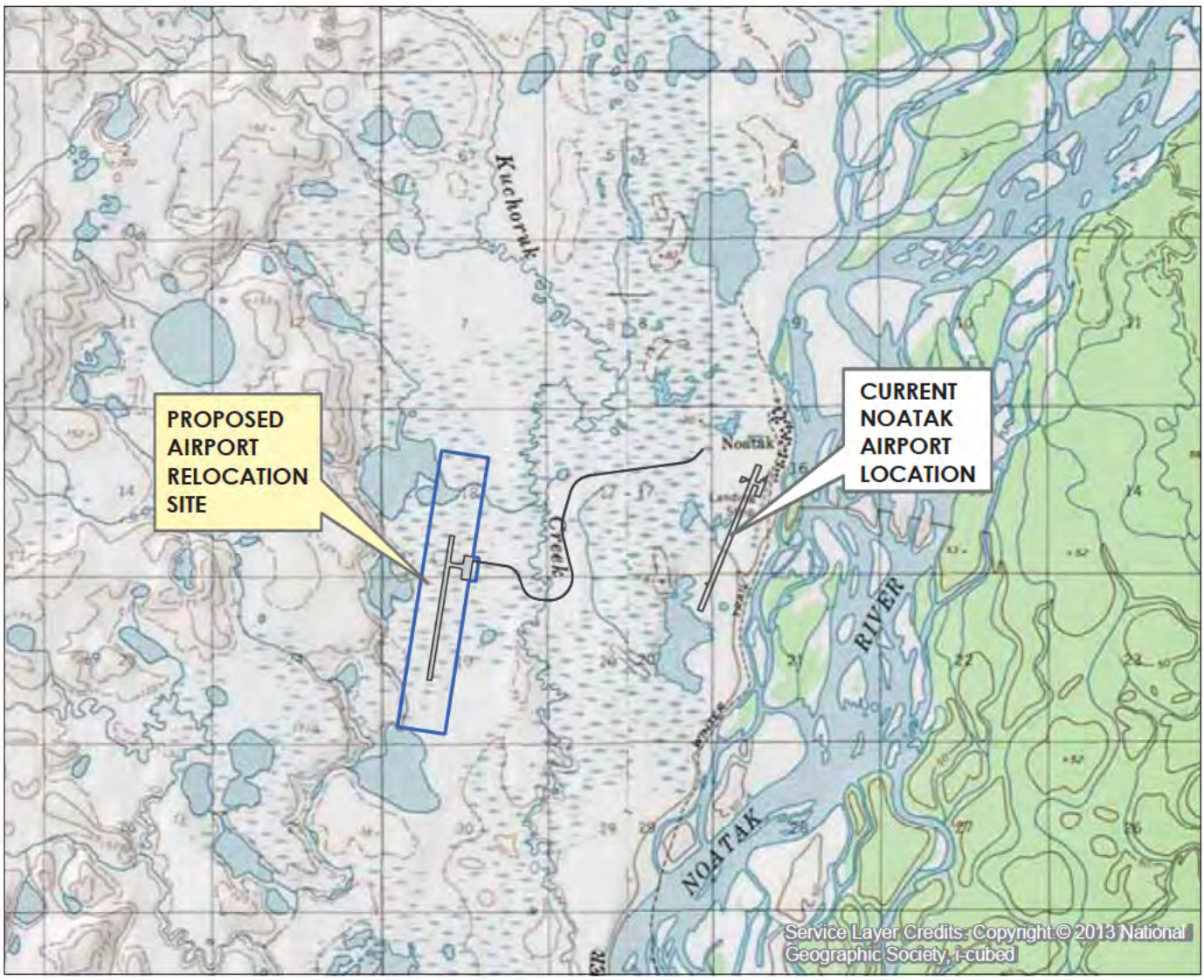
Wiersum, Wayne E.
1986 An Archaeological Appraisal of the Proposed Airport Project at Selawik, Ambler, Deering, and Noatak, Alaska. Report prepared for the Alaska Department of Transportation and Public Facilities.

Electronic cc w/ enclosures:

Jack Gilbertsen, FAA, Alaska Region, Regional Environmental Manager
Christopher Johnston, P.E., DOT&PF Northern Region, Project Manager
Melissa Jensen, DOT&PF, Northern Region, Environmental Impact Analyst
Molly Proue, DOT&PF Statewide Environmental NEPA Manager
Kathy Price, DOT&PF, Statewide Cultural Resources Manager



Project Origin: City of Noatak
Kotzebue Recording District,
T25, R19W, Sections 5,8,16-21, 29-32
T26, R19W, Sections 5-7, 18-20, 29, 32
T27, R19W, Sections 4, 5, 9, 16, 20, 21, 29, 32
T28, R19W, Sections 5-7, 17-21, 28, 33
T29, R19W, Sections 7, 17, 18, 20, 21, 27, 28, 33, 34
Kateel River Meridian

0 0.5 1 2 Miles
1:63,360 (at original document size of 8.5x11)

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Location & Vicinity Map

DATE: August 2021 | FIGURE 1

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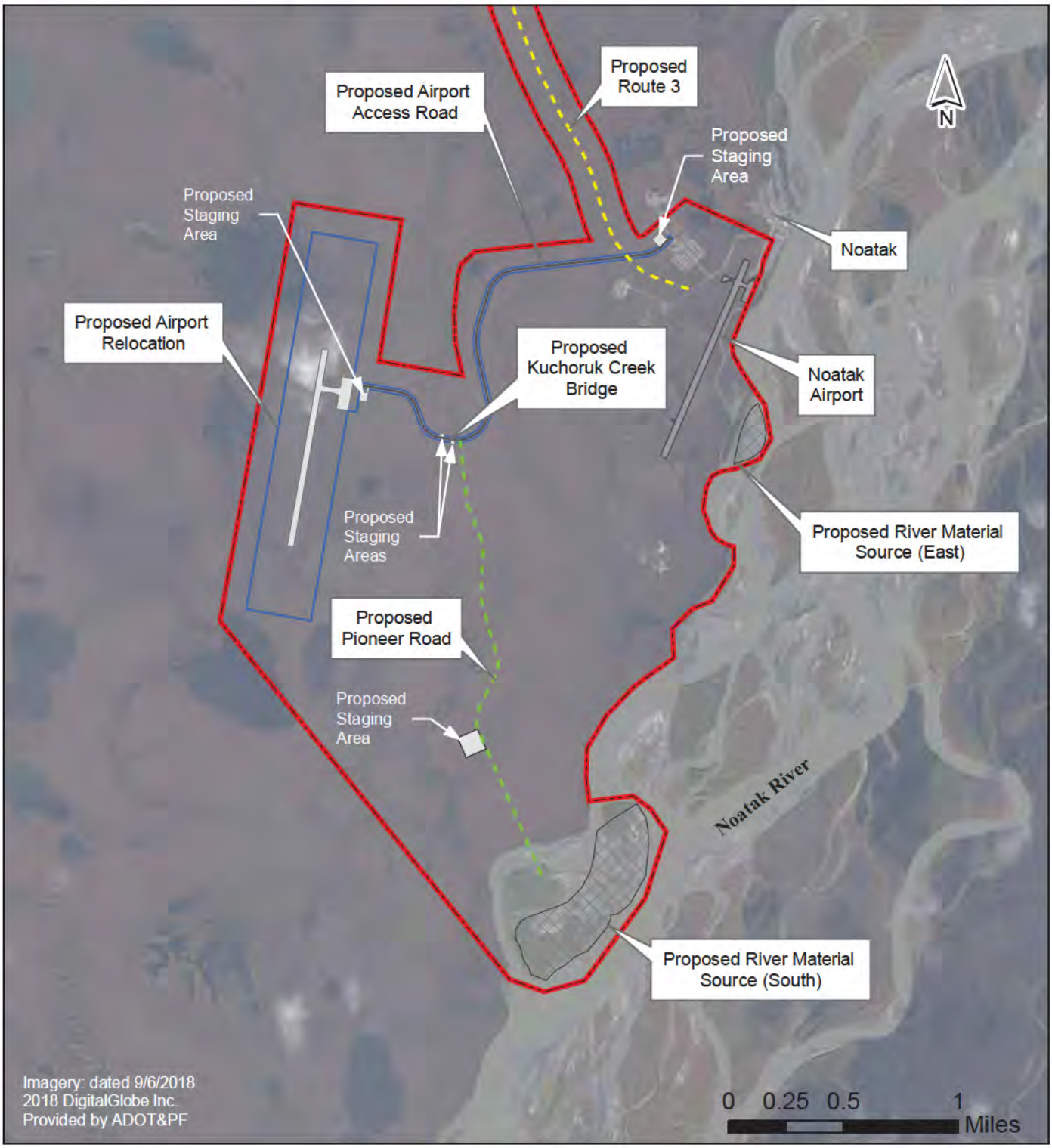


LEGEND

- Area of Potential Effect (APE)
- Proposed Airport Property
- Proposed Runway & Apron
- Proposed Winter Snow Road (Route 3)
- Proposed Pioneer Road

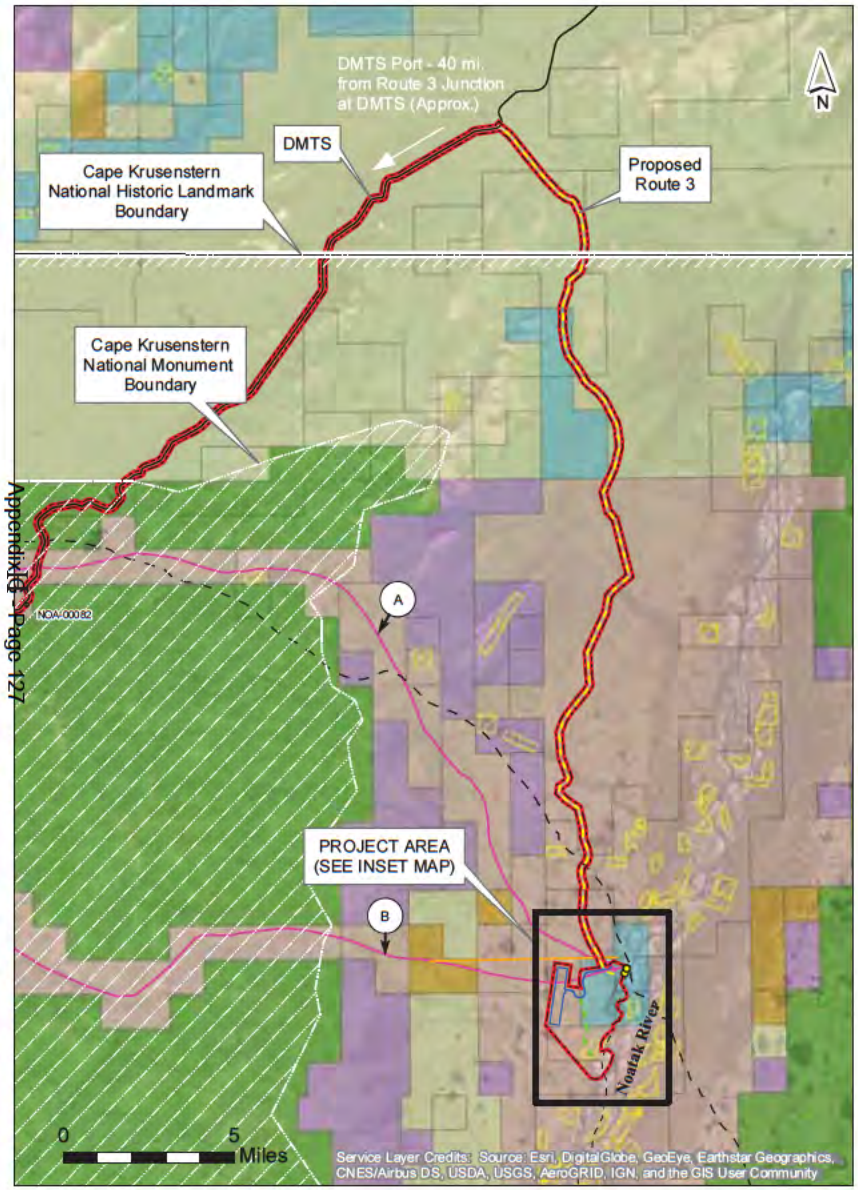
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

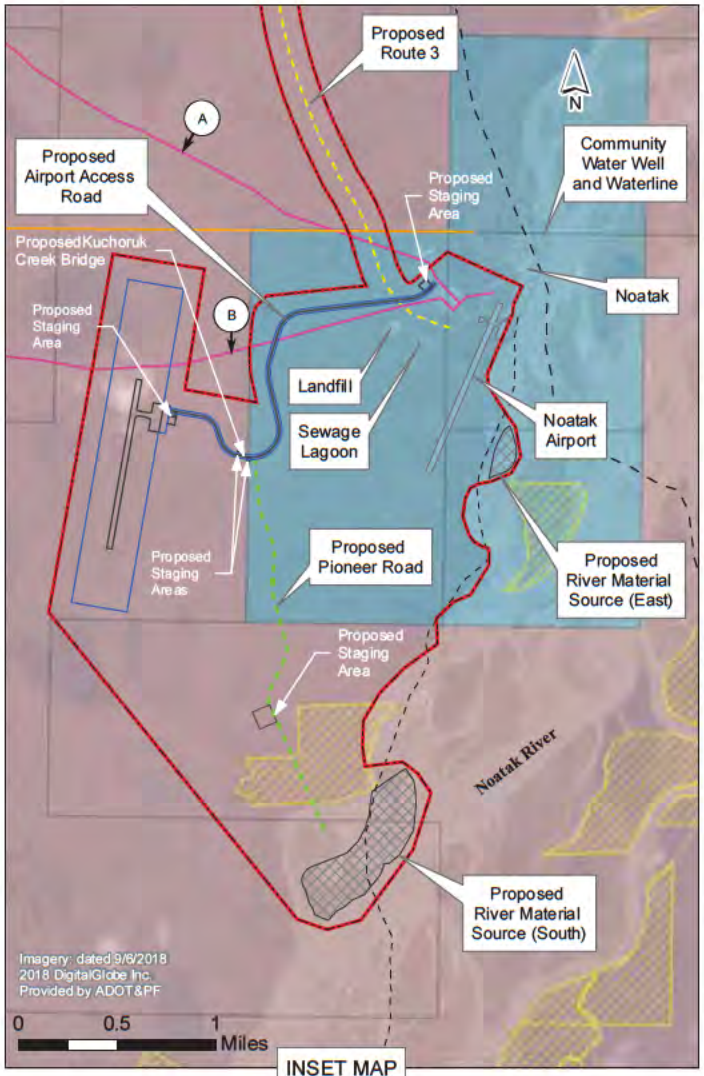
NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Area of Potential Effect

DATE: August 2021 | FIGURE **2**

U:\20470590000\GIS\mxd\Section 106\20470590000_Sec106_Fig-02_APE_.mxd Revised: 2019-05-07 By: cpannone





LEGEND

- Area of Potential Effect (APE)
- Proposed Airport Property
- Proposed Runway & Apron
- Proposed Airport Access
- Proposed Winter Snow Road (Route 3)
- Proposed Pioneer Road
- National Park Service Easements
- ANCSA 17(b) Easement
- NAB Winter Trail
- Kotzebue - Noatak Trail (RS2477 Trail)
- Alaska Heritage Resources Survey Site

LAND OWNERSHIP

- BLM
- National Park Service
- Native Corporation
- Other Private or Municipal
- State
- State and Native
- Native Allotment

Notes and Citations:

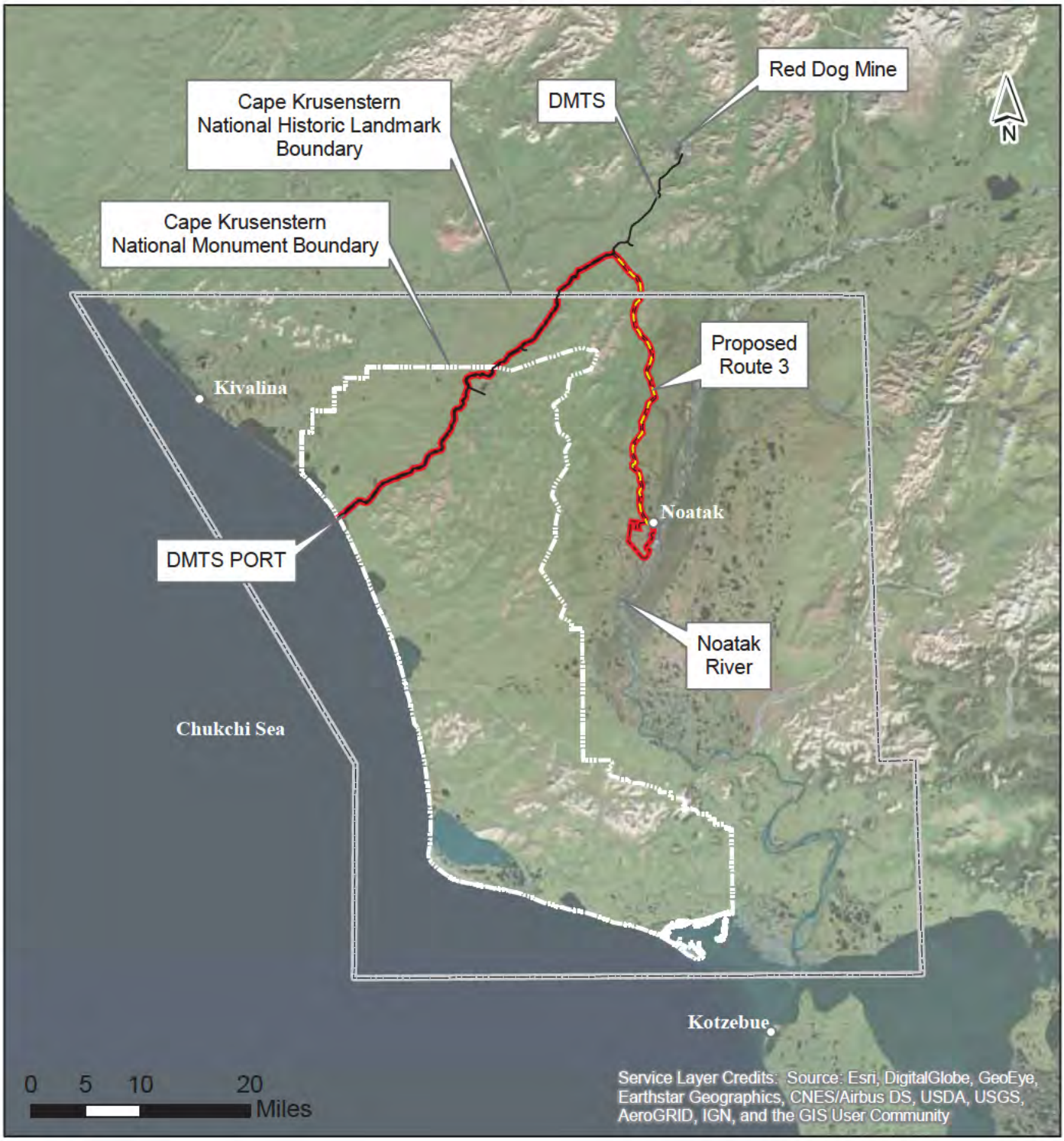
1. Coordinate System: NAD 1983 StatePlane Alaska 7 FIPS 5007 Feet
2. Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Orthoimagery: Noatak 2016 SID.
3. Land Status Data Source: Originator: Alaska Department of Natural Resources, Information Resource Management, Title: General Land Status - October 2017 - All Attributes - Clipped to 1:63,360 Coastline (EPSG 3338 NAD83 Alaska Albers).

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK A RPORT RELOCATION
NOATAK, ALASKA

Land Ownership and APE

DATE: August 2021 | FIGURE 3



LEGEND

- Area of Potential Effect (APE)
- DeLong Mountain Transportation System (DMTS)
- Proposed Winter Snow Road (Route 3)

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Cape Krusenstern
National Historic Landmark

DATE: August 2021 | FIGURE 4

U:\20470590000\GIS\mxd\Section 106\20470590000_Sec106_Fig-04_Cape Krusenstern NHL.mxd Revised: 2019-05-07 By: cpannone

Hillman, Kacy

From: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>
Sent: Thursday, September 23, 2021 7:44 AM
To: Hillman, Kacy; Lindberg, Sara
Subject: FW: Z614780000 Noatak Airport Relocation Findings

From: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Sent: Wednesday, September 22, 2021 12:37 PM
To: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Cc: Gilbertsen, Jack (FAA) <jack.gilbertsen@faa.gov>; Gordon, Keith (FAA) <keith.gordon@faa.gov>; Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>; Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Price, Kathy E (DOT) <kathy.price@alaska.gov>; Proue, Molly M (DOT) <molly.proue@alaska.gov>; Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>
Subject: RE: Z614780000 Noatak Airport Relocation Findings

3130-1R FAA / 2021-00989

Good afternoon Holly,

The Alaska State Historic Preservation Office (AK SHPO) received your correspondence (dated August 26, 2021) concerning the subject project on August 26, 2021. Per ACHP Covid-19 guidance, our office has entered tolling and reviews may be delayed as a result. Federal agencies should consider our comments after the 30-day period until our office has resumed normal work procedures. Following our review of the documentation provided, we concur with the finding of No Historic Properties Adversely Affected. Please note that our office may need to re-evaluate our concurrence if changes are made to the project's scope or design, including changes to materials sources or set-down areas.

In addition to our concurrence, our office has comments on the associated Inadvertent Discovery Plan:

- Please distribute the Inadvertent Discovery plan to NPS staff if you haven't already done so. Our last record of consultation was 2019 with their request to develop the plan. Your point of contact for this is Rhea Hood (rhea_hood@nps.gov).
- The staffing at Alaska State Medical Examiner's Office has changed since the development of the Inadvertent Discovery Plan. Please update the Appendices with the following contacts- Anne Waisanen, Operations Administrator, 907-334-2202, anne.waisanen@alaska.gov and Gary Zientek, M.D., Chief Medical Examiner, 907-334-2200, gary.zientek@alaska.gov

As stipulated in 36 CFR 800.3, other consulting parties such as the local government and Tribes are required to be notified of the undertaking. Additional information provided by the local government, Tribes, or other consulting parties may cause our office to re-evaluate our comments and recommendations. Please note that our response does not end the 30-day review period provided to other consulting parties.

Should unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register of Historic Places eligibility criteria (36 CFR 60.4), in consultation with our office. Please note that some sites can be deeply buried or underwater, and that fossils are considered cultural resources subject to the Alaska Historic Preservation Act.

This email serves as our office's official correspondence for the purposes of Section 106. Thank you for the opportunity to review and comment. Please contact Liz Ortiz at 269-8722 or liz.ortiz@alaska.gov if you have any questions or we can be of further assistance.

Best,
Liz Ortiz

Archaeologist II - Review and Compliance
Alaska State Historic Preservation Office
Office of History and Archaeology
Department of Natural Resources
550 W. 7th Ave, Suite 1310
Anchorage AK, 99501
(907) 269-8722
liz.ortiz@alaska.gov
We are currently teleworking; email communication is best. Be well!

From: Ortiz, Liz M (DNR)
Sent: Thursday, August 26, 2021 2:32 PM
To: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>; DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Cc: Gilbertsen, Jack (FAA) <jack.gilbertsen@faa.gov>; Gordon, Keith (FAA) <keith.gordon@faa.gov>; Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>; Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Price, Kathy E (DOT) <kathy.price@alaska.gov>; Proue, Molly M (DOT) <molly.proue@alaska.gov>
Subject: RE: Z614780000 Noatak Airport Relocation Findings

Good afternoon Holly,

Documentation received and logged with me under file number 2021-00989. Our office is still in tolling, but I will get back to you as soon as I can.

Thanks,
Liz Ortiz

Archaeologist II - Review and Compliance
Alaska State Historic Preservation Office
Office of History and Archaeology
Department of Natural Resources
550 W. 7th Ave, Suite 1310
Anchorage AK, 99501
(907) 269-8722
liz.ortiz@alaska.gov
We are currently teleworking; email communication is best. Be well!

From: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Sent: Thursday, August 26, 2021 10:51 AM
To: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Cc: Ortiz, Liz M (DNR) <liz.ortiz@alaska.gov>; Gilbertsen, Jack (FAA) <jack.gilbertsen@faa.gov>; Gordon, Keith (FAA)

<keith.gordon@faa.gov>; Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>; Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>; Nelson, Brett D (DOT) <brett.nelson@alaska.gov>; Price, Kathy E (DOT) <kathy.price@alaska.gov>; Proue, Molly M (DOT) <molly.proue@alaska.gov>
Subject: Z614780000 Noatak Airport Relocation Findings

Hi Liz,

Please see attached findings letter for the Noatak Airport Relocation project.

Sincerely,
Holly McKinney

Holly McKinney, PhD
Archaeologist (PQI)
Cultural Resource Specialist
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907) 451-2227
Fax (907)451-5126

In-Office Schedule: Monday-Friday 7:00AM-3:00PM

United States Department of the Interior

NATIONAL PARK SERVICE

Interior Region 11 • Alaska
240 West 5th Avenue, Room 114
Anchorage, Alaska 99501

IN REPLY REFER TO:
1.B (AKRO-CR)

October 6, 2021

VIA ELECTRONIC MAIL – NO HARD COPY TO FOLLOW

Holly J. McKinney
Cultural Resource Specialist -Archaeologist (PQI)
State of Alaska DOT&PF, Northern Region
2301 Peger Road
Fairbanks, Alaska 99709-5388

Subject: Noatak Airport Relocation, Project Numbers (State/Federal): Z614780000/AIP TBA, No Historic Properties Adversely Affected

Dear Ms. McKinney:

Thank you for your letter dated August 26, 2021 requesting National Park Service comment on the Noatak Airport Relocation, Project Numbers (State/Federal): Z614780000/AIP TBA.

The above referenced project is within the boundaries of the Cape Krusenstern Archeological District National Historic Landmark (NHL). The National Park Service (NPS) administers the NHL program for the Secretary of the Interior. Federal agencies undertaking a project within an NHL must be in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. The NPS serves as an interested party throughout the Section 106 process to ensure the integrity of the NHL.

We have reviewed the project information provided for the new airport location which includes: installation of a new Airport Access Road with overhead electrical, culverts, and a bridge crossing Kuchoruk Creek; two local gravel sources within the Noatak River drainage area with a new access road; and equipment and material transportation and construction staging areas.

We find the considerations, including negative testing results from multiple past cultural resource surveys in the project Area of Potential Effects and the development of an inadvertent discovery plan, for the Cape Krusenstern Archeological District NHL to be sufficient.

We appreciate being notified of inadvertent discoveries related to the Noatak Airport Relocation and the Cape Krusenstern Archeological District NHL when they occur. Please update the Notification of Cultural Resource Discovery contact list to reflect that the only NPS contact for this project is Rhea Hood, Interior Region 11 - Alaska NHL Program Archaeologist, and remove

both the NPS Acting Regional Director and the Western Arctic National Parklands Superintendent from the list.

Thank you for including NPS as a consulting partner in your plan to protect this NHL. Please direct questions and correspondence to Rhea Hood at rhea_hood@nps.gov. We look forward to working with you to minimize harm to this important archeological district.

Sincerely,

Jennifer Pederson Weinberger
Cultural Resources Program Manager

cc:
Rhea Hood (rhea_hood@nps.gov)
Sarah Meitl, SHPO Review and Compliance Coordinator (sarah.meitl@alaska.gov)

From:	McKinney, Holly Jean (DOT)
To:	Johnston, Christopher F (DOT); Jensen, Melissa L (DOT)
Subject:	RE: [EXTERNAL] Z614780000 Noatak Airport Relocation Findings
Date:	Wednesday, October 13, 2021 11:43:18 AM
Attachments:	3130-1R FAA 2021-00989 SHPO concurrence on Noatak Airport Relocation Project 09222021.pdf

Happy Dance, we already have SHPO concurrence!! See attached. You are good to go Section 106-wise!

Best,
Holly

From: Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>
Sent: Wednesday, October 13, 2021 11:40 AM
To: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>; McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Subject: RE: [EXTERNAL] Z614780000 Noatak Airport Relocation Findings

Wow! I didn't expect that to come back so quick or simple. Now just waiting on SHPO. Yay.

Chris

From: Jensen, Melissa L (DOT) <melissa.jensen@alaska.gov>
Sent: Wednesday, October 13, 2021 11:38 AM
To: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Cc: Johnston, Christopher F (DOT) <chris.johnston@alaska.gov>
Subject: Re: [EXTERNAL] Z614780000 Noatak Airport Relocation Findings

Yay!!! Thank you!

> On Oct 13, 2021, at 11:36 AM, McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov> wrote:
>
> Hi Chris and Missy,
>
> We got concurrence from NPS on Noatak! I will add it to the project file in just a minute. I will also update the contact list in the IDP.
>
> Best,
> Holly
>
> ---
>
> **From:** Hood, Rhea E <Rhea_Hood@nps.gov>
> **Sent:** Wednesday, October 13, 2021 11:16 AM

To: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Cc: Clemens, Janet F <Janet_Clemens@nps.gov>
Subject: Re: [EXTERNAL] Z614780000 Noatak Airport Relocation Findings

Dear Holly,
Thank you for contacting the National Park Service regarding the Noatak Airport Relocation project.

Please see the attached NPS response on the proposed project. Please contact me if you have any questions.

Thank you!
Rhea Hood

Archaeologist, National Historic Landmarks Program
Heritage Assistance Program
National Park Service
Interior Region 11 - Alaska

From: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Sent: Tuesday, August 31, 2021 2:09 PM
To: Hood, Rhea E <Rhea_Hood@nps.gov>
Cc: Clemens, Janet F <Janet_Clemens@nps.gov>
Subject: RE: [EXTERNAL] Z614780000 Noatak Airport Relocation Findings

Hi Rhea,

Yes, please see attached.

Best,
Holly

From: Hood, Rhea E <Rhea_Hood@nps.gov>

Sent: Tuesday, August 31, 2021 11:41 AM
To: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Cc: Clemens, Janet F <Janet_Clemens@nps.gov>
Subject: Re: [EXTERNAL] Z614780000 Noatak Airport Relocation Findings

Hi Holly,
Would it be possible to see a copy of the Noatak Airport Relocation project's inadvertent discovery plan?

Thank you!
Rhea

Archaeologist, National Historic Landmarks Program
Heritage Assistance Program
National Park Service
Interior Region 11 - Alaska

From: McKinney, Holly Jean (DOT) <holly.mckinney@alaska.gov>
Sent: Thursday, August 26, 2021 11:54 AM
To: Hood, Rhea E <Rhea_Hood@nps.gov>
Subject: [EXTERNAL] Z614780000 Noatak Airport Relocation Findings

Dear Ms. Hood,

Please see attached findings for the Noatak Airport Relocation Project.

Sincerely,
Holly McKinney


Holly McKinney, PhD
Archaeologist (PQI)
Cultural Resource Specialist
Alaska DOT&PF
2301 Peger Road / Fairbanks, AK 99709
Office (907) 451-2227
Fax (907)451-5126

In-Office Schedule: Monday-Friday 7:00AM-3:00PM

<NPS to DOT Cape K Noatak airport relocation_2021-10-06.pdf>

APPENDIX I

NOATAK WETLAND AND HABITAT STUDY

Page

NOATAK, ALASKA, AIRPORT RELOCATION:
WETLAND AND HABITAT STUDY

Prepared for

Julianne M. Hanson, P.E., Associate
Environmental Project Manager
USKH, Inc.
2515 A Street
Anchorage, AK 99503

Prepared by

Erik Pullman
ABR, Inc.–Environmental Research & Services
P.O. Box 80410
Fairbanks, AK 99708

April 2006


Printed on recycled paper.

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INTRODUCTION

The village of Noatak, Alaska, is located on the banks of the Noatak River, about 55 miles north of Kotzebue and 70 miles north of the Arctic Circle (Sec. 18, T025N, R019W, Kateel River Meridian). The village is located at the north and western edge of treeline in an area that represents a transition between boreal and tundra biomes. Average summer temperatures range from 40 to 60°F with the average winter temperature ranging from 15 to -21°F. Temperature extremes range from -59 to 75°F. Annual precipitation is 10–13 inches, including 48 inches of snowfall (ADCA 2005).

Noatak began as a hunting and fishing camp in the 19th century and developed into a permanent settlement due to the abundant subsistence resources in the area. A post office was established in 1940. A state-owned airport supports numerous commercial carriers that provide cargo and passenger service throughout the year. Currently, the village is not serviced by barges on the Noatak River (ADCA 2005). The establishment of the Cape Krusenstern National Monument and the Noatak National Preserve and Wildlife Preserve have increased air traffic through Noatak and made it a gateway to Park visitors.

The existing airport is currently threatened by bank erosion along west side of the Noatak River and will need to be relocated. Previous efforts to slow bank erosion using engineered structures have been unsuccessful. Relocation efforts will require the development of gravel resources in addition to the land required to accommodate the new airport facilities. An area southwest of the existing airport (study area) was identified by the Alaska Department of Transportation and Public Facilities (ADOT&PF) as potential locations for a new airport and materials site.

To support environmental permitting needs for airport relocation projects proposed by the ADOT&PF, an assessment was conducted of the wetlands and habitats within the study area boundaries. The wetlands study included classification and mapping of wetlands, vegetation, and wildlife habitats using aerial photointerpretation; a functional assessment of wetland types; and an evaluation of habitat values for selected wildlife species.

METHODS

VEGETATION AND WETLANDS

Wetland and vegetation types were classified and mapped in the study area using true-color aerial photography acquired by Aeromap, Inc., in October 2005, at a nominal scale of 1:2,400 (1 in = 700 ft). Wetland and vegetation community boundaries were delineated based on color signature, plant canopy, and surface relief, along with hydrological indicators such as drainage patterns and surface water connections. Mapping codes used for each wetland type followed *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Wetlands with similar functions were grouped into wetland types to simplify mapping display. Vegetation types were identified using Level IV classifications outlined in *The Alaska Vegetation Classification* (Viereck et al. 1992). Level IV classifications were grouped into Level III vegetation classes for mapping and discussion. Similarly, habitat types were assigned based on vegetation communities and physiographic landscape position (riverine, lowland, upland). Similar habitat types were grouped based on Level III vegetation classifications for mapping and reporting. No existing wetland maps from the National Wetlands Inventory (NWI) were available for the study area.

Maps were produced by digitizing polygons of each wetland, vegetation, or habitat type using *ArcMap GIS 9.1* software (ESRI, Redlands, CA). Maps were produced in the same spatial coordinate system as the aerial photography (Alaska State Plane, NAD83). Wetland types are presented in standard NWI map annotation; Alaska vegetation classes are presented according to Viereck et al. (1992). A tabular key to these annotations is provided with the map.

WETLAND FUNCTIONAL ASSESSMENT

The functional importance of wetlands in the study area was evaluated using criteria outlined in the *Literature Review and Evaluation Rationale* of the Wetland Evaluation Technique (Adamus et al. 1991). Because no field verification surveys were performed for this project, wetland functions were inferred from aerial photographic interpretation (open water connections, vegetation community types, landscape position), and our experience from surveys in similar areas of Alaska (Koyuk Airport, Rock Creek Mine, Glacier Creek Road).

The general procedure to evaluate wetland functions is based on the Hydrogeomorphic (HGM) Classification System (Brinson 1993). HGM models have not been developed for all of the wetlands found in study area, so this modified approach was used so that all wetlands would be evaluated using the same method. The relative importance of ten processes or attributes, encompassing hydrological, water quality, ecological, and social functions of wetlands in the project area were qualitatively ranked into categories of low, medium, and high importance. Many of these attributes are not exclusive to wetlands in the area.

Most wetland functional assessment rankings were based on landscape position, wetland size, relative abundance, and current knowledge of the study area. Additional information used in the evaluation included local topography, available information on animal use, and plant community structure. To simplify the number of wetland types evaluated, wetlands that were similar in function and vegetation structure were grouped into broader categories.

HYDROLOGY

Hydrology functions were determined from the topographic relation of the wetland surface to the local water table. For basins, the presence of an inlet or outlet (or both) was determined from aerial photography. Three specific processes were considered.

Ground water discharge—Movement (vertical or lateral) of water from the subsurface to the surface.

Ground water recharge—Downward movement of water from a wetland into the subsurface.

Erosion control and flow regulation— Various mechanisms that slow or impede the movement of water downslope and thus reduce its erosive force and moderate local stream flows.

WATER QUALITY

Water quality functions are wetland processes that can remove sediments, nutrients, and anthropogenic contaminants from the water while contributing important material to the invertebrate food web. Three general processes were considered.

Sediment/toxicant retention—A combination of physical and biological processes that result in the reduction of suspended sediment of water moving across or through a wetland.

Nutrient retention—Biological processes that result in the incorporation of dissolved nutrients (mainly N and P) into plant tissue and organic sediments. Also includes the process of denitrification in wetland soils.

Production export—The movement of relatively large amounts of organic material derived from primary production to adjacent areas. This process can include a wide range of secondary production exports such as insect emergence.

ECOLOGY

Ecological values are based on the relative ability of a wetland to support animal populations and provide local habitat diversity. Three general characteristics of a wetland were considered.

Aquatic habitat—The potential of a wetland to support a viable fish or invertebrate population.

Wildlife habitat—The potential of a wetland to support wetland-dependent birds; other locally abundant animals such as moose will be considered.

Regional ecological diversity—An index to how much a given wetland contributes to the overall landscape diversity of the watershed within which it is located. Wetland types that are regionally rare receive higher scores.

SOCIAL

Social values considered for this analysis include subsistence and recreational uses. These values include the importance of a wetland for hunting and gathering activities (e.g., fishing, waterfowl and mammal hunting, berry picking, firewood, and edible plant gathering), and transportation (boating or winter travel). Rankings for this value were made on the potential of a wetland to support subsistence activities.

No data, previous study, or ranking systems were available to evaluate the intangible social values of open space and aesthetics. While certain ranking systems for such values exist (for example, see U.S. Forest Service 2002), these systems are specific to the areas for which they were developed and may not be applicable to the current study area. In general, the study area and surrounding landscape are only lightly influenced by human use and appear continuous with the regional wilderness outside the immediate boundaries of the village. These subjective measures can not be evaluated without input from local residents and other interested parties; therefore, they were not considered in the context of wetland functional values.

HABITAT EVALUATION

Habitat types in the study area were derived by integrating information from NWI classifications (Cowardin et al. 1979), Alaska vegetation classifications (Viereck et al. 1992), and landscape characteristics considered important to wildlife, such as availability of food, security (or escape), and shelter. These factors may be directly related to the quantity and quality of vegetation, soils, hydrology, microtopography, and/or microclimate. In practice, multiple related NWI types and Alaska vegetation classes often comprise a single habitat type.

Typical wildlife use of habitats was determined from the wetland and vegetation classifications, the derived wildlife habitat classes, and a review of available literature on wildlife-habitat relationships in the region (ADNR 1989, Platte and Stehn 2002). Habitat value is a function of several factors including availability of cover, availability of food, availability of any special habitat needs, and the spatial and temporal arrangement of habitat (Adamus et al. 1991). Pertinent wildlife values include important foraging habitats, nesting or denning habitats, and habitats providing other important behavioral or life-history functions (e.g., escape cover from predators, seasonal food sources). Existing literature and data available from state and federal agencies in conjunction with vegetation classification of 2005 aerial photography were used in the determinations of wildlife habitat value for each habitat class.

RESULTS AND DISCUSSION

WETLANDS AND VEGETATION

The airport study area (2705.2 acres) was classified into 19 wetland NWI classes that covering a total of 2683.2 acres (Table 1; Figures 1–2); the remaining 21.9 acres were Uplands. The landscape is gently rolling tundra with open forest stands in protected area such as lee slopes and river and stream corridors. Lakes, bogs, and wet meadows occupy local depression basins. Many of these basins represent drained lakes in various stages of vegetational succession. Much of the vegetational diversity in the study area is the result of the interaction of both hydrological and successional processes that occur in these basin areas.

The 19 NWI types were grouped into 13 wetland types based on vegetational and hydrological similarities (Table 1). Upland areas were limited to fill and barren areas associated with the existing airport and the village of Noatak. The most common wetland types consist of

shrub-sedge tundra (PSS1/EM1B, 776.3 acres) and moist graminoid-shrub tundra (PEM/SS1B, 737.7 acres). These wetland types occupy much of the lands between basins and tend to be dominated by sedge-willow and shrub-tussock tundra communities (Table 2, Figure 3).

Shrub tundra (PSS1/3B and PSS1B) is common in the study area (429.1 acres) with locally improved drainage and is indistinct from shrub-sedge tundra across the study area. The wetland type includes shrub-birch dominated closed and open low shrub (PSS1/3B) and willow dominated open and low shrub (PSS1B) communities. Boundaries between shrub-sedge tundra and shrub tundra should be considered approximate, as these types were difficult to distinguish due to the late date of the aerial photography.

Much of the basin areas supported graminoid-shrub bog communities (373.2 acres). These communities included wet graminoid meadow (PEM/SS1F), moist graminoid meadow (PEM1/SS3B), open low shrub/wet graminoid complex (PSS1/3B//PEM1F), and open low shrub (PSS3/EM1B) communities. All these communities develop on relatively thick peat deposits and represent a successional continuum from wet to moist soil conditions.

The remaining wetland types all represent 3.5% or less of the study area. No isolated wetland areas were noted within the study area. Uplands were limited to 21.9 acres of gravel fill and barren areas associated with the existing airstrip, roads and pads in the village of Noatak, and development associated with the village landfill (Figure 1). Based on our experience performing ecological land surveys in the Noatak National Preserve, upland areas may occur within the study area, but it is not possible to verify this without extensive field verification surveys. Possible upland areas include areas currently delineated as needleleaf forest (PFO4/SS1B), and some shrub tundra areas identified as woodland habitats (PSS1/3B). Some riverine scrub areas (PSS1C and PSS1/3C) may also include uplands.

WETLAND FUNCTIONAL ASSESSMENT

The functional values of wetlands in the study area are influenced by a short growing season, presence of continuous permafrost across the study area, wildlife use, remoteness from large population centers, and limited urban or industrial development. Because soils are underlain by permafrost, hydrological functions are somewhat limited. All other ecological, and water quality

functions of wetlands in the study area are difficult to evaluate without ground survey data. However, wetlands in this area are contiguous with an extensive region that extends across a wide valley as part of a roughly ten mile wide corridor of wetlands that flanks the banks of the Noatak River. Social values of local wetlands were scored based on the results of interviews with Noatak residents (Mobley 2006).

Many of the wetland functions described here are not unique to this study area, but are common to terrain in this region. An exception to this is the wetland areas bordering the existing airstrip and village development. These areas likely perform important water-quality functions by intercepting sediments and toxicants originating from upland fill areas. These functions are not specific to a particular wetland type, but are a result of the wetlands proximity to existing development. Ecological values of wetlands in the study area are primarily determined by relative wildlife use. Many of the wetland and upland shrub communities in the study area probably provide valuable habitat for passerines and small mammals (shrews, voles, and other microtines). A complete summary of the rankings of the functional values for wetland types is presented (Table 3).

HABITAT EVALUATION

Eighteen wetland habitat types were identified in the study area (Figure 4, Table 4). Upland habitats were limited to human fill areas, and are not considered in this discussion. The dominant habitats were Lowland Moist Tundra (819.8 acres), Lowland Tussock Tundra (730.1 acres), Lowland Low Scrub (394.7 acres), and Lowland Low Scrub/Wet Tundra Complex (168.3 acres). The remaining habitat types covered 5% or less of the study area. A summary of the characteristics of the habitats found and their wildlife use is presented below.

WETLAND HABITATS

Lowland Aquatic Marsh/Pond Complex: This habitat types occurs in young drained basins and infilling ponds and includes areas of open water and aquatic vegetation. The marshes in this part of the state typically include sedges, such as water sedge (*Carex aquatilis*), Northwest Territory sedge (*Carex utriculata*), and cottongrass sedge (*Eriophorum angustifolium*). Wildlife values include foraging, nesting, and brooding areas for waterfowl and shorebirds, and staging

areas for some migratory species of waterfowl, such as geese and swans (Lensink and Derksen 1990, Platte and Butler 1992, The Institute for Bird Populations 2003). Moose also use these habitats to forage on emergent vegetation.

Lakes: Lakes (and associated littoral zone) occurred in the western portion of the study area (94.5 acres) and occurred in large, isolated basins. Lakes provide the highest quality wildlife habitat in the study area. These lakes only receive input from precipitation and local runoff sources. These lakes are favored by waterbirds because they have 1) extensive shallow areas that can be used for foraging and provide open water areas in early spring; 2) well-developed littoral zones that support a variety of important submerged plant forage species; and 3) typically are bordered by wet graminoid meadows that provide nesting and foraging habitat. Waterfowl, particularly swans, geese, and ducks, would use the open water found on these lakes during migration and during the breeding season. Other waterbirds, including loons, gulls, grebes, and shorebirds also would use these habitats during the summer season. Noatak residents indicated that these lakes are occasionally used for subsistence hunting of waterfowl, but do not support populations of game fish.

Ponds: Ponds occur throughout the study area and cover a total of 19 acres. Small, shallow ponds adjacent to the airport probably have limited habitat value. Other ponds likely provide valuable waterfowl habitat. These ponds can provide resting/foraging habitat for migrating waterbirds, cover and forage for wood frogs (*Rana sylvatica*) and aquatic invertebrates, as well as forage for moose (*Alces alces*) and muskrats (*Ondatra zibethicus*).

Streams: The Kuchoruk Creek and its tributaries cross the center of the study area and cover a total of 18.4 acres. These streams may provide pathways for nutrient export from inland wetland areas (particularly tussock tundra areas) to the Noatak River. The streams may serve as migration corridors for small fish populations between inland lakes and the Noatak River. Noatak residents use the creek for access to berry picking area and to fish for whitefish, pike, trout, and arctic char (Mobley 2006). Residents also report hunting along the banks for ptarmigan, muskrat, and waterfowl.

Riverine Low Scrub and Riverine Tall Scrub: These habitats are seasonally flooded areas bordering Kuchoruk Creek and its tributaries and cover 26.1 acres in the study area. These habitats provide erosion control and some flow moderation during spring breakup. However, flooding may be infrequent due to the high and steep banks of Kuchoruk Creek (Mobley 2006)

Moose may prefer these areas as winter habitat due to presence of preferred forage (willows) and proximity to a travel corridor when the river freezes. Because of their location these areas may serve as escape cover for a variety of species during winter months when humans and wildlife may be using the frozen water to travel. Riverine Tall Scrub is highly productive breeding habitat for several passerine species including Northern Waterthrush (*Seiurus noveboracensis*), Orange-crowned Warbler (*Vermivora celata*), Wilson's Warbler (*Wilsonia pusilla*), Yellow Warbler, Blackpoll Warbler, and Fox Sparrow. Avian use of Riverine Low Scrub is typically low compared to Riverine Tall Scrub and is primarily limited to sparrows, such as the Savannah Sparrow (*Passerculus sandwichensis*). Arctic Warblers may also occur in this habitat.

Riverine Needleleaf Forest: Functions of this type are probably similar to those described for Lowland Needleleaf Forest habitats. These forests occur as very narrow bands of trees that establish on river levees. In the study area, this habitat occurs along Kuchoruk Creek and covers 22.2 acres. The relatively large stature of trees in riverine forest results in structural elements that are usually not found in forests elsewhere in the study area, attracting many forest-associated wildlife species that are near their northern distributional limit. Large snags often occur within mature white spruce stands that provide nest sites for cavity-nesting birds such as woodpeckers. Riverine stands also contain trees large enough to attract stick-nesting raptors, such as the Red-tailed Hawk (*Buteo jamaicensis*), Bald Eagle (*Haliaeetus lecuocephalus*) and the Great Horned Owl (*Bubo virginianus*), and corvids such as the Common Raven (*Corvus corax*). However, these species occur at relatively low densities in the study area. Mammals such as porcupine (*Erethizon dorsatum*), marten (*Martes americana*), and lynx often use riverine forests for browsing and hunting. Riverine Needleleaf Forest is also a preferred habitat for small mammals such as microtine rodents and the red squirrel (*Tamiasciurus hudsonicus*).

Lowland Aquatic Marsh: Marshes in the study area are semi-permanently flooded areas of emergent vegetation such as marsh horsetail (*Equisetum fluviatile*) or sedges (*Carex* spp.), and can occur in drained basin margins, pond margins, abandoned drainage channels, and in thermokarst areas. This habitat type covers 17.6 acres within the study area. Wildlife values for lowland sedge marshes include providing foraging and nesting areas for waterfowl and shorebirds, and staging areas for some migratory species of waterfowl, such as geese and swans (USFWS 2000). Moose forage on emergent vegetation in these habitats.

Lowland Wet Tundra: This habitat type frequently is associated with ponds and marshes, but also is interspersed between Lowland Open Scrub wetlands and in local depressions and areas of poor drainage due to the impoundment of surface water from gravel placement. This habitat type includes both Wet Sedge Tundra and Wet Sedge-Willow Tundra components and covers 131.5 acres. Wildlife use and habitat values for lowland wet meadows are similar to those for the lowland aquatic marsh, although the limited surface water may restrict use by some species that need open water for foraging, thus, overall habitat value is somewhat reduced for waterbirds. Sites close to lakes and ponds would make them attractive to dabbling ducks for feeding. Shorebirds such as Lesser Yellowlegs (*Tringa flavipes*) also are attracted to these areas. Microtines, such as voles and lemmings, will use drier areas in these habitats for nesting and foraging.

Lowland Moist Tundra: This type incorporates a number of related components (Table 3), but all are dominated by sedges with a varying amount of low shrub cover. This type was the most extensive in the study area and covered 819.8 acres. Most of this habitat type is characterized by patterned-ground development consisting of slightly raised polygon rims surrounding a wetter polygon center. Wildlife values are primarily in the provision of foraging habitats for a variety of mammals and as nesting habitat for some birds (primarily songbirds and a few shorebirds). Moose are likely to forage in this habitat, as browse is readily available. Overall wildlife value for this type is low-moderate, but may rank higher for some species.

Lowland Moist Meadow: This habitat is associated with pond margins in drained basins and in thermokarsting areas along in the vicinity of the airstrip and cover 28.1 acres of the study area. These meadows may have developed from Lowland Wet Meadows, but are probably dry during at least part of the growing season. Mammal use is probably restricted to foraging and other uses by microtines and voles. This habitat type is predominantly used by shorebirds and passerines for nesting and feeding.

Lowland Tussock Tundra: In the study area, this habitat is characterized by low shrubs such as bog blueberry (*Vaccinium uliginosum*) and *Eriophorum vaginatum* tussocks. This habitat type tends to occur in raised microsites and lacks obvious patterned-ground formations. Lowland Tussock Tundra is the second-most common habitat in the study area and covers 730.1 acres. Wildlife use is similar to that for Lowland Moist Meadows.

Lowland Tall Scrub: This habitat is dominated by tall willows (*Salix* spp) and shrub birch. In better-drained areas with favorable growth conditions, the shrub stands can have a closed canopy, but open canopy stands are more common. Tall shrub stands were uncommon in the study area and covered only 5.3 acres. This type mainly occurs in drained basin margins. Moose typically prefer this habitat, although the proximity and interspersion of the habitat relative to the village may precludes most use. Songbirds, such as warblers and sparrows, also use these habitats (Spindler and Kessel 1980, Sowl 2003).

Lowland Low Scrub: A diverse number of habitat components make up the Lowland Low Shrub type (Table 3), but all are composed shrub birch (*Betula gladulosa*) and low willow in varying proportions. The understory may contain significant cover of ericaceous shrubs, sedges, and mosses. In better-drained sites, the shrub canopy may be closed, but the open canopy community is more common. This habitat is the third-most common type and covers 394.7 acres in the study area. Lowland Low Scrub is of value to a few passerine species, primarily sparrows. Lowland Low Scrub could also be used by the Arctic Warbler (*Phylloscopus borealis*), which tends to select low scrub habitats; this species was listed as a Species of Conservation Concern by USFWS in 2002. Moose also will use these habitats, if dominated by willows (ADF&G 1986).

Lowland Low Scrub/Wet Tundra Complex: The largest area of this type occurs in the southern-central portion of the study area. This habitat is common in old colluvial basins and consists of raised peat "islands" that support dense shrub birch stands. These islands are separated by shallow ponds and wet sedge swales. This habitat type covers 132 acres. Wildlife use is similar to that for Lowland Low Scrub, but the addition of wetter tundra areas probably attracts more waterbirds, such as shorebirds, to these habitats.

Lowland Bog: Vegetation is dominated by sedges, forbs and various ericaceous low and dwarf shrubs. These areas are likely saturated at or near the surface from spring through mid-summer or beyond, and may have some standing water. This habitat is common throughout the study area and covers 132 acres. Wildlife use and habitat values are similar to those for the Fresh Sedge Marsh, although the lower coverage by shallow water may restrict use by some species that need open water for foraging and lowers the overall value of this habitat type.

Lowland Needleleaf Forest and Needleleaf Woodland: This habitat is characterized by a variable cover of white spruce (*Picea glauca*) with an understory of willow and ericaceous shrubs. Lowland Needleleaf forests tend to occur in isolated patches across the study area with a

total cover of 51 acres. Lowland Needleleaf Woodlands are similar habitats, but with a greater cover of deciduous shrubs. Woodlands have a low (<25%) cover of white spruce (*Picea glauca*) with an understory of willow and ericaceous shrubs. Wildlife values are moderate-to-high primarily because of the mixture of both tree and shrub cover, which provides habitats for some species not found in habitats dominated only by shrubs. Bird densities in lowland needleleaf forests were intermediate between those of shrub and forested habitats in the Upper Tanana River Valley (Spindler and Kessel 1978, 1980). Although foraging moose do use this habitat, it does not provide the high-quality forage found in the lowland shrub and meadow habitats. Berries provide a seasonal food source for small mammals, birds, and bears in this habitat.

Lowland Needleleaf Woodland: Similar to Lowland Needleleaf forest, but with a greater cover of deciduous shrubs. This habitat is characterized by a thin (<25%) cover of white spruce (*Picea glauca*) with an understory of willow and ericaceous shrubs. This habitat has moderate-to-high values as wildlife habitat primarily because of the mixture of scattered trees and shrub cover, which provides habitats for some species not found in habitats dominated only by shrubs. Bird densities are less than in Lowland Needleleaf Forests and similar to more shrub-dominated habitats (Spindler and Kessel 1978, 1980). Although foraging moose do use this habitat, it does not provide the high-quality forage found in the lowland shrub and meadow habitats.

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Table 1. Wetland classes in the Noatak airport relocation study area, Noatak, Alaska, 2005.

Wetland Class	NWI Code[a]	NWI Descriptor	Total Area (acres)
Lake	L1UBH	Lacustrine, limnetic, unconsolidated bottom, permanently flooded	94.5
Aquatic Herbaceous	L2ABH	Lacustrine, littoral, aquatic bed, permanently flooded	1.9
Perrenial Stream	R3UBH	Riverine, upper perrenial, unconsolidated bottom, permanently flooded	18.4
Pond	PUBH	Palustrine, unconsolidated bottom, permanently flooded	19.0
Aquatic Graminoid Marsh	PEM1H	Palustrine, emergent, persistent, permanently flooded	15.6
	PUB/EM1H	Palustrine, unconsolidated bottom/emergent persistent, permanently flooded	4.2
Wet Graminoid Meadow	PEM1F	Palustrine, emergent, persistent, semipermanently flooded	78.6
Graminoid-Shrub Bog	PEM/SS1F	Palustrine, emergent, persistent/scrub-shrub, broad-leaved deciduous, semipermanently flooded	10.6
	PEM1/SS3B	Palustrine, emergent persistent/scrub-shrub, broad-leaved evergreen, saturated	104.2
	PSS1/3B// PEM1F	Palustrine, broad-leaved deciduous/broad-leaved evergreen, saturated//Palustrine, emergent, persistent, semiperanently flooded	168.3
	PSS3/EM1B	Palustrine, scrub-shrub, broad-leaved evergreen/emergent, persistent, saturated	90.1
Moist Graminoid Meadow	PEM1B	Palustrine, emergent, persistent, saturated	30.9
Moist Shrub-Graminoid Tundra	PEM/SS1B	Palustrine, emergent, persistent/scrub-shrub, broad-leaved deciduous, saturated	737.7
Riverine Scrub	PSS1/3C	Palustrine, broad-leaved deciduous/broad-leaved evergreen, seasonally flooded	17.0
	PSS1C	Palustrine, broad-leaved deciduous, seasonally flooded	32.2
Shrub-Sedge Tundra	PSS/EM1B	Palustrine, broad-leaved deciduous/emergent persistent, saturated	776.3
Shrub Tundra	PSS1/3B	Palustrine, broad-leaved deciduous/broad-leaved evergreen, saturated	309.1
	PSS1B	Palustrine, broad-leaved deciduous, saturated	120.0
Needleleaf Forest	PFO4/SS1B	Palustrine, forested, needleleaf evergreen/broad-leaved deciduous, saturated	54.6
Total Wetlands			**2683.2**
Uplands	**Ur**	**Uplands**	**21.9**
Total Study Area			**2705.2**

[a] National Wetland Classification (Cowardin et al. 1979)

Table 2. Vegetation types (Level III and Level IV) in the Noatak airport relocation study area, Noatak, Alaska, 2005.

Vegetation Type	Level IV Vegetation Classification[a]	Total Area (acres)
Water	Fresh Water	0.0
	Water	131.9
Water/Aquatic Marsh Complex	Water/Fresh Sedge Marsh Complex	4.2
Wet Graminoid Meadow	Fresh Sedge Marsh	17.6
	Subartic Lowland Sedge Bog Meadow	0.2
	Wet Sedge Meadow Tundra	78.6
	Wet Sedge-Willow Tundra	52.9
Barrens	Barren	2.2
	Barrens Urban	19.7
Closed Low Shrub	Closed Low Shrub Birch/Willow	10.3
	Closed Low Willow	2.8
Closed Tall Shrub	Closed Tall Willow	0.7
Moist Graminoid Meadow	Moist Sedge-Birch Tundra	121.1
	Moist Sedge-Grass Meadow Tundra	28.1
	Moist Sedge-Shrub Tundra	4.1
	Moist Sedge-Willow Tundra	663.7
	Subarctic Lowland Sedge Moist Meadow	2.8
Needleleaf Woodland	White Spruce Woodland	67.6
Open Low Shrub	Open Low Ericaceous Shrub Bog	90.1
	Open Low Mesic Shrub Birch-Ericaceous Shrub	255.9
	Open Low Shrub Birch-Ericaceous Shrub Bog	13.8
	Open Low Shrub Birch-Willow	73.5
	Open Low Willow	20.0
	Open Low Willow-Graminoid Shrub Bog	12.0
	Open Low Willow-Sedge Shrub Tundra	48.1
	Open Mixed Low Shrub-Sedge Tussock Bog Meadow	11.1
	Open Mixed Low Shrub-Sedge Tussock Tundra	730.1
Open Low Shrub/Wet Graminoid Meadow Complex	Open Low Mesic Shrub Birch-Ericaceous Shrub/Wet Sedge Meadow Tundra Complex	168.3
Open Needleleaf Forest	Open White Spruce	54.6
Open Tall Shrub	Open Tall Willow	19.4
Total Area		**2705.2**

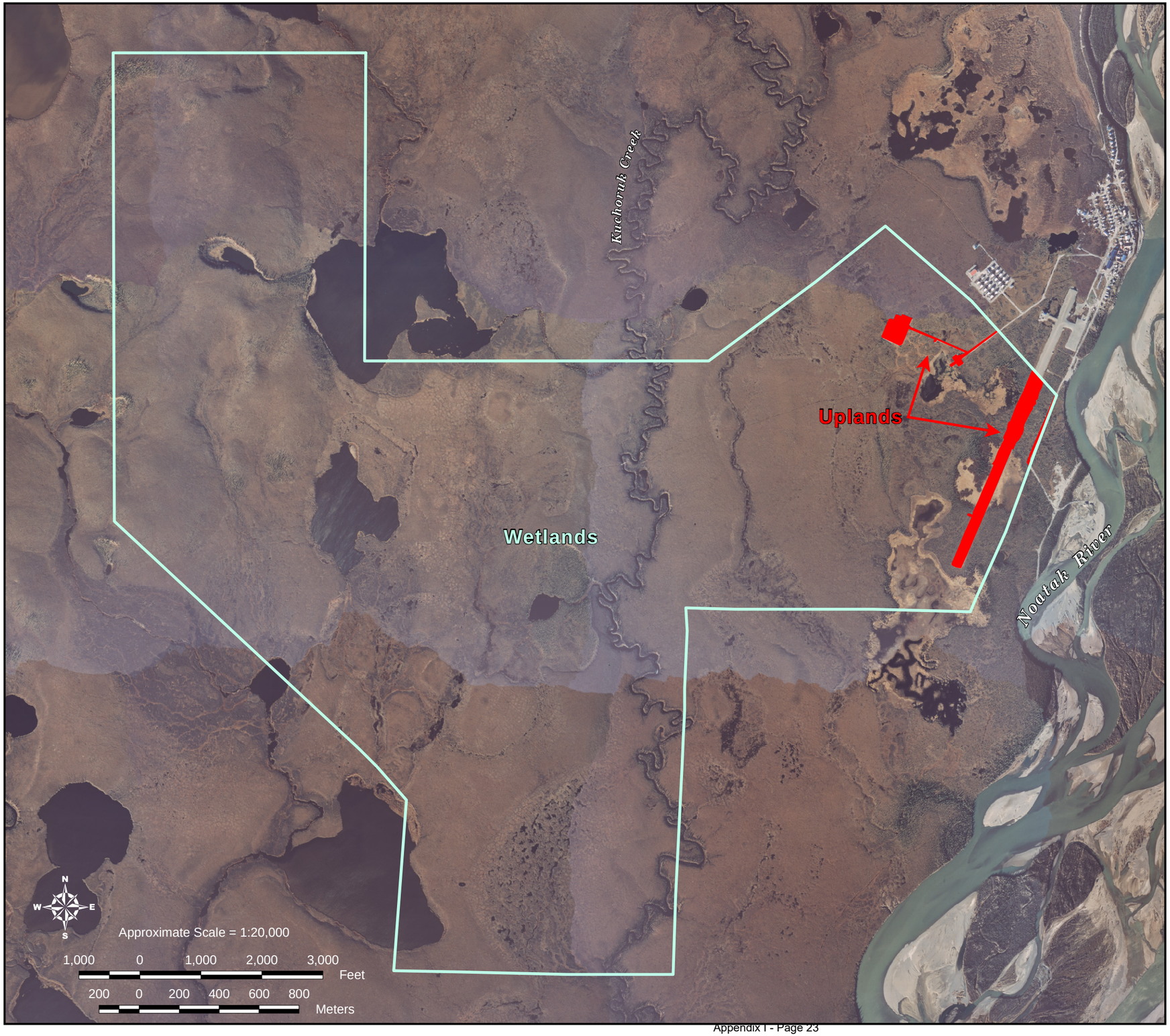
[a] The Alaska Vegetation Classification, Vierek et al. 1992.

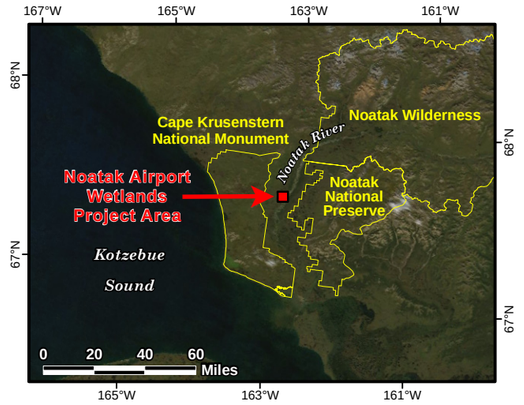
Table 3. Relative functions and values for wetland habitats identified in the Noatak airport relocation study area, Noatak, Alaska, 2005.

Function & Value / Habitat	Groundwater Discharge	Groundwater Recharge	Erosion Sensitivity	Sediment/ Toxicant Retention	Nutrient Retention	Production Export	Fish Habitat	Wildlife Habitat	Regional Ecological Diveristy	Subsistence/ Recreational Use
Lowland Aquatic Marsh/Pond	High	Low	Low	High	High	Med	Low	High	Med	Med
Lake	High	Low	Low	Low	Low	Low/ Med	Med/ High	High	Med	High
Pond	Low	Low	Low	Low	Low	Low	Low	Med	Low	Low
Stream	Med	Low	Low	Low	Low	Med	Med	Med	Med	High
Riverine Low Scrub	Low	Low	High	Med	Low	Low	Low	Med/ High	Med	Low
Riverine Tall Scrub	Low	Low	High	Med	Low	Low	Low	Med/ High	Med	Low
Riverine Needleleaf Forest	Low	Low	High	Med	Low	Low	Low	Med/ High	Med	Low
Lowland Wet Tundra	Low	Low	Low	Low	Low	Low	Low	Med	Low	Low
Lowland Moist Tundra	Low	Low	Low	Low	Low	Low	Low	Med	Low	Med
Lowland Moist Meadow	Low	Low	Low	Med	Low	Low	Low	Med	Med	Low
Lowland Tussock Tundra	Low	Low	Low	Low	Low	Med	Low	Med	Low	Med
Lowland Tall Scrub	Low	Low	Low	Low	Low	Low	Low	High	Med	Low
Lowland Low Scrub	Low	Low	Low	Low	Low	Low	Low	Med	Low	Low
Lowland Low Scrub/Wet Tundra Complex	Low	Low	Low	Low	Low	Low	Low	High	Med	Med
Lowland Bog	Low	Low	Low	Low	Low	Low	Low	Med	Low	Med
Lowland Needleleaf Forest	Low	Low	Low	Low	Low	Low	Low	High	Low	Med
Lowland Needleleaf Woodland	Low	Low	Low	Low	Low	Low	Low	Med	Low	Med

Table 4. Wetland and upland habitat types in the Noatak airport relocation study area, Noatak, Alaska, 2005.

Habitat Type	Habitat Components	Total Area (acres)
Wetland Habitats		
Lowland Aquatic Marsh/Pond Complex	Shallow Water/Lowland Aquatic Sedge Marsh	4.2
Lake	Water, Deep	94.5
Pond	Water, Shallow	19.0
Stream	Upper Perennial Stream	18.4
Riverine Low Scrub	Riverine Low Closed Birch-Willow Scrub	0.3
	Riverine Low Open Birch-Willow Scrub	1.7
	Riverine Low Open Willow Scrub	6.9
Riverine Tall Scrub	Riverine Tall Open Willow Scrub	17.2
Riverine Needleleaf Forest	Riverine White Spruce Forest	22.7
Lowland Aquatic Marsh	Aquatic Sedge Marsh, Shallow Water	17.6
Lowland Wet Tundra	Wet Sedge Tundra	78.6
	Wet Sedge-Willow Tundra	52.9
Lowland Moist Tundra	Moist Sedge Tundra	2.8
	Moist Sedge-Shrub Tundra	125.2
	Moist Sedge-Willow Tundra	663.7
Lowland Moist Meadow	Moist Sedge-Grass Meadow	28.1
Lowland Tussock Tundra	Lowland Shrub-Tussock Tundra	715.5
	Shrub-Tussock Tundra	14.6
Lowland Tall Scrub	Lowland Tall Closed Birch-Willow Scrub	2.2
	Lowland Tall Closed Willow Scrub	0.7
	Lowland Tall Open Willow Scrub	2.2
Lowland Low Scrub	Lowland Low Closed Birch-Willow Scrub	21.7
	Lowland Low Closed Willow	4.0
	Lowland Low Open Birch-Ericaceous Scrub	4.1
	Lowland Low Open Birch-Ericaceous Shrub	216.1
	Lowland Low Open Birch-Willow Tundra	83.7
	Lowland Low Open Willow	12.6
	Lowland Low Open Willow-Sedge Scrub	52.5
Lowland Low Scrub/Wet Tundra Complex	Lowland Low Open Birch-Ericaceous Shrub/Wet Sedge Tundra	168.3
Lowland Bog	Lowland Sedge-Shrub Bog	132.0
Lowland Needleleaf Forest	Lowland Open White Spruce Forest	51.0
Lowland Needleleaf Woodland	Lowland White Spruce Woodland	48.6
Total Wetland Habitat		**2683.6**
Upland Habitats		
Human Disturbed Barrens	Maintained Barrens	19.7
Human Gravel Fill	Gravel Fill	2.2
Total Upland Habitats		**21.9**
Total Area		**2705.0**





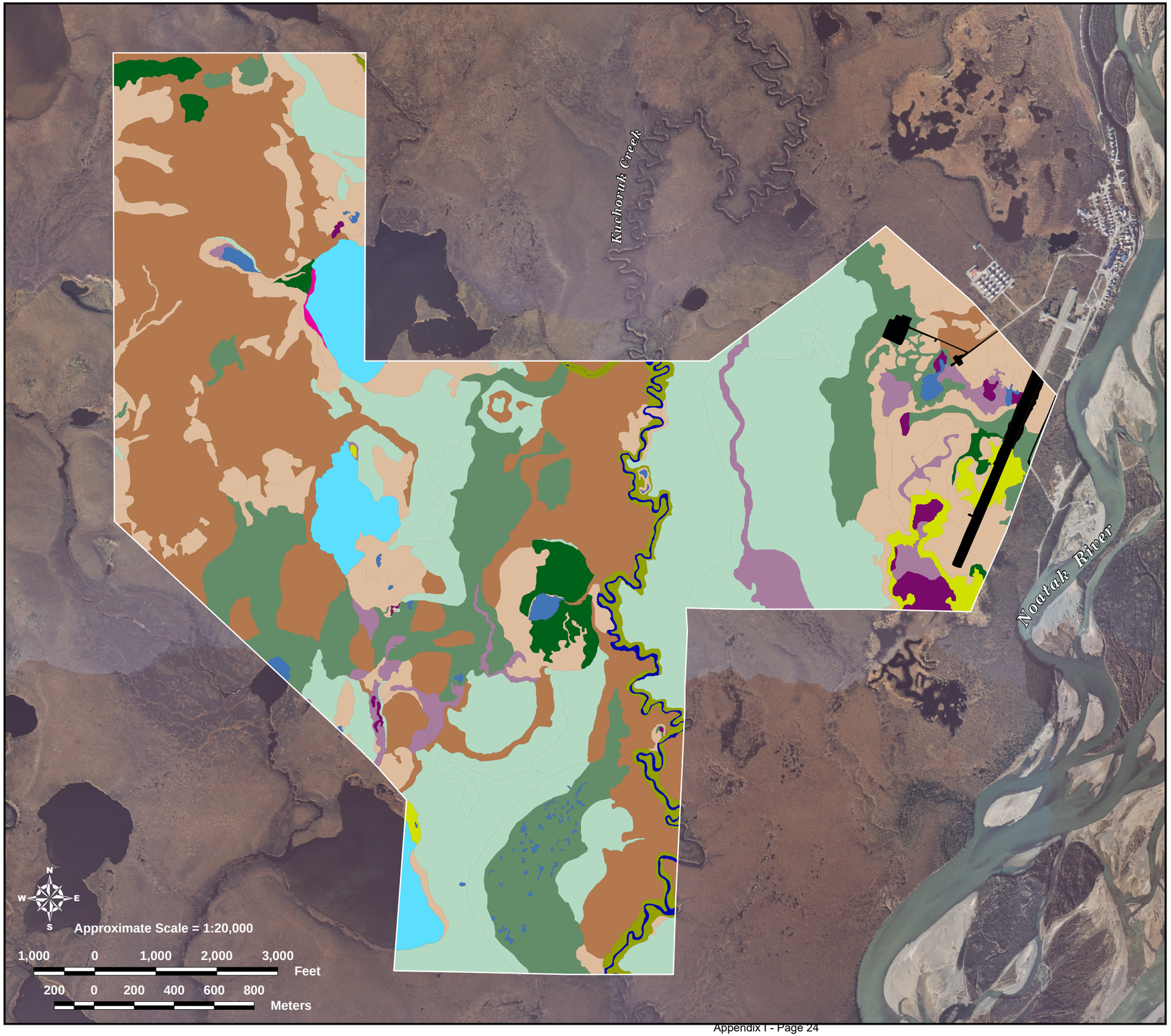
Notes:
Wetland map imagery is true-color photography acquired October 2005 by AeroMap U.S.
Map projection: ASP Zone 7, NAD83, US foot
Inset map imagery: Blue Marble Next Generation, NASA

Wetlands Determination and Habitat Assessment of Noatak Airport, Alaska

Figure 1. Wetland and Upland Boundaries

ABR inc. *environmental research & services* — *map prepared by:*

31 March 2006 | ABR File: Noatak_Airport_Wetlands_Photo_06-201-1.mxd



NWI[1] Code and Associated Wetland Class

Surface Waters of the U.S.:

L1UBH	Lake
L2ABH	Aquatic Herbaceous
R3UBH	Perrenial Stream
PUBH	Pond

Other Waters of the U.S.:

PEM1H, PUB/EM1H	Aquatic Graminoid Marsh
PEM1F	Wet Graminoid Meadow
PEM/SS1F, PEM1/SS3B, PSS1/3B//PEM1F, PSS3/EM1B	Graminoid-Shrub Bog
PEM1B	Moist Graminoid Meadow
PEM/SS1B	Moist Shrub-Graminoid Tundra
PSS1/3C, PSS1C	Riverine Scrub
PSS/EM1B	Shrub-Sedge Tundra
PSS1/3B, PSS1B	Shrub Tundra
PFO4/SS1B	Needleleaf Forest
Ur	Uplands

[1]Follows the National Wetlands Inventory (NWI) classification system of Cowardin et al. (1979). **Jurisdictional Wetland:** All wetlands in this study area have a downstream connection to navigable waters of the Noatak River and are considered jurisdictional.

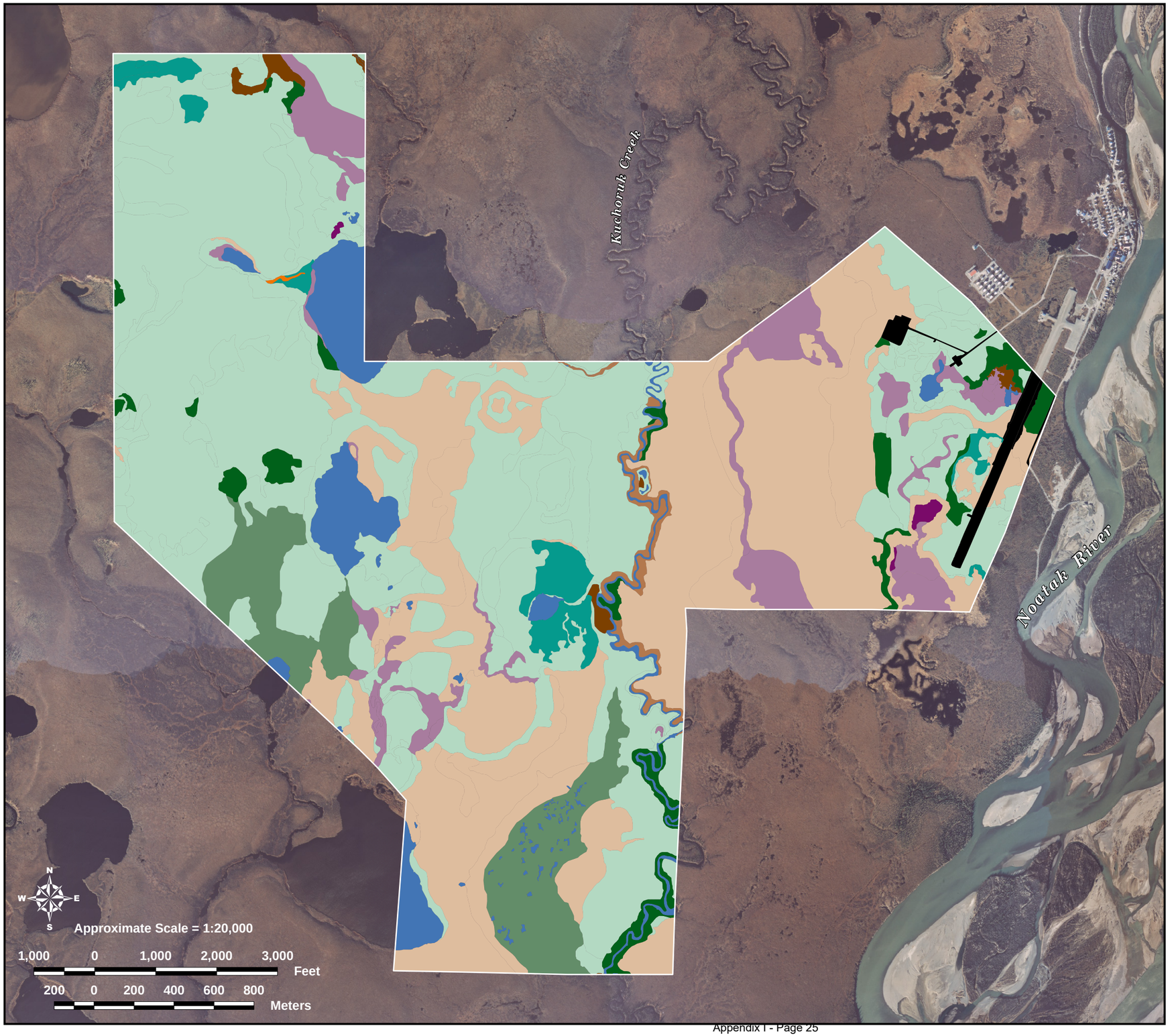
Notes:
Background imagery: true-color photography acquired October 2005 by AeroMap U.S.
Map projection: ASP Zone 7, NAD83, US foot

Wetlands Determination and Habitat Assessment of Noatak Airport, Alaska

Figure 2. Wetland Types

map prepared by:
ABR, Inc. *environmental research & services*

4 April 2006 | ABR File: Noatak_Airport_Wetlands_06-201-1.mxd



Vegetation Type[1]

- Water
- Water/Aquatic Marsh Complex
- Wet Graminoid Meadow
- Moist Graminoid Meadow
- Open Low Shrub
- Open Low Shrub/Wet Graminoid Meadow Complex
- Closed Low Shrub
- Open Tall Shrub
- Closed Tall Shrub
- Open Needleleaf Forest
- Needleleaf Woodland
- Barrens

[1]Level III Vegetation Class of the Alaska Vegetation Classification (Viereck et. al. 1992).

Notes:
Background imagery: true-color photography acquired October 2005 by AeroMap U.S.
Map projection: ASP Zone 7, NAD83, US foot

Wetlands Determination and Habitat Assessment of Noatak Airport, Alaska

Figure 3. Vegetation Types

map prepared by:
ABR, Inc. environmental research & services

4 April 2006 | ABR File: Noatak_Airport_Vegetation_06-201-1.mxd

Kuchoruk Creek

Noatak River

N
W E
S

Approximate Scale = 1:20,000

1,000 0 1,000 2,000 3,000 Feet

200 0 200 400 600 800 Meters

Habitat Type

- Lowland Aquatic Marsh/Pond Complex
- Lake
- Pond
- Stream
- Riverine Low Scrub
- Riverine Tall Scrub
- Riverine Needleleaf Forest
- Lowland Aquatic Marsh
- Lowland Wet Tundra
- Lowland Moist Tundra
- Lowland Moist Meadow
- Lowland Tussock Tundra
- Lowland Tall Scrub
- Lowland Low Scrub
- Lowland Low Scrub/Wet Tundra Complex
- Lowland Bog
- Lowland Needleleaf Forest
- Lowland Needleleaf Woodland
- Human Gravel Fill

Notes:
Background imagery: true-color photography acquired October 2005 by AeroMap U.S.
Map projection: ASP Zone 7, NAD83, US foot

Wetlands Determination and Habitat Assessment of Noatak Airport, Alaska

Figure 4. Habitat Types

ABR inc. *map prepared by: environmental research & services*

4 April 2006 | ABR File: Noatak_Airport_Habitats_06-201-1.mxd

To:	Christopher Johnston, P.E.	From:	Ryan Cooper, PWS
	Northern Region DOT&PF		Stantec, Anchorage, Alaska
File:	Z614780000	Date:	October 5, 2017

Reference: Wetland Verification Memo: Noatak Airport Relocation Project

INTRODUCTION

PROJECT DESCRIPTION

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Aviation Administration (FAA), proposes to relocate the Noatak Airport to provide the Village of Noatak with a safe, reliable, and cost effective facility. This facility would provide the community with adequate access, support the community's long-term development goals, and conform to current FAA safety regulations.

The existing Noatak Airport and adjacent community are located on the west bank of the Noatak River, 55 miles northwest of Kotzebue (Appendix A: Figure 1). The proposed airport relocation would be located approximately 1.5 miles west of the existing airport. A new 2-mile long airport access road would be constructed from the Village of Noatak to the new airport location (Appendix A: Figures 2, 3).

PURPOSE

A proposed new airport for Noatak has been the subject of study for many years. A 2006 desktop wetland report (ABR 2006, Appendix B) was published using desktop delineation and functional assessment methods within a 2705.2-acre study area. The 2006 study classifies wetlands according to Cowardin and Viereck Habitat classifications using predominantly aerial photo signatures. No National Wetlands Inventory (NWI) or Natural Resources Conservation Service (NRCS) soils data was available for the study. Hydrology was evaluated using aerial signatures of seasonal flooding, drainage patterns, and similar signatures.

Since 2006, the alignment for the project has slightly changed and the study area has been expanded to 3102.01 acres to accommodate all proposed project features. The purpose of this report is to confirm, update, and expand the 2006 report effort by:

- Reviewing and comparing the change in the wetland indicator plant lists,
- Verifying 2006 wetland boundaries with 2016 aerial imagery,
    - Extending the delineation area where needed
- Verifying 2006 wetland classifications are still valid, and
- Verifying the 2006 wetland functions.

METHODS AND RESULTS

PLANT LIST

Since the 2006 study was completed, the 1996 USFWS Wetland Plant Indicator list (USFWS 1996) has been updated. The plant list differences applicable to the project vicinity (HUC 19050403) between 1996 and 2016 (Lichvar et al 2016) were reviewed and differences noted. We found that 131 plants were added to the list, and 14 were removed. Of the 31 remaining changes, 25% of the plants were given a wetter indicator status, and 75% of the plants were given a dryer indicator status. We reviewed each change and verified whether that change could possibly indicate a change to wetland type or wetland/upland status.

Table 1 and 2 summarize the results of this effort. There do not appear to be changes in the wetland plant list that would change a polygon's wetland status within the study area.

Table 1: Plant Classification Changes for Species Listed in the 2006 study

Scientific Name	Common Name	1996 Classification	2016 Classification	Change Between 1996-2016?
Carex aquatilis	Leafy Tussock Sedge	OBL	OBL	No
Carex utriculata	Northwest Territory Sedge	OBL	OBL	No
Betula glandulosa	Resin Birch	Not Listed	FAC	Yes
Equisetum fluviatile	Water Horsetail	OBL	OBL	No
Eriophorum angustifolium	Tall Cotton-Grass	Not Listed	OBL	Yes
Eriophorum vaginatum	Tussock Cotton-Grass	Not Listed	FACW	Yes
Picea glauca	White Spruce	FACU	FACU	No
Vaccinium uliginosum	Alpine Blueberry	FAC	FAC	No

Table 2: Plant List Changes for Willows Found in the Noatak Region

Scientific Name	Common Name	1996 Classification	2016 Classification	Change Between 1996-2016?
Salix alaxensis	Felt-Leaf Willow	FAC	FAC	No
Salix arbusculoides	Little-Tree Willow	FACW	FACW	No
Salix arctica	Arctic Willow	FAC	FACU	Yes
Salix arctophila	Northern Willow	OBL	OBL	No
Salix barclayi	Barclay's Willow	FAC	FAC	No
Salix barrattiana	Barratt's Willow	FACW	FACW	No

Scientific Name	Common Name	1996 Classification	2016 Classification	Change Between 1996-2016?
Salix bebbiana	Gray Willow	FAC	FAC	No
Salix boothii	Booth's Willow	Not Listed	OBL	Yes
Salix candida	Sage Willow	OBL	OBL	No
Salix chamissonis	Chamisso's Willow	FACW	FACW	No
Salix fuscescens	Alaska Bog Willow	FACW	FACW	No
Salix glauca	Gray-Leaf Willow	FAC	FAC	No
Salix hastata	Halberd Willow	FAC	FAC	No
Salix interior	Sandbar Willow	Not Listed	FACW	Yes
Salix myrtillifolia	Blueberry Willow	FACW	FACW	No
Salix ovalifolia	Arctic Seashore Willow	FAC	FAC	No
Salix phlebophylla	Skeleton-Leaf Willow	FACU	FACU	No
Salix planifolia	Tea-Leaf Willow	FACW	FACW	No
Salix polaris	Polar Willow	FACW	FACW	No
Salix pseudomonticola	False Mountain Willow	NI	FAC	Yes
Salix pulchra	Diamond-Leaf Willow	Not Listed	FACW	Yes
Salix reticulata	Net-Vein Willow	FAC	FAC	No
Salix richardsonii	Richardson's Willow	Not Listed	FACW	Yes
Salix rotundifolia	Round-Leaf Willow	FAC	FAC	No
Salix setchelliana	Setchell's Willow	FAC	FAC	No
Salix sphenophylla	Wedge-Leaf Willow	FAC	FAC	No

WETLAND BOUNDARIES

Wetland boundaries were reviewed against 2016 high resolution aerial photography to confirm if the polygons still accurately described the environment. We examined every polygon in the 2006 study and compared the 20 Cowardin and 31 Viereck classifications with more recent aerial photography (Digital Globe, 2016). We expanded the boundaries in the few locations where the current project extended beyond the 2006 study area boundary.

We found that the ecological boundaries have not changed, and the mapping is still accurate with current aerial photography. Uplands continue to be located on filled developed lands, with the rest of the landscape being wetlands and Waters of the United States. We extended the mapping from adjacent polygons to cover all proposed project features as needed (Figure 2).

Cowardin Classification

The Cowardin classifications (Table 3, Figure 2) confirm that the study area is mostly wetlands, with uplands being present on developed gravel pads. Most of the wetlands are Emergent or Scrub/Shrub saturated wetlands (PEM1B and PSS1B). Stunted black spruce are present in many polygons, but generally are not large enough to be considered trees.

Common classifications are PSS/EM1B and PEM/SS1B. These are very similar broad leaved deciduous shrub and emergent habitat mixes, with saturated growing conditions. Lakes, ponds, and riverine systems are also important components of the landscape (e.g. L1UBH, L2ABH, PUBH, R2UB, R3UBH).

Viereck Mapping

Viereck mapping (Table 4, Figure 3) confirms that the area is wetland tundra. The most common habitat is Open Low Shrub, a habitat which commonly supports dwarf birch (*Betula nana*), black spruce, (*Picea mariana*), and a variety of willow (*Salix sp.*). These also may host important berry producing shrubs, such as *Vaccinium sp*.

WETLAND FUNCTIONS

The 2006 study also included a desktop functional assessment, based on *Literature Review and Evaluation Rationale of the Wetland Evaluation Technique* (Adamus et al. 1991). The assessment focused on qualitatively ranking (i.e. low, medium, high) the following attributes:

- Hydrology
    - Ground water discharge
    - Ground water recharge
    - Erosion control and flow regulation
- Water Quality
    - Sediment/toxicant retention
    - Nutrient retention
    - Production export
- Ecology
    - Aquatic habitat
    - Wildlife habitat
    - Regional ecological diversity
    - Social

We reviewed the applicability of this method to be applied towards permitting a current project. Our review supports the methods and findings of the 2006 study; that wetlands are largely undisturbed, connected to similar continuous wetlands, and functioning naturally. Wetlands found in the project are not unique to the area.

The 2006 functional assessment is qualitative, and scored each polygon for individual functional attributes. The method does not produce a single quantitative score a habitat or polygon. Given this, in our experience, the wetlands would rank as a Category II or III and the Waters of the United States would rank as Category I.

Table 3: Summary of Cowardin Mapping

Cowardin	Acres
L1UBH	106.37
L2ABH	1.94
PEM/SS1B	795.58
PEM/SS1F	10.63
PEM1/SS3B	104.19
PEM1B	30.90
PEM1F	79.74
PEM1H	18.22
PFO4/SS1B	54.63
PSS/EM1B	804.85
PSS1/3B	355.82
PSS1/3B//PEM1F	168.27
PSS1/3C	16.97
PSS1B	150.44
PSS1C	35.42
PSS3/EM1B	90.08
PUB/EM1H	4.17
PUBH	22.47
R2UB	190.85
R3UBH	18.61
Ur	41.86
Total	**3,102.01**

Table 4: Summary of Viereck Mapping

Viereck	Acres
Barrens	41.86
Closed Low Shrub	13.06
Closed Tall Shrub	0.68
Moist Graminoid Meadow	839.16
Needleleaf Woodland	79.65
Open Low Shrub	1,349.69
Open Low Shrub/Wet Graminoid Meadow Complex	168.27
Open Needleleaf Forest	54.63
Open Tall Shrub	19.43
Stream	1.72
Water	338.29
Water/Aquatic Marsh Complex	4.17
Wet Graminoid Meadow	191.40
Total	**3,102.01**

CONCLUSION AND JURISDICTION

We have reviewed and verified the previous 2006 report and electronic mapping data for this project. The wetland classifications and boundaries appear to be accurate, and we have expanded them to include the current project. The new wetland indicator plant list does not appear to have changed enough to have an impact on any polygon classification (Tables 1 and 2).

Ryan Cooper, M.S.

Professional Wetland Scientist

Phone: (907) 343-5241

Ryan.cooper@stantec.com

Appendix: Appendix A:
Figure 1: Vicinity Map
Figure 2: Wetland Map
Figure 3: Viereck Map
Appendix B: 2006 Wetland and Habitat Study

c. Missy Jensen, Environmental Impact Analyst, DOT&PF
Sara Lindberg, M.A., Environmental Department Manager, Stantec
John Limb, P.E., Senior Civil Engineer, Stantec

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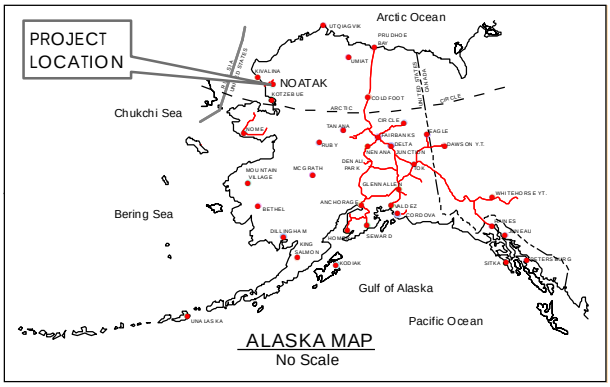
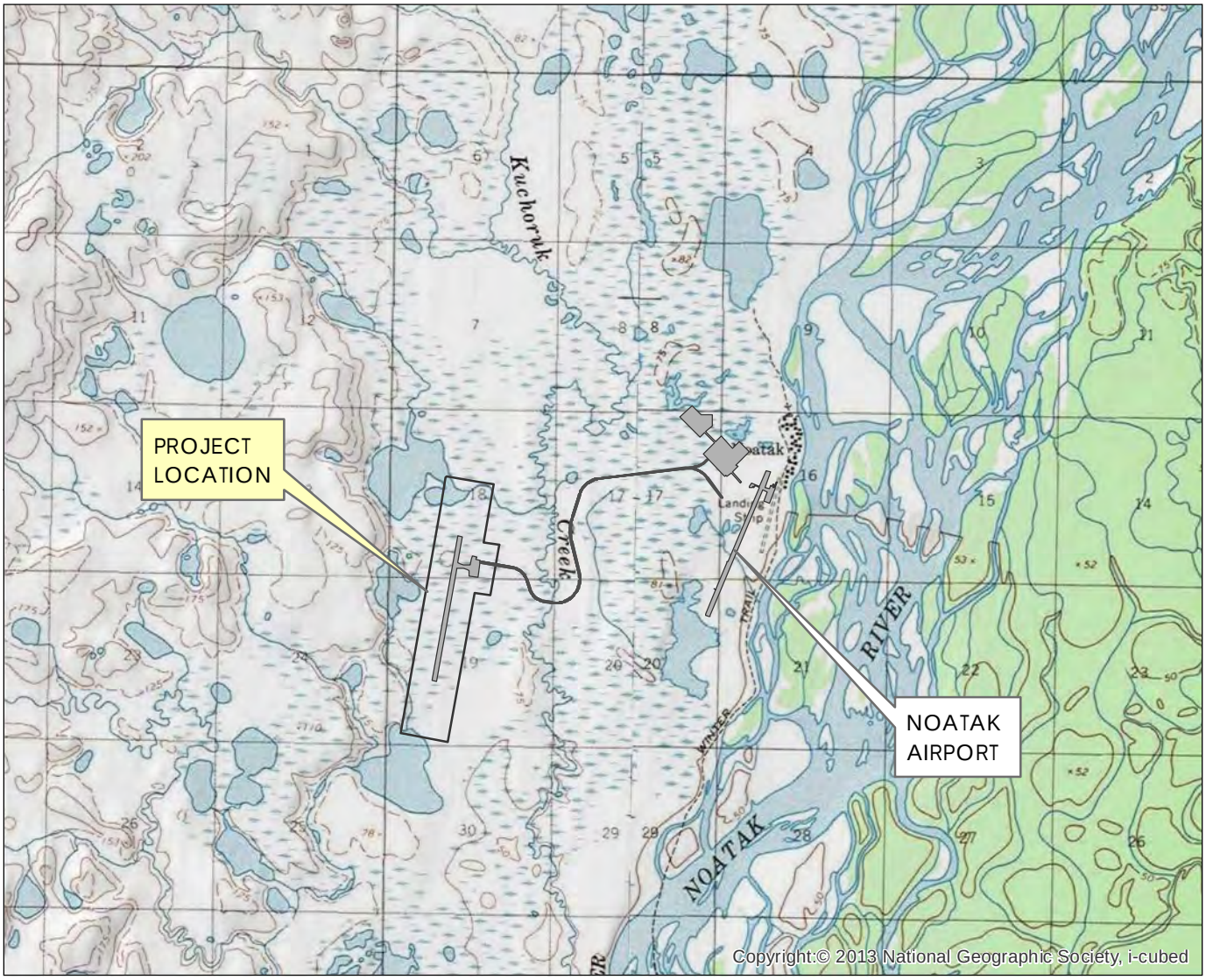
Appendix A: Site Maps





Graphics developed by Stantec Consulting Services, Inc.

Project Origin: City of Noatak
Kotzebue Recording District,
Section 16-21, 28-32,
Township 25N, Range 19W
Kateel River Meridian
Noatak Airport
USGS: NOATAK (C-2) ALASKA
673357 N 1625840 W

0 0.5 1 2 Miles
1:63,360 (at original document size of 8.5x11)

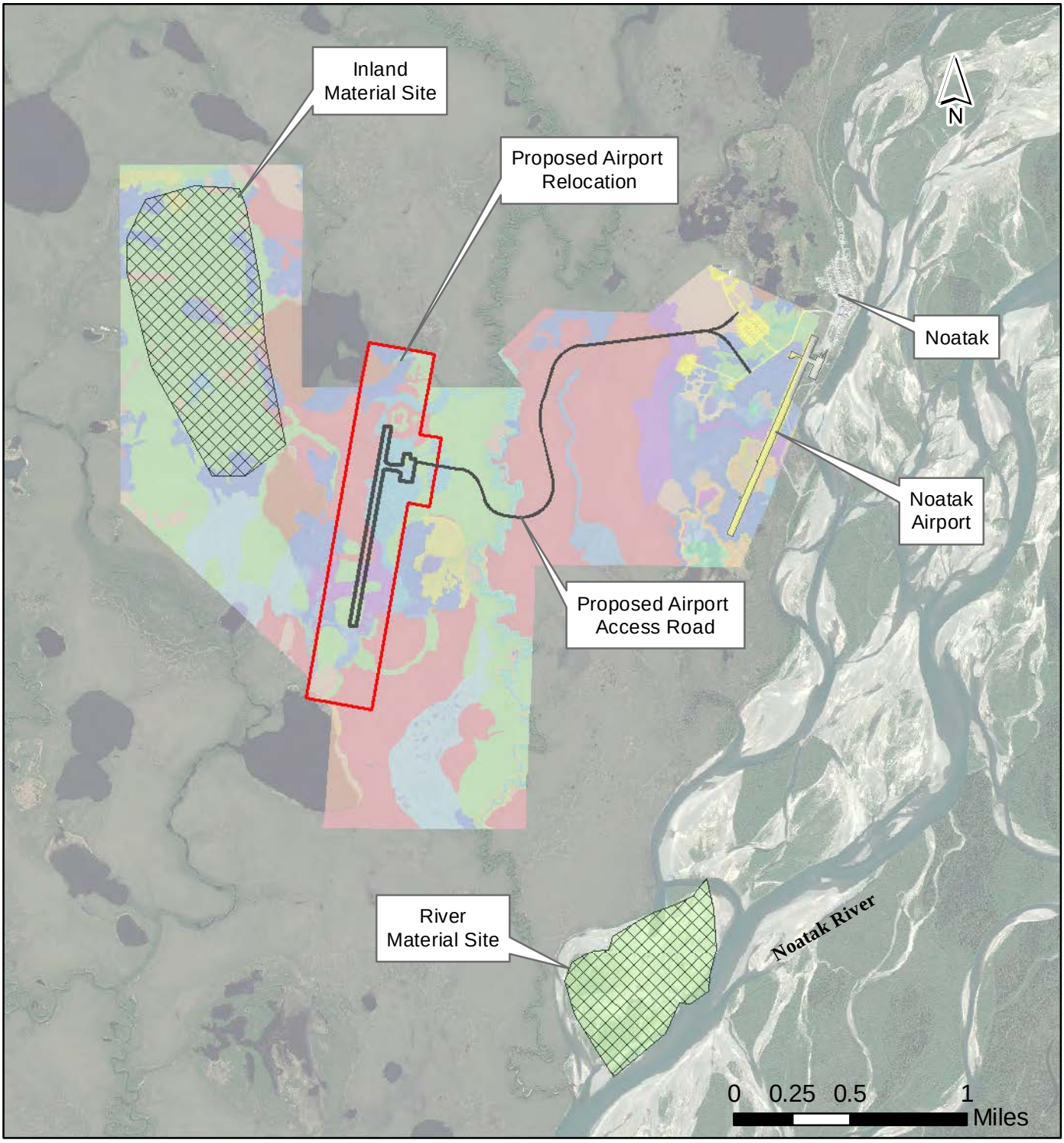
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Location & Vicinity Map

DATE: October, 2017 | FIGURE **1**

U:\2047059000\GIS\mxd\Wetlands Verification\2047059000_Fig-01_Loc-Vic_Map.mxd Revised: 2017-10-04 By: cpannone



LEGEND

- Project Area
- Proposed Runway & Apron
- Potential Material Site

Wetlands

- L1UBH
- L2ABH
- PEM/SS1B
- PEM/SS1F
- PEM1/SS3B
- PEM1B
- PEM1F
- PEM1H
- PFO4/SS1B
- PSS/EM1B
- PSS1/3B
- PSS1/3B//PEM1F
- PSS1/3C
- PSS1B
- PSS1C
- PSS3/EM1B
- PUB/EM1H
- PUBH
- R2UB
- R3UBH
- Ur

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

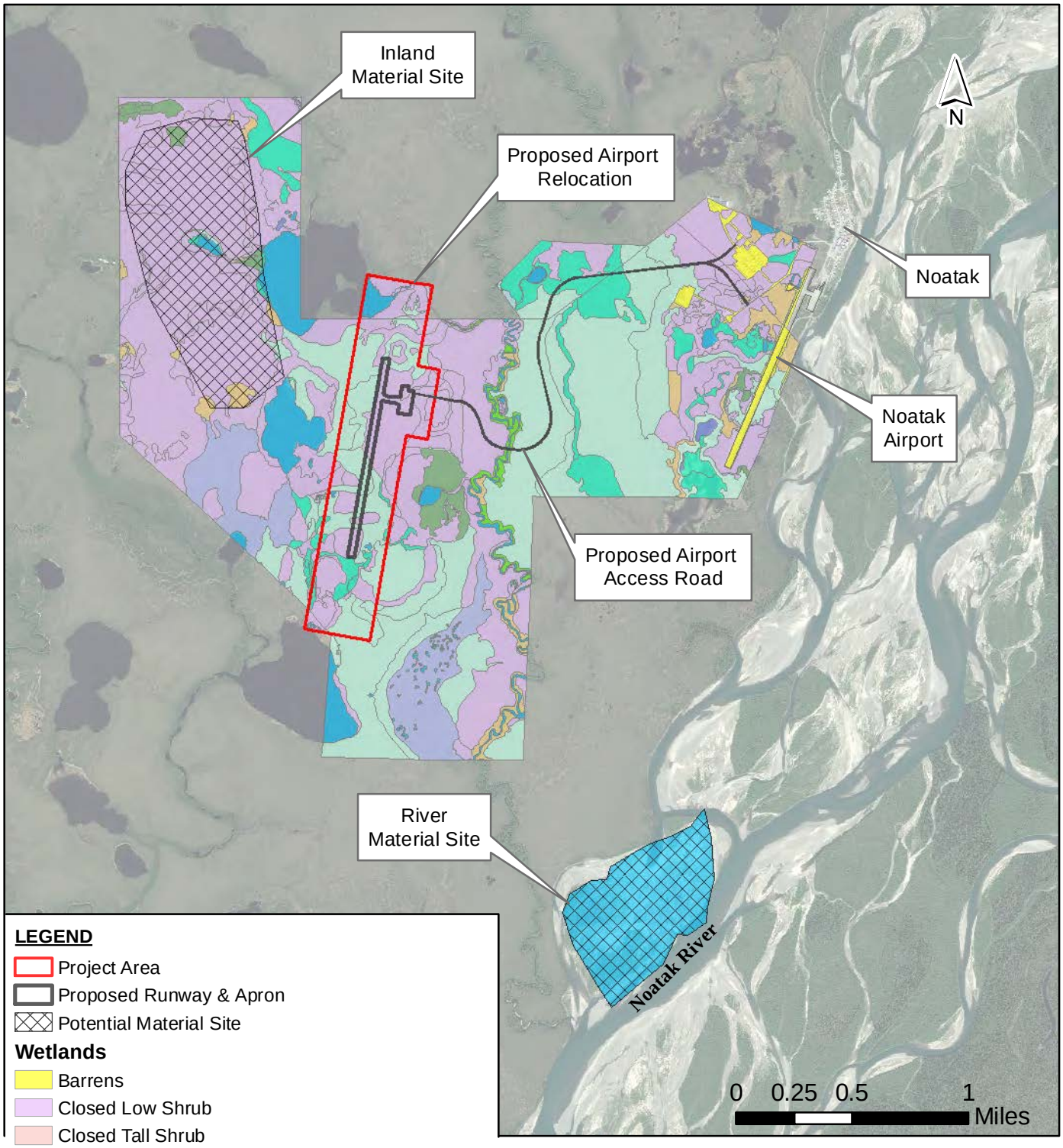
NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Wetlands

DATE: October, 2017

FIGURE **2**

U:\204705\9000\GIS\mxd\Wetlands Verification\204705900_Fig-02_Wetlands.mxd Revised: 2017-10-04 By: rpannone



LEGEND

- Project Area
- Proposed Runway & Apron
- Potential Material Site

Wetlands

- Barrens
- Closed Low Shrub
- Closed Tall Shrub
- Moist Graminoid Meadow
- Needleleaf Woodland
- Open Low Shrub
- Open Low Shrub/Wet Graminoid Meadow Complex
- Open Needleleaf Forest
- Open Tall Shrub
- Stream
- Water
- Water/Aquatic Marsh Complex
- Wet Graminoid Meadow

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2301 Peger Road Fairbanks, AK 99709

NOATAK AIRPORT RELOCATION
NOATAK, ALASKA

Viereck

DATE: October, 2017 | FIGURE **3**

U:\20475\60000\GIS\mxd\Wetlands Verification\20475\9000_Fig-03_Wetlands_Viereck.mxd Revised: 2017-10-06 By: cpammons

Appendix B: 2006 Wetland Report

NOATAK, ALASKA, AIRPORT RELOCATION:
WETLAND AND HABITAT STUDY

Prepared for

Julianne M. Hanson, P.E., Associate
Environmental Project Manager
USKH, Inc.
2515 A Street
Anchorage, AK 99503

Prepared by

Erik Pullman
ABR, Inc.–Environmental Research & Services
P.O. Box 80410
Fairbanks, AK 99708

April 2006


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INTRODUCTION

The village of Noatak, Alaska, is located on the banks of the Noatak River, about 55 miles north of Kotzebue and 70 miles north of the Arctic Circle (Sec. 18, T025N, R019W, Kateel River Meridian). The village is located at the north and western edge of treeline in an area that represents a transition between boreal and tundra biomes. Average summer temperatures range from 40 to 60°F with the average winter temperature ranging from 15 to -21°F. Temperature extremes range from -59 to 75°F. Annual precipitation is 10–13 inches, including 48 inches of snowfall (ADCA 2005).

Noatak began as a hunting and fishing camp in the 19th century and developed into a permanent settlement due to the abundant subsistence resources in the area. A post office was established in 1940. A state-owned airport supports numerous commercial carriers that provide cargo and passenger service throughout the year. Currently, the village is not serviced by barges on the Noatak River (ADCA 2005). The establishment of the Cape Krusenstern National Monument and the Noatak National Preserve and Wildlife Preserve have increased air traffic through Noatak and made it a gateway to Park visitors.

The existing airport is currently threatened by bank erosion along west side of the Noatak River and will need to be relocated. Previous efforts to slow bank erosion using engineered structures have been unsuccessful. Relocation efforts will require the development of gravel resources in addition to the land required to accommodate the new airport facilities. An area southwest of the existing airport (study area) was identified by the Alaska Department of Transportation and Public Facilities (ADOT&PF) as potential locations for a new airport and materials site.

To support environmental permitting needs for airport relocation projects proposed by the ADOT&PF, an assessment was conducted of the wetlands and habitats within the study area boundaries. The wetlands study included classification and mapping of wetlands, vegetation, and wildlife habitats using aerial photointerpretation; a functional assessment of wetland types; and an evaluation of habitat values for selected wildlife species.

METHODS

VEGETATION AND WETLANDS

Wetland and vegetation types were classified and mapped in the study area using true-color aerial photography acquired by Aeromap, Inc., in October 2005, at a nominal scale of 1:2,400 (1 in = 700 ft). Wetland and vegetation community boundaries were delineated based on color signature, plant canopy, and surface relief, along with hydrological indicators such as drainage patterns and surface water connections. Mapping codes used for each wetland type followed *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Wetlands with similar functions were grouped into wetland types to simplify mapping display. Vegetation types were identified using Level IV classifications outlined in *The Alaska Vegetation Classification* (Viereck et al. 1992). Level IV classifications were grouped into Level III vegetation classes for mapping and discussion. Similarly, habitat types were assigned based on vegetation communities and physiographic landscape position (riverine, lowland, upland). Similar habitat types were grouped based on Level III vegetation classifications for mapping and reporting. No existing wetland maps from the National Wetlands Inventory (NWI) were available for the study area.

Maps were produced by digitizing polygons of each wetland, vegetation, or habitat type using *ArcMap GIS 9.1* software (ESRI, Redlands, CA). Maps were produced in the same spatial coordinate system as the aerial photography (Alaska State Plane, NAD83). Wetland types are presented in standard NWI map annotation; Alaska vegetation classes are presented according to Viereck et al. (1992). A tabular key to these annotations is provided with the map.

WETLAND FUNCTIONAL ASSESSMENT

The functional importance of wetlands in the study area was evaluated using criteria outlined in the *Literature Review and Evaluation Rationale* of the Wetland Evaluation Technique (Adamus et al. 1991). Because no field verification surveys were performed for this project, wetland functions were inferred from aerial photographic interpretation (open water connections, vegetation community types, landscape position), and our experience from surveys in similar areas of Alaska (Koyuk Airport, Rock Creek Mine, Glacier Creek Road).

The general procedure to evaluate wetland functions is based on the Hydrogeomorphic (HGM) Classification System (Brinson 1993). HGM models have not been developed for all of the wetlands found in study area, so this modified approach was used so that all wetlands would be evaluated using the same method. The relative importance of ten processes or attributes, encompassing hydrological, water quality, ecological, and social functions of wetlands in the project area were qualitatively ranked into categories of low, medium, and high importance. Many of these attributes are not exclusive to wetlands in the area.

Most wetland functional assessment rankings were based on landscape position, wetland size, relative abundance, and current knowledge of the study area. Additional information used in the evaluation included local topography, available information on animal use, and plant community structure. To simplify the number of wetland types evaluated, wetlands that were similar in function and vegetation structure were grouped into broader categories.

HYDROLOGY

Hydrology functions were determined from the topographic relation of the wetland surface to the local water table. For basins, the presence of an inlet or outlet (or both) was determined from aerial photography. Three specific processes were considered.

Ground water discharge—Movement (vertical or lateral) of water from the subsurface to the surface.

Ground water recharge—Downward movement of water from a wetland into the subsurface.

Erosion control and flow regulation— Various mechanisms that slow or impede the movement of water downslope and thus reduce its erosive force and moderate local stream flows.

WATER QUALITY

Water quality functions are wetland processes that can remove sediments, nutrients, and anthropogenic contaminants from the water while contributing important material to the invertebrate food web. Three general processes were considered.

Sediment/toxicant retention—A combination of physical and biological processes that result in the reduction of suspended sediment of water moving across or through a wetland.

Nutrient retention—Biological processes that result in the incorporation of dissolved nutrients (mainly N and P) into plant tissue and organic sediments. Also includes the process of denitrification in wetland soils.

Production export—The movement of relatively large amounts of organic material derived from primary production to adjacent areas. This process can include a wide range of secondary production exports such as insect emergence.

ECOLOGY

Ecological values are based on the relative ability of a wetland to support animal populations and provide local habitat diversity. Three general characteristics of a wetland were considered.

Aquatic habitat—The potential of a wetland to support a viable fish or invertebrate population.

Wildlife habitat—The potential of a wetland to support wetland-dependent birds; other locally abundant animals such as moose will be considered.

Regional ecological diversity—An index to how much a given wetland contributes to the overall landscape diversity of the watershed within which it is located. Wetland types that are regionally rare receive higher scores.

SOCIAL

Social values considered for this analysis include subsistence and recreational uses. These values include the importance of a wetland for hunting and gathering activities (e.g., fishing, waterfowl and mammal hunting, berry picking, firewood, and edible plant gathering), and transportation (boating or winter travel). Rankings for this value were made on the potential of a wetland to support subsistence activities.

No data, previous study, or ranking systems were available to evaluate the intangible social values of open space and aesthetics. While certain ranking systems for such values exist (for example, see U.S. Forest Service 2002), these systems are specific to the areas for which they were developed and may not be applicable to the current study area. In general, the study area and surrounding landscape are only lightly influenced by human use and appear continuous with the regional wilderness outside the immediate boundaries of the village. These subjective measures can not be evaluated without input from local residents and other interested parties; therefore, they were not considered in the context of wetland functional values.

HABITAT EVALUATION

Habitat types in the study area were derived by integrating information from NWI classifications (Cowardin et al. 1979), Alaska vegetation classifications (Viereck et al. 1992), and landscape characteristics considered important to wildlife, such as availability of food, security (or escape), and shelter. These factors may be directly related to the quantity and quality of vegetation, soils, hydrology, microtopography, and/or microclimate. In practice, multiple related NWI types and Alaska vegetation classes often comprise a single habitat type.

Typical wildlife use of habitats was determined from the wetland and vegetation classifications, the derived wildlife habitat classes, and a review of available literature on wildlife-habitat relationships in the region (ADNR 1989, Platte and Stehn 2002). Habitat value is a function of several factors including availability of cover, availability of food, availability of any special habitat needs, and the spatial and temporal arrangement of habitat (Adamus et al. 1991). Pertinent wildlife values include important foraging habitats, nesting or denning habitats, and habitats providing other important behavioral or life-history functions (e.g., escape cover from predators, seasonal food sources). Existing literature and data available from state and federal agencies in conjunction with vegetation classification of 2005 aerial photography were used in the determinations of wildlife habitat value for each habitat class.

RESULTS AND DISCUSSION

WETLANDS AND VEGETATION

The airport study area (2705.2 acres) was classified into 19 wetland NWI classes that covering a total of 2683.2 acres (Table 1; Figures 1–2); the remaining 21.9 acres were Uplands. The landscape is gently rolling tundra with open forest stands in protected area such as lee slopes and river and stream corridors. Lakes, bogs, and wet meadows occupy local depression basins. Many of these basins represent drained lakes in various stages of vegetational succession. Much of the vegetational diversity in the study area is the result of the interaction of both hydrological and successional processes that occur in these basin areas.

The 19 NWI types were grouped into 13 wetland types based on vegetational and hydrological similarities (Table 1). Upland areas were limited to fill and barren areas associated with the existing airport and the village of Noatak. The most common wetland types consist of

shrub-sedge tundra (PSS1/EM1B, 776.3 acres) and moist graminoid-shrub tundra (PEM/SS1B, 737.7 acres). These wetland types occupy much of the lands between basins and tend to be dominated by sedge-willow and shrub-tussock tundra communities (Table 2, Figure 3).

Shrub tundra (PSS1/3B and PSS1B) is common in the study area (429.1 acres) with locally improved drainage and is indistinct from shrub-sedge tundra across the study area. The wetland type includes shrub-birch dominated closed and open low shrub (PSS1/3B) and willow dominated open and low shrub (PSS1B) communities. Boundaries between shrub-sedge tundra and shrub tundra should be considered approximate, as these types were difficult to distinguish due to the late date of the aerial photography.

Much of the basin areas supported graminoid-shrub bog communities (373.2 acres). These communities included wet graminoid meadow (PEM/SS1F), moist graminoid meadow (PEM1/SS3B), open low shrub/wet graminoid complex (PSS1/3B//PEM1F), and open low shrub (PSS3/EM1B) communities. All these communities develop on relatively thick peat deposits and represent a successional continuum from wet to moist soil conditions.

The remaining wetland types all represent 3.5% or less of the study area. No isolated wetland areas were noted within the study area. Uplands were limited to 21.9 acres of gravel fill and barren areas associated with the existing airstrip, roads and pads in the village of Noatak, and development associated with the village landfill (Figure 1). Based on our experience performing ecological land surveys in the Noatak National Preserve, upland areas may occur within the study area, but it is not possible to verify this without extensive field verification surveys. Possible upland areas include areas currently delineated as needleleaf forest (PFO4/SS1B), and some shrub tundra areas identified as woodland habitats (PSS1/3B). Some riverine scrub areas (PSS1C and PSS1/3C) may also include uplands.

WETLAND FUNCTIONAL ASSESSMENT

The functional values of wetlands in the study area are influenced by a short growing season, presence of continuous permafrost across the study area, wildlife use, remoteness from large population centers, and limited urban or industrial development. Because soils are underlain by permafrost, hydrological functions are somewhat limited. All other ecological, and water quality

functions of wetlands in the study area are difficult to evaluate without ground survey data. However, wetlands in this area are contiguous with an extensive region that extends across a wide valley as part of a roughly ten mile wide corridor of wetlands that flanks the banks of the Noatak River. Social values of local wetlands were scored based on the results of interviews with Noatak residents (Mobley 2006).

Many of the wetland functions described here are not unique to this study area, but are common to terrain in this region. An exception to this is the wetland areas bordering the existing airstrip and village development. These areas likely perform important water-quality functions by intercepting sediments and toxicants originating from upland fill areas. These functions are not specific to a particular wetland type, but are a result of the wetlands proximity to existing development. Ecological values of wetlands in the study area are primarily determined by relative wildlife use. Many of the wetland and upland shrub communities in the study area probably provide valuable habitat for passerines and small mammals (shrews, voles, and other microtines). A complete summary of the rankings of the functional values for wetland types is presented (Table 3).

HABITAT EVALUATION

Eighteen wetland habitat types were identified in the study area (Figure 4, Table 4). Upland habitats were limited to human fill areas, and are not considered in this discussion. The dominant habitats were Lowland Moist Tundra (819.8 acres), Lowland Tussock Tundra (730.1 acres), Lowland Low Scrub (394.7 acres), and Lowland Low Scrub/Wet Tundra Complex (168.3 acres). The remaining habitat types covered 5% or less of the study area. A summary of the characteristics of the habitats found and their wildlife use is presented below.

WETLAND HABITATS

Lowland Aquatic Marsh/Pond Complex: This habitat types occurs in young drained basins and infilling ponds and includes areas of open water and aquatic vegetation. The marshes in this part of the state typically include sedges, such as water sedge (*Carex aquatilis*), Northwest Territory sedge (*Carex utriculata*), and cottongrass sedge (*Eriophorum angustifolium*). Wildlife values include foraging, nesting, and brooding areas for waterfowl and shorebirds, and staging

areas for some migratory species of waterfowl, such as geese and swans (Lensink and Derksen 1990, Platte and Butler 1992, The Institute for Bird Populations 2003). Moose also use these habitats to forage on emergent vegetation.

Lakes: Lakes (and associated littoral zone) occurred in the western portion of the study area (94.5 acres) and occurred in large, isolated basins. Lakes provide the highest quality wildlife habitat in the study area. These lakes only receive input from precipitation and local runoff sources. These lakes are favored by waterbirds because they have 1) extensive shallow areas that can be used for foraging and provide open water areas in early spring; 2) well-developed littoral zones that support a variety of important submerged plant forage species; and 3) typically are bordered by wet graminoid meadows that provide nesting and foraging habitat. Waterfowl, particularly swans, geese, and ducks, would use the open water found on these lakes during migration and during the breeding season. Other waterbirds, including loons, gulls, grebes, and shorebirds also would use these habitats during the summer season. Noatak residents indicated that these lakes are occasionally used for subsistence hunting of waterfowl, but do not support populations of game fish.

Ponds: Ponds occur throughout the study area and cover a total of 19 acres. Small, shallow ponds adjacent to the airport probably have limited habitat value. Other ponds likely provide valuable waterfowl habitat. These ponds can provide resting/foraging habitat for migrating waterbirds, cover and forage for wood frogs (*Rana sylvatica*) and aquatic invertebrates, as well as forage for moose (*Alces alces*) and muskrats (*Ondatra zibethicus*).

Streams: The Kuchoruk Creek and its tributaries cross the center of the study area and cover a total of 18.4 acres. These streams may provide pathways for nutrient export from inland wetland areas (particularly tussock tundra areas) to the Noatak River. The streams may serve as migration corridors for small fish populations between inland lakes and the Noatak River. Noatak residents use the creek for access to berry picking area and to fish for whitefish, pike, trout, and arctic char (Mobley 2006). Residents also report hunting along the banks for ptarmigan, muskrat, and waterfowl.

Riverine Low Scrub and Riverine Tall Scrub: These habitats are seasonally flooded areas bordering Kuchoruk Creek and its tributaries and cover 26.1 acres in the study area. These habitats provide erosion control and some flow moderation during spring breakup. However, flooding may be infrequent due to the high and steep banks of Kuchoruk Creek (Mobley 2006)

Moose may prefer these areas as winter habitat due to presence of preferred forage (willows) and proximity to a travel corridor when the river freezes. Because of their location these areas may serve as escape cover for a variety of species during winter months when humans and wildlife may be using the frozen water to travel. Riverine Tall Scrub is highly productive breeding habitat for several passerine species including Northern Waterthrush (*Seiurus noveboracensis*), Orange-crowned Warbler (*Vermivora celata*), Wilson's Warbler (*Wilsonia pusilla*), Yellow Warbler, Blackpoll Warbler, and Fox Sparrow. Avian use of Riverine Low Scrub is typically low compared to Riverine Tall Scrub and is primarily limited to sparrows, such as the Savannah Sparrow (*Passerculus sandwichensis*). Arctic Warblers may also occur in this habitat.

Riverine Needleleaf Forest: Functions of this type are probably similar to those described for Lowland Needleleaf Forest habitats. These forests occur as very narrow bands of trees that establish on river levees. In the study area, this habitat occurs along Kuchoruk Creek and covers 22.2 acres. The relatively large stature of trees in riverine forest results in structural elements that are usually not found in forests elsewhere in the study area, attracting many forest-associated wildlife species that are near their northern distributional limit. Large snags often occur within mature white spruce stands that provide nest sites for cavity-nesting birds such as woodpeckers. Riverine stands also contain trees large enough to attract stick-nesting raptors, such as the Red-tailed Hawk (*Buteo jamaicensis*), Bald Eagle (*Haliaeetus lecuocephalus*) and the Great Horned Owl (*Bubo virginianus*), and corvids such as the Common Raven (*Corvus corax*). However, these species occur at relatively low densities in the study area. Mammals such as porcupine (*Erethizon dorsatum*), marten (*Martes americana*), and lynx often use riverine forests for browsing and hunting. Riverine Needleleaf Forest is also a preferred habitat for small mammals such as microtine rodents and the red squirrel (*Tamiasciurus hudsonicus*).

Lowland Aquatic Marsh: Marshes in the study area are semi-permanently flooded areas of emergent vegetation such as marsh horsetail (*Equisetum fluviatile*) or sedges (*Carex* spp.), and can occur in drained basin margins, pond margins, abandoned drainage channels, and in thermokarst areas. This habitat type covers 17.6 acres within the study area. Wildlife values for lowland sedge marshes include providing foraging and nesting areas for waterfowl and shorebirds, and staging areas for some migratory species of waterfowl, such as geese and swans (USFWS 2000). Moose forage on emergent vegetation in these habitats.

Lowland Wet Tundra: This habitat type frequently is associated with ponds and marshes, but also is interspersed between Lowland Open Scrub wetlands and in local depressions and areas of poor drainage due to the impoundment of surface water from gravel placement. This habitat type includes both Wet Sedge Tundra and Wet Sedge-Willow Tundra components and covers 131.5 acres. Wildlife use and habitat values for lowland wet meadows are similar to those for the lowland aquatic marsh, although the limited surface water may restrict use by some species that need open water for foraging, thus, overall habitat value is somewhat reduced for waterbirds. Sites close to lakes and ponds would make them attractive to dabbling ducks for feeding. Shorebirds such as Lesser Yellowlegs (*Tringa flavipes*) also are attracted to these areas. Microtines, such as voles and lemmings, will use drier areas in these habitats for nesting and foraging.

Lowland Moist Tundra: This type incorporates a number of related components (Table 3), but all are dominated by sedges with a varying amount of low shrub cover. This type was the most extensive in the study area and covered 819.8 acres. Most of this habitat type is characterized by patterned-ground development consisting of slightly raised polygon rims surrounding a wetter polygon center. Wildlife values are primarily in the provision of foraging habitats for a variety of mammals and as nesting habitat for some birds (primarily songbirds and a few shorebirds). Moose are likely to forage in this habitat, as browse is readily available. Overall wildlife value for this type is low-moderate, but may rank higher for some species.

Lowland Moist Meadow: This habitat is associated with pond margins in drained basins and in thermokarsting areas along in the vicinity of the airstrip and cover 28.1 acres of the study area. These meadows may have developed from Lowland Wet Meadows, but are probably dry during at least part of the growing season. Mammal use is probably restricted to foraging and other uses by microtines and voles. This habitat type is predominantly used by shorebirds and passerines for nesting and feeding.

Lowland Tussock Tundra: In the study area, this habitat is characterized by low shrubs such as bog blueberry (*Vaccinium uliginosum*) and *Eriophorum vaginatum* tussocks. This habitat type tends to occur in raised microsites and lacks obvious patterned-ground formations. Lowland Tussock Tundra is the second-most common habitat in the study area and covers 730.1 acres. Wildlife use is similar to that for Lowland Moist Meadows.

Lowland Tall Scrub: This habitat is dominated by tall willows (*Salix* spp) and shrub birch. In better-drained areas with favorable growth conditions, the shrub stands can have a closed canopy, but open canopy stands are more common. Tall shrub stands were uncommon in the study area and covered only 5.3 acres. This type mainly occurs in drained basin margins. Moose typically prefer this habitat, although the proximity and interspersion of the habitat relative to the village may precludes most use. Songbirds, such as warblers and sparrows, also use these habitats (Spindler and Kessel 1980, Sowl 2003).

Lowland Low Scrub: A diverse number of habitat components make up the Lowland Low Shrub type (Table 3), but all are composed shrub birch (*Betula gladulosa*) and low willow in varying proportions. The understory may contain significant cover of ericaceous shrubs, sedges, and mosses. In better-drained sites, the shrub canopy may be closed, but the open canopy community is more common. This habitat is the third-most common type and covers 394.7 acres in the study area. Lowland Low Scrub is of value to a few passerine species, primarily sparrows. Lowland Low Scrub could also be used by the Arctic Warbler (*Phylloscopus borealis*), which tends to select low scrub habitats; this species was listed as a Species of Conservation Concern by USFWS in 2002. Moose also will use these habitats, if dominated by willows (ADF&G 1986).

Lowland Low Scrub/Wet Tundra Complex: The largest area of this type occurs in the southern-central portion of the study area. This habitat is common in old colluvial basins and consists of raised peat "islands" that support dense shrub birch stands. These islands are separated by shallow ponds and wet sedge swales. This habitat type covers 132 acres. Wildlife use is similar to that for Lowland Low Scrub, but the addition of wetter tundra areas probably attracts more waterbirds, such as shorebirds, to these habitats.

Lowland Bog: Vegetation is dominated by sedges, forbs and various ericaceous low and dwarf shrubs. These areas are likely saturated at or near the surface from spring through mid-summer or beyond, and may have some standing water. This habitat is common throughout the study area and covers 132 acres. Wildlife use and habitat values are similar to those for the Fresh Sedge Marsh, although the lower coverage by shallow water may restrict use by some species that need open water for foraging and lowers the overall value of this habitat type.

Lowland Needleleaf Forest and Needleleaf Woodland: This habitat is characterized by a variable cover of white spruce (*Picea glauca*) with an understory of willow and ericaceous shrubs. Lowland Needleleaf forests tend to occur in isolated patches across the study area with a

total cover of 51 acres. Lowland Needleleaf Woodlands are similar habitats, but with a greater cover of deciduous shrubs. Woodlands have a low (<25%) cover of white spruce (*Picea glauca*) with an understory of willow and ericaceous shrubs. Wildlife values are moderate-to-high primarily because of the mixture of both tree and shrub cover, which provides habitats for some species not found in habitats dominated only by shrubs. Bird densities in lowland needleleaf forests were intermediate between those of shrub and forested habitats in the Upper Tanana River Valley (Spindler and Kessel 1978, 1980). Although foraging moose do use this habitat, it does not provide the high-quality forage found in the lowland shrub and meadow habitats. Berries provide a seasonal food source for small mammals, birds, and bears in this habitat.

Lowland Needleleaf Woodland: Similar to Lowland Needleleaf forest, but with a greater cover of deciduous shrubs. This habitat is characterized by a thin (<25%) cover of white spruce (*Picea glauca*) with an understory of willow and ericaceous shrubs. This habitat has moderate-to-high values as wildlife habitat primarily because of the mixture of scattered trees and shrub cover, which provides habitats for some species not found in habitats dominated only by shrubs. Bird densities are less than in Lowland Needleleaf Forests and similar to more shrub-dominated habitats (Spindler and Kessel 1978, 1980). Although foraging moose do use this habitat, it does not provide the high-quality forage found in the lowland shrub and meadow habitats.

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Table 1. Wetland classes in the Noatak airport relocation study area, Noatak, Alaska, 2005.

Wetland Class	NWI Code[a]	NWI Descriptor	Total Area (acres)
Lake	L1UBH	Lacustrine, limnetic, unconsolidated bottom, permanently flooded	94.5
Aquatic Herbaceous	L2ABH	Lacustrine, littoral, aquatic bed, permanently flooded	1.9
Perrenial Stream	R3UBH	Riverine, upper perrenial, unconsolidated bottom, permanently flooded	18.4
Pond	PUBH	Palustrine, unconsolidated bottom, permanently flooded	19.0
Aquatic Graminoid Marsh	PEM1H	Palustrine, emergent, persistent, permanently flooded	15.6
	PUB/EM1H	Palustrine, unconsolidated bottom/emergent persistent, permanently flooded	4.2
Wet Graminoid Meadow	PEM1F	Palustrine, emergent, persistent, semipermanently flooded	78.6
Graminoid-Shrub Bog	PEM/SS1F	Palustrine, emergent, persistent/scrub-shrub, broad-leaved deciduous, semipermanently flooded	10.6
	PEM1/SS3B	Palustrine, emergent persistent/scrub-shrub, broad-leaved evergreen, saturated	104.2
	PSS1/3B// PEM1F	Palustrine, broad-leaved deciduous/broad-leaved evergreen, saturated//Palustrine, emergent, persistent, semiperanently flooded	168.3
	PSS3/EM1B	Palustrine, scrub-shrub, broad-leaved evergreen/emergent, persistent, saturated	90.1
Moist Graminoid Meadow	PEM1B	Palustrine, emergent, persistent, saturated	30.9
Moist Shrub-Graminoid Tundra	PEM/SS1B	Palustrine, emergent, persistent/scrub-shrub, broad-leaved deciduous, saturated	737.7
Riverine Scrub	PSS1/3C	Palustrine, broad-leaved deciduous/broad-leaved evergreen, seasonally flooded	17.0
	PSS1C	Palustrine, broad-leaved deciduous, seasonally flooded	32.2
Shrub-Sedge Tundra	PSS/EM1B	Palustrine, broad-leaved deciduous/emergent persistent, saturated	776.3
Shrub Tundra	PSS1/3B	Palustrine, broad-leaved deciduous/broad-leaved evergreen, saturated	309.1
	PSS1B	Palustrine, broad-leaved deciduous, saturated	120.0
Needleleaf Forest	PFO4/SS1B	Palustrine, forested, needleleaf evergreen/broad-leaved deciduous, saturated	54.6
Total Wetlands			**2683.2**
Uplands	**Ur**	**Uplands**	**21.9**
Total Study Area			**2705.2**

[a] National Wetland Classification (Cowardin et al. 1979)

Table 2. Vegetation types (Level III and Level IV) in the Noatak airport relocation study area, Noatak, Alaska, 2005.

Vegetation Type	Level IV Vegetation Classification[a]	Total Area (acres)
Water	Fresh Water	0.0
	Water	131.9
Water/Aquatic Marsh Complex	Water/Fresh Sedge Marsh Complex	4.2
Wet Graminoid Meadow	Fresh Sedge Marsh	17.6
	Subartic Lowland Sedge Bog Meadow	0.2
	Wet Sedge Meadow Tundra	78.6
	Wet Sedge-Willow Tundra	52.9
Barrens	Barren	2.2
	Barrens Urban	19.7
Closed Low Shrub	Closed Low Shrub Birch/Willow	10.3
	Closed Low Willow	2.8
Closed Tall Shrub	Closed Tall Willow	0.7
Moist Graminoid Meadow	Moist Sedge-Birch Tundra	121.1
	Moist Sedge-Grass Meadow Tundra	28.1
	Moist Sedge-Shrub Tundra	4.1
	Moist Sedge-Willow Tundra	663.7
	Subarctic Lowland Sedge Moist Meadow	2.8
Needleleaf Woodland	White Spruce Woodland	67.6
Open Low Shrub	Open Low Ericaceous Shrub Bog	90.1
	Open Low Mesic Shrub Birch-Ericaceous Shrub	255.9
	Open Low Shrub Birch-Ericaceous Shrub Bog	13.8
	Open Low Shrub Birch-Willow	73.5
	Open Low Willow	20.0
	Open Low Willow-Graminoid Shrub Bog	12.0
	Open Low Willow-Sedge Shrub Tundra	48.1
	Open Mixed Low Shrub-Sedge Tussock Bog Meadow	11.1
	Open Mixed Low Shrub-Sedge Tussock Tundra	730.1
Open Low Shrub/Wet Graminoid Meadow Complex	Open Low Mesic Shrub Birch-Ericaceous Shrub/Wet Sedge Meadow Tundra Complex	168.3
Open Needleleaf Forest	Open White Spruce	54.6
Open Tall Shrub	Open Tall Willow	19.4
Total Area		**2705.2**

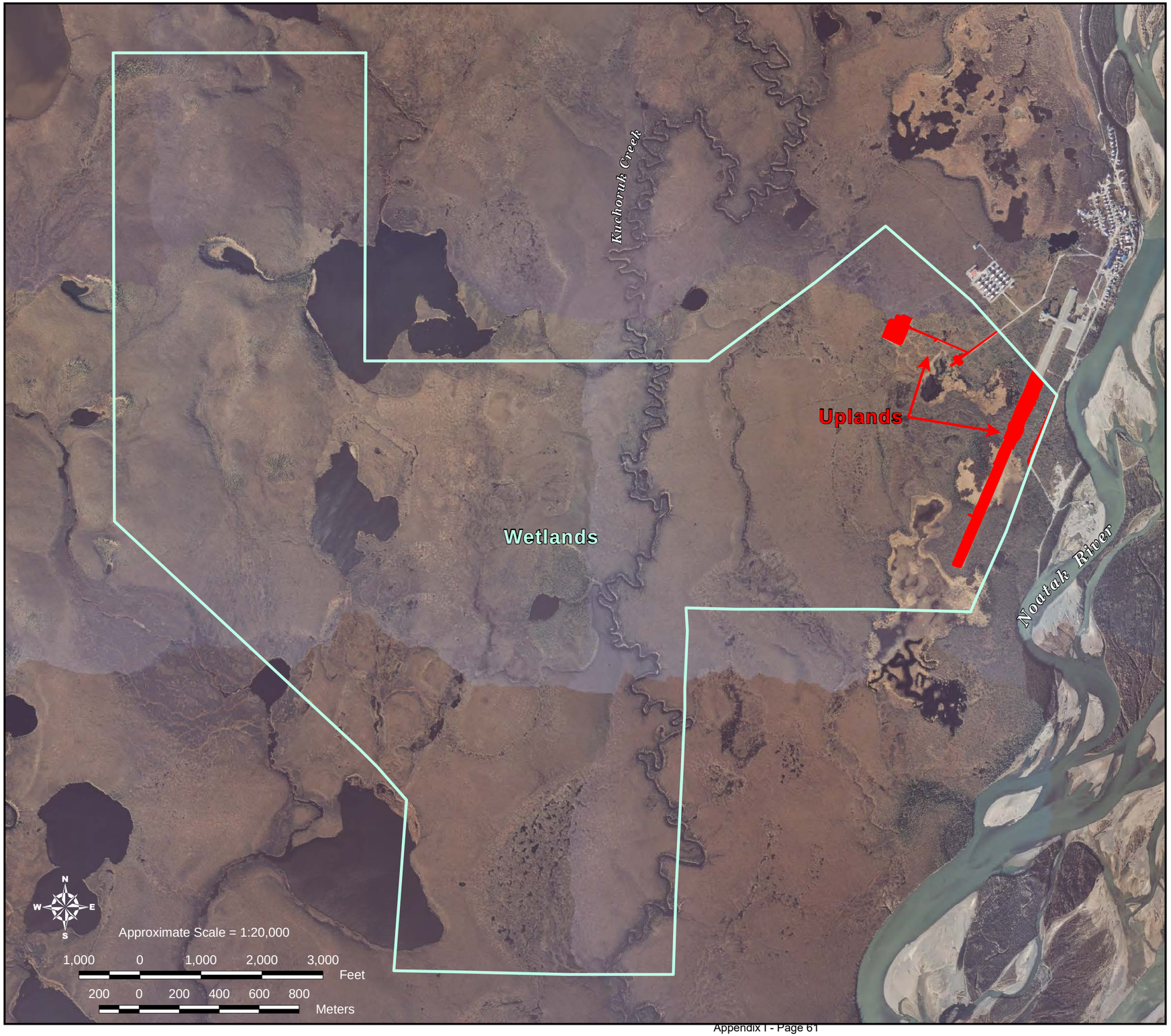
[a] The Alaska Vegetation Classification, Vierek et al. 1992.

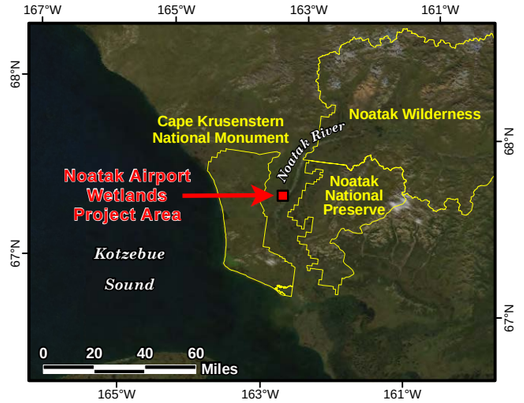
Table 3. Relative functions and values for wetland habitats identified in the Noatak airport relocation study area, Noatak, Alaska, 2005.

Function & Value / Habitat	Groundwater Discharge	Groundwater Recharge	Erosion Sensitivity	Sediment/ Toxicant Retention	Nutrient Retention	Production Export	Fish Habitat	Wildlife Habitat	Regional Ecological Diveristy	Subsistence/ Recreational Use
Lowland Aquatic Marsh/Pond	High	Low	Low	High	High	Med	Low	High	Med	Med
Lake	High	Low	Low	Low	Low	Low/ Med	Med/ High	High	Med	High
Pond	Low	Low	Low	Low	Low	Low	Low	Med	Low	Low
Stream	Med	Low	Low	Low	Low	Med	Med	Med	Med	High
Riverine Low Scrub	Low	Low	High	Med	Low	Low	Low	Med/ High	Med	Low
Riverine Tall Scrub	Low	Low	High	Med	Low	Low	Low	Med/ High	Med	Low
Riverine Needleleaf Forest	Low	Low	High	Med	Low	Low	Low	Med/ High	Med	Low
Lowland Wet Tundra	Low	Low	Low	Low	Low	Low	Low	Med	Low	Low
Lowland Moist Tundra	Low	Low	Low	Low	Low	Low	Low	Med	Low	Med
Lowland Moist Meadow	Low	Low	Low	Med	Low	Low	Low	Med	Med	Low
Lowland Tussock Tundra	Low	Low	Low	Low	Low	Med	Low	Med	Low	Med
Lowland Tall Scrub	Low	Low	Low	Low	Low	Low	Low	High	Med	Low
Lowland Low Scrub	Low	Low	Low	Low	Low	Low	Low	Med	Low	Low
Lowland Low Scrub/Wet Tundra Complex	Low	Low	Low	Low	Low	Low	Low	High	Med	Med
Lowland Bog	Low	Low	Low	Low	Low	Low	Low	Med	Low	Med
Lowland Needleleaf Forest	Low	Low	Low	Low	Low	Low	Low	High	Low	Med
Lowland Needleleaf Woodland	Low	Low	Low	Low	Low	Low	Low	Med	Low	Med

Table 4. Wetland and upland habitat types in the Noatak airport relocation study area, Noatak, Alaska, 2005.

Habitat Type	Habitat Components	Total Area (acres)
Wetland Habitats		
Lowland Aquatic Marsh/Pond Complex	Shallow Water/Lowland Aquatic Sedge Marsh	4.2
Lake	Water, Deep	94.5
Pond	Water, Shallow	19.0
Stream	Upper Perennial Stream	18.4
Riverine Low Scrub	Riverine Low Closed Birch-Willow Scrub	0.3
	Riverine Low Open Birch-Willow Scrub	1.7
	Riverine Low Open Willow Scrub	6.9
Riverine Tall Scrub	Riverine Tall Open Willow Scrub	17.2
Riverine Needleleaf Forest	Riverine White Spruce Forest	22.7
Lowland Aquatic Marsh	Aquatic Sedge Marsh, Shallow Water	17.6
Lowland Wet Tundra	Wet Sedge Tundra	78.6
	Wet Sedge-Willow Tundra	52.9
Lowland Moist Tundra	Moist Sedge Tundra	2.8
	Moist Sedge-Shrub Tundra	125.2
	Moist Sedge-Willow Tundra	663.7
Lowland Moist Meadow	Moist Sedge-Grass Meadow	28.1
Lowland Tussock Tundra	Lowland Shrub-Tussock Tundra	715.5
	Shrub-Tussock Tundra	14.6
Lowland Tall Scrub	Lowland Tall Closed Birch-Willow Scrub	2.2
	Lowland Tall Closed Willow Scrub	0.7
	Lowland Tall Open Willow Scrub	2.2
Lowland Low Scrub	Lowland Low Closed Birch-Willow Scrub	21.7
	Lowland Low Closed Willow	4.0
	Lowland Low Open Birch-Ericaceous Scrub	4.1
	Lowland Low Open Birch-Ericaceous Shrub	216.1
	Lowland Low Open Birch-Willow Tundra	83.7
	Lowland Low Open Willow	12.6
	Lowland Low Open Willow-Sedge Scrub	52.5
Lowland Low Scrub/Wet Tundra Complex	Lowland Low Open Birch-Ericaceous Shrub/Wet Sedge Tundra	168.3
Lowland Bog	Lowland Sedge-Shrub Bog	132.0
Lowland Needleleaf Forest	Lowland Open White Spruce Forest	51.0
Lowland Needleleaf Woodland	Lowland White Spruce Woodland	48.6
Total Wetland Habitat		**2683.6**
Upland Habitats		
Human Disturbed Barrens	Maintained Barrens	19.7
Human Gravel Fill	Gravel Fill	2.2
Total Upland Habitats		**21.9**
Total Area		**2705.0**





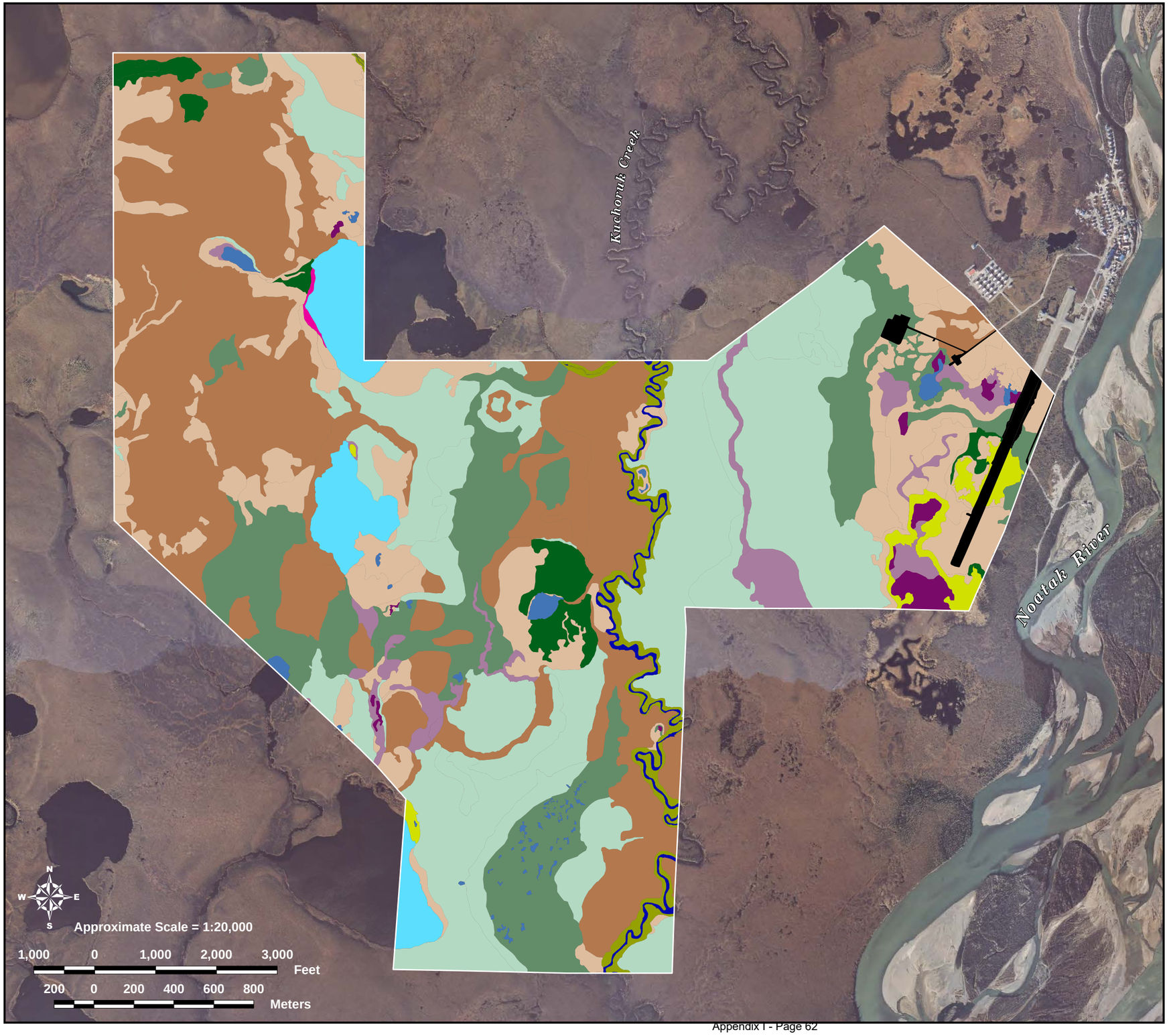
Notes:
Wetland map imagery is true-color photography acquired October 2005 by AeroMap U.S.
Map projection: ASP Zone 7, NAD83, US foot
Inset map imagery: Blue Marble Next Generation, NASA

Wetlands Determination and Habitat Assessment of Noatak Airport, Alaska

Figure 1.
Wetland and Upland Boundaries

ABR, Inc. — environmental research & services
map prepared by:

31 March 2006 | ABR File: Noatak_Airport_Wetlands_Photo_06-201-1.mxd



NWI[1] Code and Associated Wetland Class

Surface Waters of the U.S.:

L1UBH	Lake
L2ABH	Aquatic Herbaceous
R3UBH	Perrenial Stream
PUBH	Pond

Other Waters of the U.S.:

PEM1H, PUB/EM1H	Aquatic Graminoid Marsh
PEM1F	Wet Graminoid Meadow
PEM/SS1F, PEM1/SS3B, PSS1/3B//PEM1F, PSS3/EM1B	Graminoid-Shrub Bog
PEM1B	Moist Graminoid Meadow
PEM/SS1B	Moist Shrub-Graminoid Tundra
PSS1/3C, PSS1C	Riverine Scrub
PSS/EM1B	Shrub-Sedge Tundra
PSS1/3B, PSS1B	Shrub Tundra
PFO4/SS1B	Needleleaf Forest
Ur	Uplands

[1]Follows the National Wetlands Inventory (NWI) classification system of Cowardin et al. (1979). **Jurisdictional Wetland:** All wetlands in this study area have a downstream connection to navigable waters of the Noatak River and are considered jurisdictional.

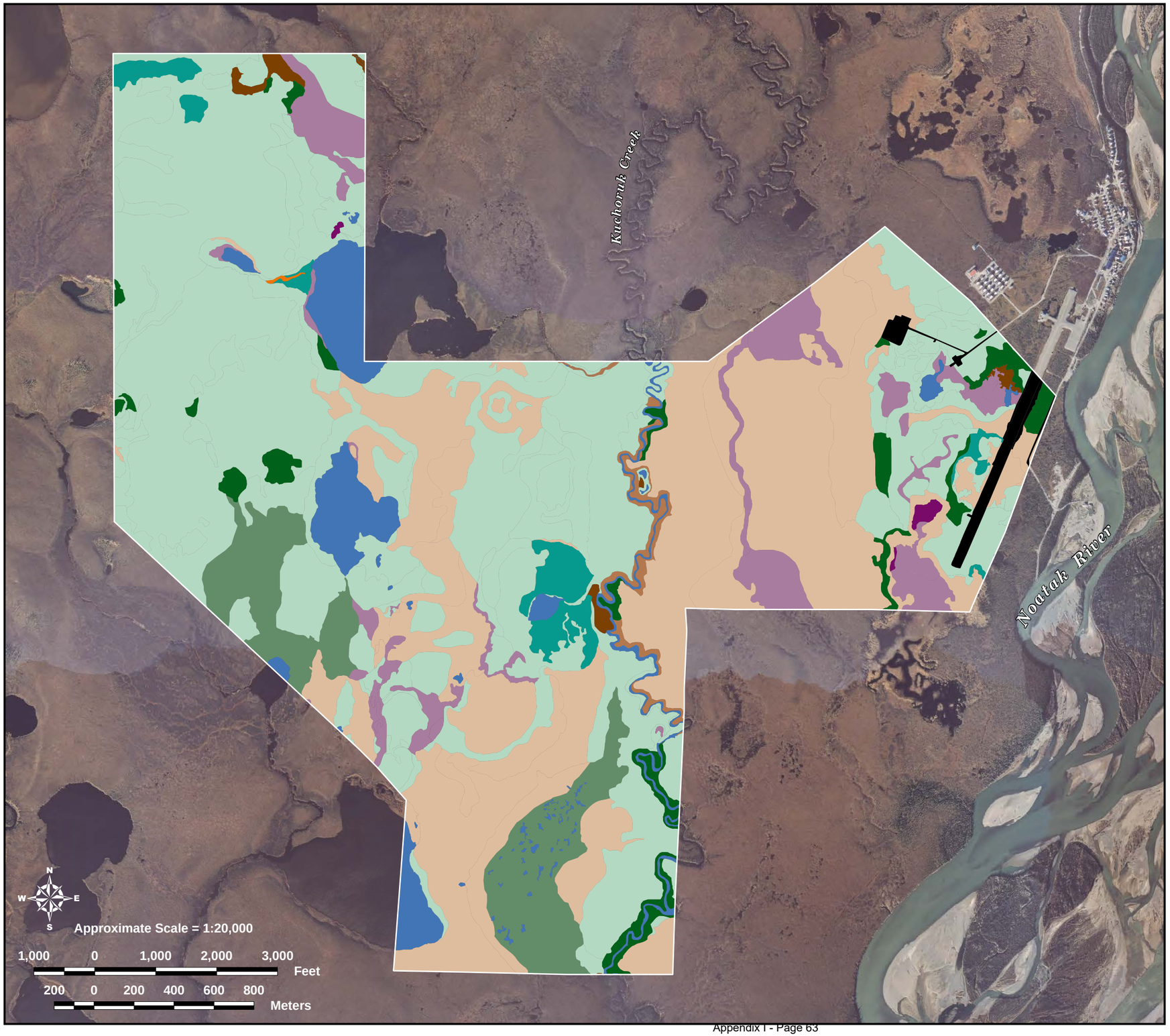
Notes:
Background imagery: true-color photography acquired October 2005 by AeroMap U.S.
Map projection: ASP Zone 7, NAD83, US foot

Wetlands Determination and Habitat Assessment of Noatak Airport, Alaska

Figure 2. Wetland Types

map prepared by:
ABR, Inc. *environmental research & services*

4 April 2006 | ABR File: Noatak_Airport_Wetlands_06-201-1.mxd



Vegetation Type[1]

- Water
- Water/Aquatic Marsh Complex
- Wet Graminoid Meadow
- Moist Graminoid Meadow
- Open Low Shrub
- Open Low Shrub/Wet Graminoid Meadow Complex
- Closed Low Shrub
- Open Tall Shrub
- Closed Tall Shrub
- Open Needleleaf Forest
- Needleleaf Woodland
- Barrens

[1]Level III Vegetation Class of the Alaska Vegetation Classification (Viereck et. al. 1992).

Notes:
Background imagery: true-color photography acquired October 2005 by AeroMap U.S.
Map projection: ASP Zone 7, NAD83, US foot

Wetlands Determination and Habitat Assessment of Noatak Airport, Alaska

Figure 3. Vegetation Types

map prepared by:
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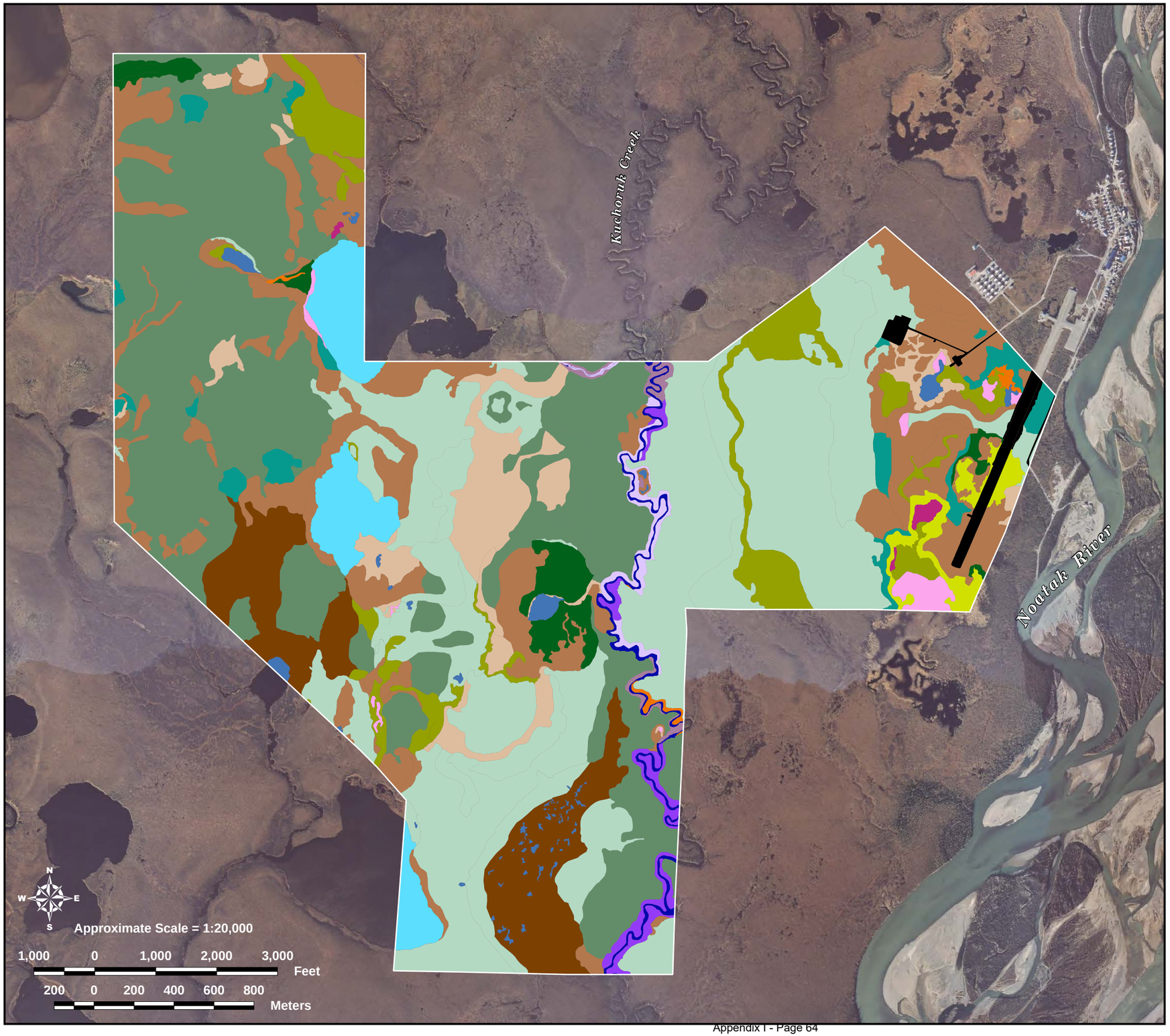

Habitat Type

- Lowland Aquatic Marsh/Pond Complex
- Lake
- Pond
- Stream
- Riverine Low Scrub
- Riverine Tall Scrub
- Riverine Needleleaf Forest
- Lowland Aquatic Marsh
- Lowland Wet Tundra
- Lowland Moist Tundra
- Lowland Moist Meadow
- Lowland Tussock Tundra
- Lowland Tall Scrub
- Lowland Low Scrub
- Lowland Low Scrub/Wet Tundra Complex
- Lowland Bog
- Lowland Needleleaf Forest
- Lowland Needleleaf Woodland
- Human Gravel Fill

Notes:
Background imagery: true-color photography acquired October 2005 by AeroMap U.S.
Map projection: ASP Zone 7, NAD83, US foot

Wetlands Determination and Habitat Assessment of Noatak Airport, Alaska

Figure 4. Habitat Types

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