APPENDIX I

EFH ASSESSMENT

Page

Essential Fish Habitat Assessment for the Kivalina Evacuation and School Site Access Road

Prepared for:
State of Alaska Department of Transportation and Public Facilities, Northern Region

Prepared by:
Stantec Consulting Services Inc.;
Owl Ridge Natural Resource Consultants

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Abbreviations

ADF&G	Alaska Department of Fish and Game
AWC	Anadromous Waters Catalog
BMP	Best management practices
CGP	Construction General Permit
CY	Cubic yards
DOT&PF	Department of Transportation and Public Facilities
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EFHA	Essential Fish Habitat Assessment
ft	Foot/feet
FHWG	Fisheries Hydroacoustic Working Group
FMP	Fisheries Management Plan
K-Hill	Kisimigiuqtuq Hill
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NAB	Northwest Arctic Borough
NMFS	National Marine Fisheries Service
Owl Ridge	Owl Ridge Natural Resource Consultants
Project	Kivalina Evacuation and School Site Access Road
ROW	Right-of-way
SEL	Sound exposure level
Stantec	Stantec Consulting Services Inc.
USACE	U.S. Army Corps of Engineers

1.0 INTRODUCTION AND BACKGROUND

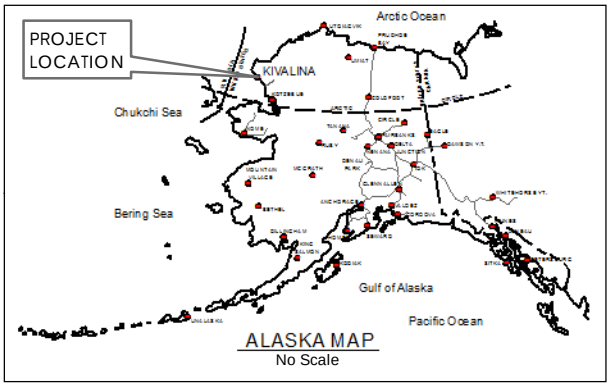
The Alaska Department of Transportation and Public Facilities (DOT&PF) is proposing to construct an all-season road from the Community of Kivalina extending six-miles northeast to a terminus location on Kisimigiuqtuq Hill (K-Hill) (Figure 1). The Kivalina Evacuation and School Site Access Road (the Project) would provide Kivalina residents a safe and reliable evacuation route in the event of a catastrophic storm or ocean surge, allowing evacuees to temporarily mobilize to safe refuge at an assembly site on K-Hill. This site is also identified by the Northwest Arctic Borough (NAB) School District, and approved by the community, as a preferred new location for the community school. If constructed, the school could augment the undeveloped evacuation site by serving as a full-service community emergency shelter with all-season support capabilities.

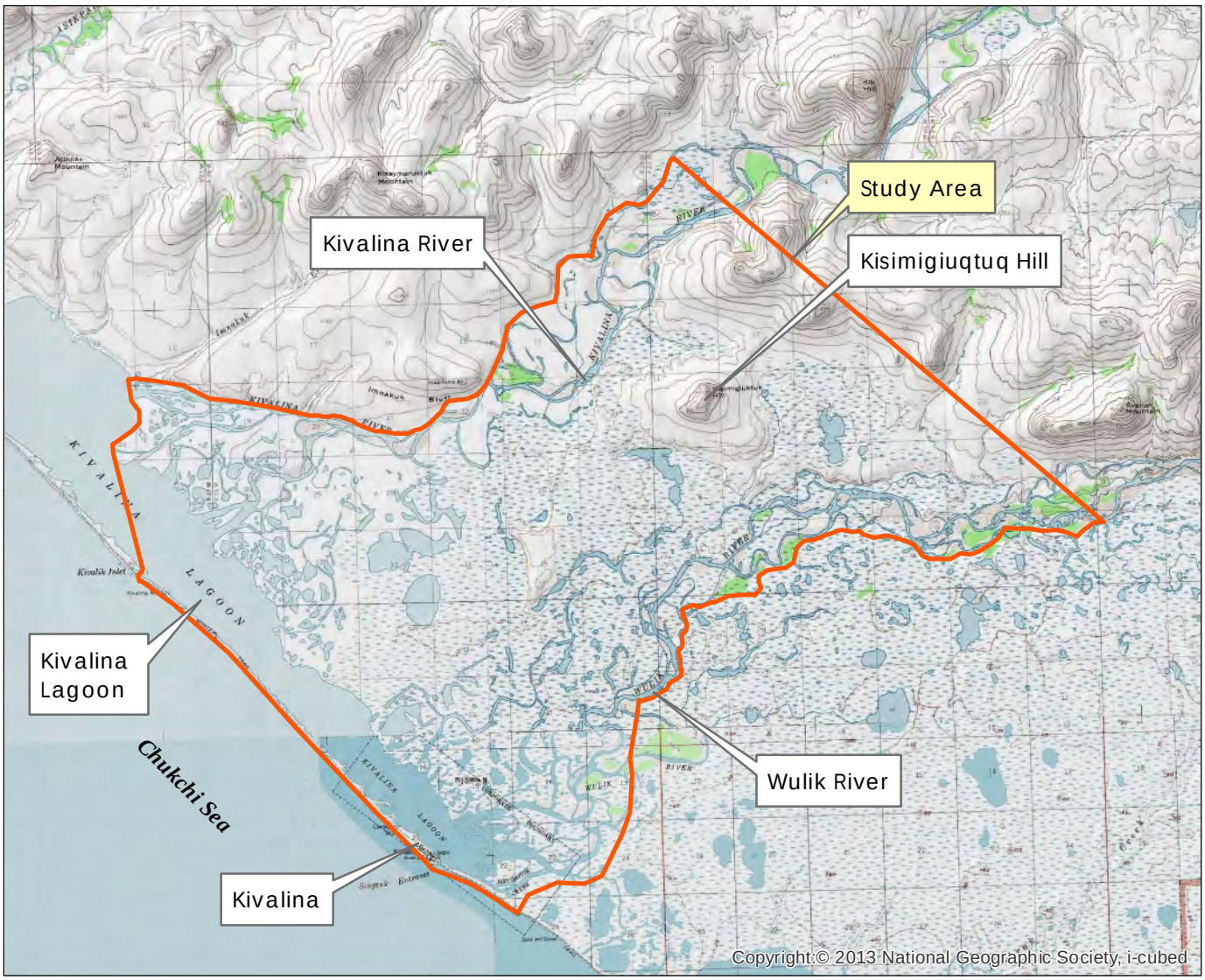
The Study Area encompasses the Kivalina barrier island, the southern portion of Kivalina Lagoon, and the lower Wulik and Kivalina River drainages (Figure 1). The Kivalina River (Anadromous Waters Catalog [AWC] Stream No. 331-00-10044) and the Wulik River (AWC Stream No. 331-00-10060) are both listed as important for the spawning, rearing, and migration of anadromous fish including all five species of Pacific salmon (ADF&G, 2016a). The Kivalina Lagoon is listed in the AWC as Stream No. 331-00-10060-0010 (ADF&G, 2016) and is documented to provide habitat for the same species as the Wulik and Kivalina Rivers. As such, Kivalina Lagoon and the Wulik and Kivalina Rivers are considered Essential Fish Habitat (EFH) under the Federal Management Plan for Pacific Salmon in the Economic Exclusion Zone (EEZ) off the Coast of Alaska (NMFS, 2005; ADF&G, 2016).

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 EFH. To describe how the Proposed Action would affect designated EFH within the Wulik River, Kivalina River, and Kivalina Lagoon, the DOT&PF retained Stantec Consulting Inc. (Stantec) and Owl Ridge Natural Resource Consultants (Owl Ridge) to complete an EFH assessment (EFHA). The objectives of the EFHA are to:

- Describe the Proposed Action and potential construction methods,
- Characterize EFH and EFH species within the Study Area,
- Identify interactions of the Proposed Action with EFH and analyze the effects,
- Identify avoidance and minimization measures specific to the protection of EFH, and
- Summarize the likelihood for the Proposed Action to result in adverse effects to EFH.

Although identified within the Study Area, the Proposed Action does not interact with EFH of the Kivalina River. As such, discussion of EFH within the lower Kivalina River and potential effects is not provided as part of this assessment.





Graphics developed by Stantec Consulting Services, Inc.

Project Origin: City of Kivalina,
Kotzebue Recording District,
Section 21, Township 27N, Range 26W,
Kateel River Meridian

Project Terminus: Kisimigiuqtuq Hill,
Section 19, Township 28N, Range 25W
Kateel River Meridian

0 1.25 2.5 5 Miles

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KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Location & Vicinity Map

DATE: September, 2017 | FIGURE **1**

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2.0 PROPOSED ACTION

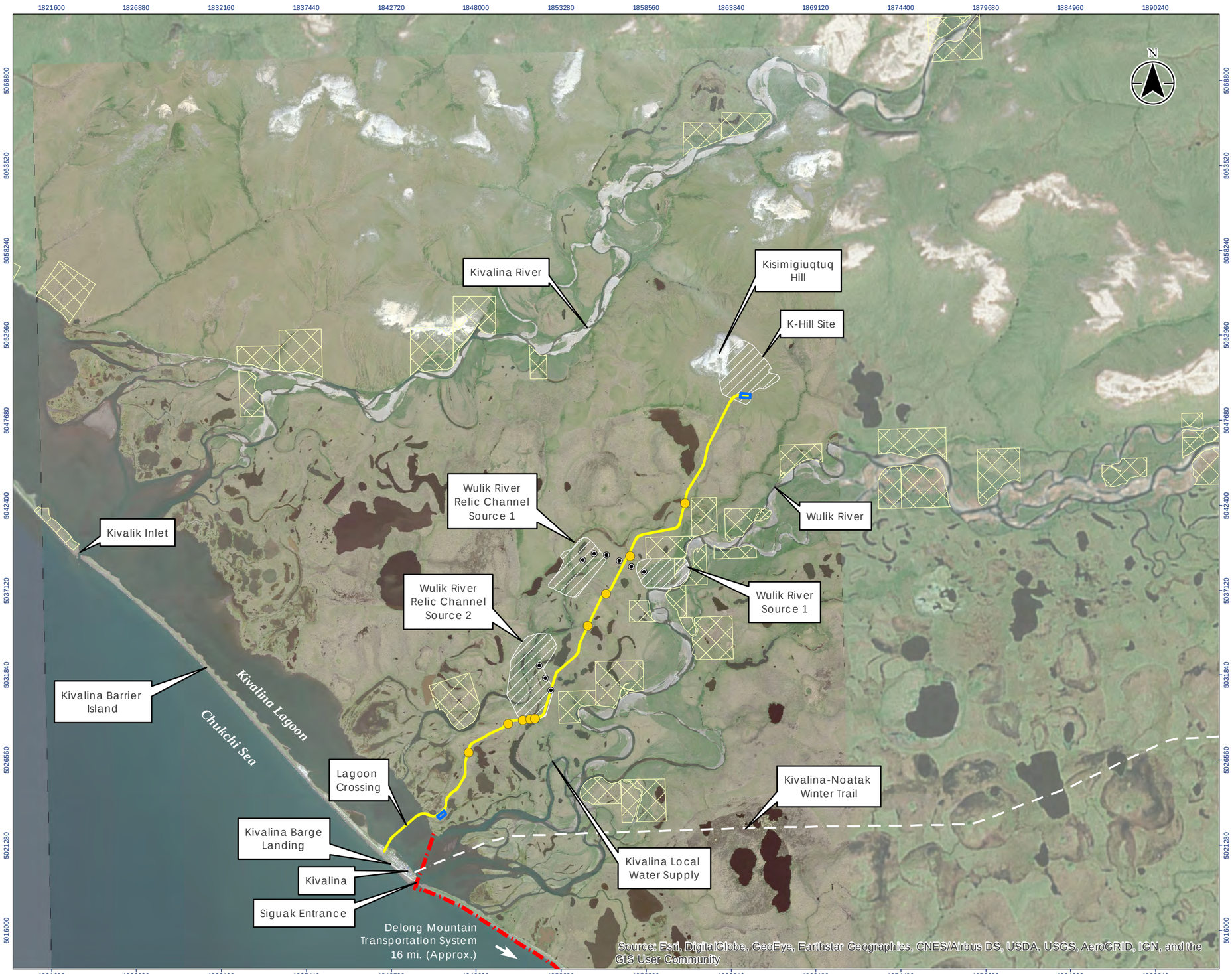
The Proposed Action would construct a safe, reliable, all-season evacuation road between the community of Kivalina and K-Hill. Two route alternatives are being considered, but common to both, are the following actions:

- **Establishment of a safe, reliable, all-season Kivalina Lagoon crossing.** Both alternatives include construction of a causeway across the lagoon that variously incorporate different configurations of hydrological openings including bridge(s), culvert(s), or both.
- **Construction of an all-season gravel access road connecting the Kivalina Lagoon crossing to the K-Hill evacuation site.** The road would be designed to accommodate a wide variety of motorized vehicles over a two-way road with shoulders, multiple turnouts, and side slopes that may include guard rails and other safety features where determined to be necessary and prudent.
- **Development of up to four material sources including the K-Hill Site, Wulik River Source 1, Relic Channel Source 1, and Relic Channel Source 2.** These material sources are anticipated to be suitable local sources of select material to supply the proposed project. Selection and development of viable material sources and haul routes are considered as part of the Proposed Action.

The following sections provide a detailed description of the Proposed Action. Although two route options are being considered, interactions of each with designated EFH in the Kivalina Lagoon and lower Wulik River would be the same. As such, both route options are discussed collectively in Section 2.1. In addition, assumptions were required to complete the EFHA regarding specific design details and construction methods. Where assumptions were made, they have been clearly outlined.

2.1 EVACUATION ROUTE AND LAGOON CROSSING ALTERNATIVES

The Southern Route is approximately 7.7 miles in length and begins adjacent to the Kivalina Airport, immediately crosses the lagoon, and follows lowlands and relic channels of the Wulik River to a 5-acre gravel pad that would serve as an evacuation site on K-Hill (Figure 2). The Combined Route B is approximately 8.9 miles in length and begins adjacent to the Kivalina Airport, immediately cross the lagoon, follows lowlands and relic channels of the Wulik River for approximately 5-miles before shifting northward, following higher ground for approximately 3.9-miles to a 5-acre gravel pad that would serve as an evacuation site on K-Hill (Figure 3). The proposed lagoon crossing for both route alternatives is the same.



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Legend

- Southern Route - 7.7 miles*
- Material Source Spur Road
- Winter Access via DMTS Port
- Contractor Staging Areas
- Potential Material Source Areas**
- Native Allotments
- Water Crossings

* Proposed Routes are centered within ~1000 ft corridor.

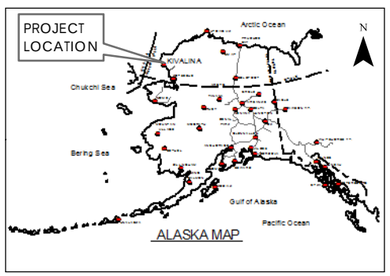
** Material sources would be developed within identified areas (See EA Section 3.1 Table 1)

0 0.5 1 Miles

1:75,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016



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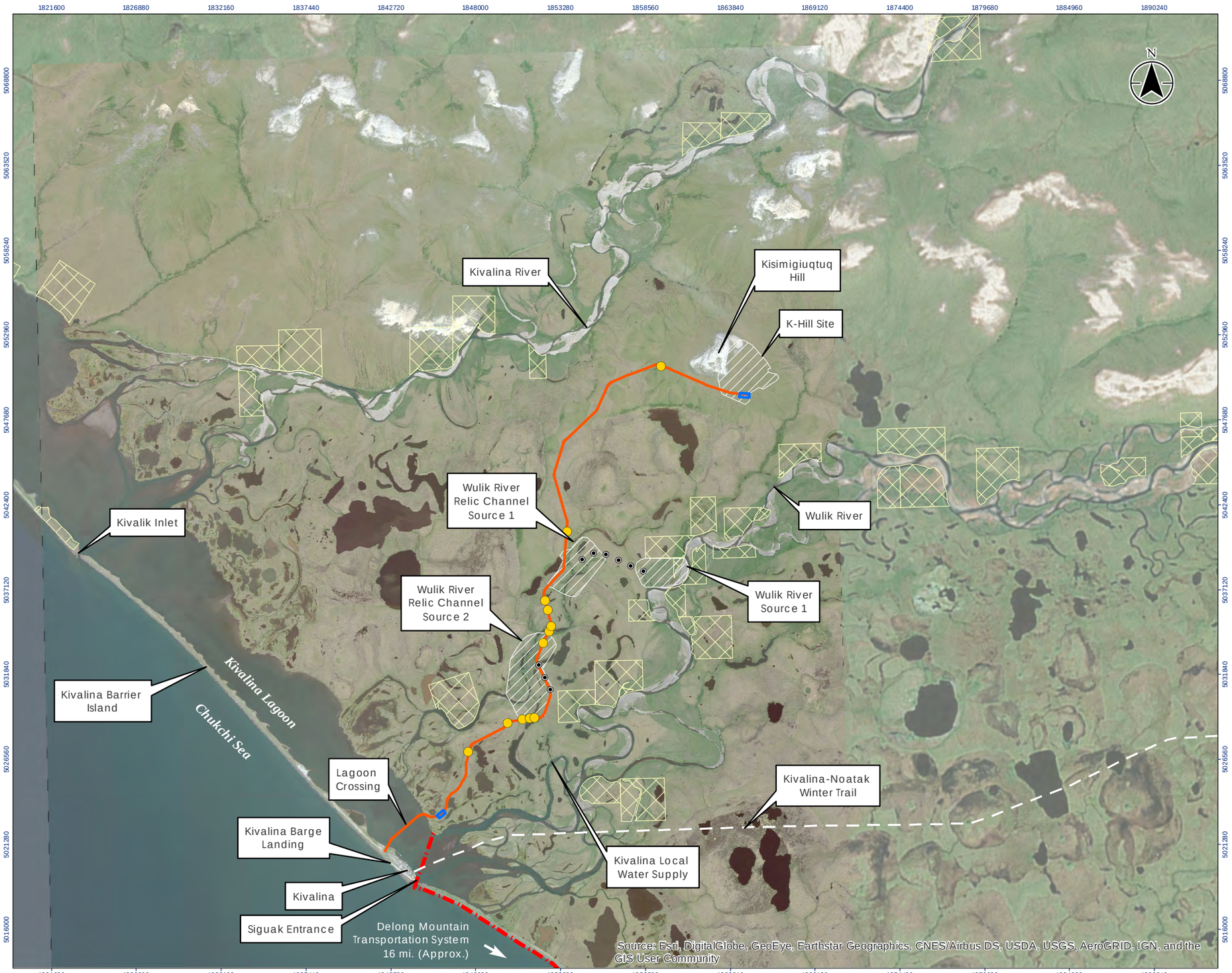
KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Southern Route Overview

DATE: September, 2017

FIGURE **2**



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Legend

- Combined Route B - 8.9 miles*
- Material Source Spur Road
- Winter Access via DMTS Port
- Contractor Staging Areas
- Potential Material Source Areas**
- Native Allotments
- Water Crossings

* Proposed Routes are centered within ~1000 ft corridor.

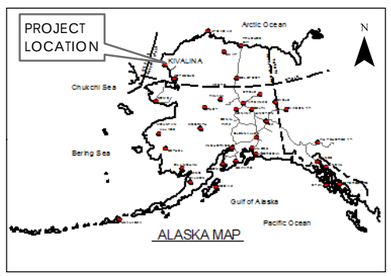
** Material sources would be developed within identified areas (See EA Section 3.1 Table 1).

0 0.5 1 Miles

1:75,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016



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KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Combined Route B Overview

DATE: September, 2017

FIGURE **3**

2.1.1 Lagoon Crossing

The 3200-ft lagoon crossing would require construction of an earthen causeway protected with a layer of armor stone, a bridge, and culverts. The top of the causeway would be at an elevation to accommodate the anticipated maximum potential storm surge and design wave for a 500-year recurrence event (Smith and Nielson, 2017; DOT&PF, 2017). The bridge would be constructed over the existing 110-ft wide lagoon channel, located approximately 160-ft northeast from the barrier island. The bridge would be a piling supported structure with sloped, rock protected earthen abutments or vertical sheet pile walls and be designed to span the entire lagoon channel width to minimize potential impact to natural channel dimensions and function. Large diameter culvert(s), located near the northeast end of the causeway, would accommodate passage of all life-stage fish and maintain flow within a discontinuous channel. Overflow pipes would be placed in even increments along the length of the causeway, at an elevation that would provide additional hydraulic conveyance during high water events to protect the evacuation road and the community from potential flooding.

2.1.2 Evacuation Road

The road would be constructed within a 300-ft right-of-way (ROW) and consist of a 24-ft wide gravel surfaced roadway with edge markers for improved visibility during winter use (Figure 4). The embankment would be constructed with a minimum of 3 (horizontal) to 1 (vertical) side slopes for safety, thermal stability, and to minimize snow drifting. The road would be surfaced with crushed aggregate and side slopes and all other disturbed areas would be seeded with regionally appropriate seed mix that minimizes introduction of noxious weeds. Roadway embankment height would average between 5 and 8-ft above existing ground. Greater embankment thickness would occur at natural grade depressions and over stream crossings. An average embankment thickness of 6-ft would minimize impacts from drifting snow and the thawing of permafrost in the Study Area.

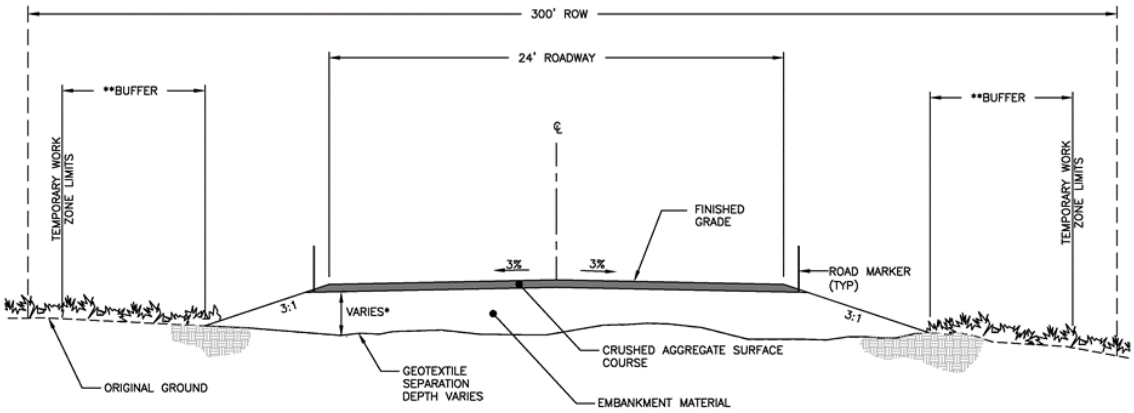


Figure 4 Typical Evacuation Road Cross Section

Culverts would be placed at appropriate locations along the roadway to accommodate cross drainage, with larger culverts placed along identified permanent and intermittent water

crossings (see Figure 5 for typical culvert details). Culverts may require outlet aprons with rip rap of various thicknesses in locations with significant flow. Insulation board may be used under culvert crossings and the roadway embankment in areas of degrading permafrost.

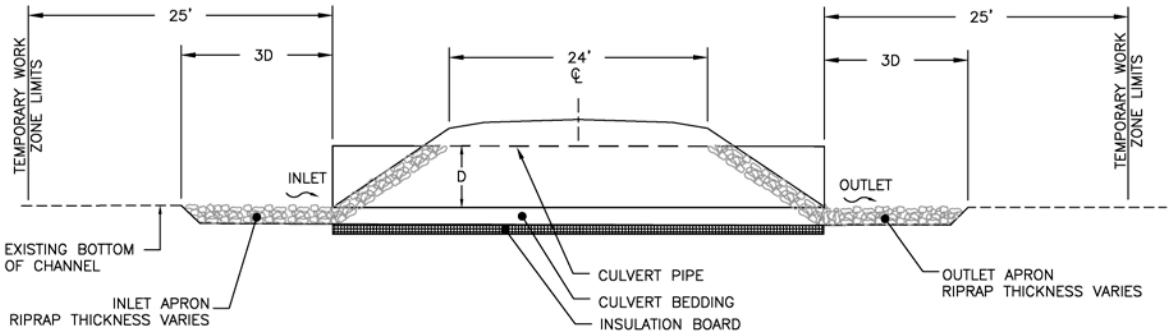


Figure 5 Typical Culvert Detail

Turnouts would be constructed along the road and would consist of a 25-ft wide by 200-ft long area adjacent to either side of the road to accommodate vehicle parking and equipment turnarounds. See Figure 6 for typical vehicle turnout plans.

2.1.3 Material Source

Based on reconnaissance field work and limited subsurface investigations, the following local material sources are expected to supply materials required to construct the proposed project: K-Hill Site, Wulik River Source 1, Relic Channel Source 1, and Relic Channel Source 2 (Figure 2). While all embankment materials are anticipated to be available locally, material may also be barged in from sources outside the Study Area and stockpiled for use. Methods and means used to develop project material sources would be determined by the selected construction contractor.

2.1.4 K-Hill Site

The K-Hill Site is situated adjacent the terminus of the route (Figure 2). K-Hill geology is characterized by exposed limestone and rock rubble at the ground surface. A 100-acre material source in this area would support materials extraction, staging, and a construction camp. This site is expected to produce up to ~1,000,000 cubic yards (CY) of select material suitable for use in the roadway embankment, crushable material for use as roadway surfacing, and rock for potential use as armor stone. Once reclaimed, the developed area could be utilized as a potential evacuation site for the community.

2.1.5 Wulik River Source 1

Wulik River Source 1 is located on a point bar along the west bank of the Wulik River (Figure 2). The source consists of unvegetated and vegetated gravel bars in the floodplain and wetlands outside of the floodplain. A 40-acre material source in this area is expected to produce up to ~240,000 CY of well graded alluvial gravels, suitable for use in the roadway embankment, and roadway surfacing.

2.1.6 Wulik Relic Channel Sources 1 and 2

Wulik Relic Channel Sources 1 and 2 are located within wetlands associated with the relic channels of the Wulik River (Figure 2). Relic Channel Source 1 is a 50-acre material source expected to produce up to ~250,000 CY of gravel and sand deposits, suitable for use in roadway embankment and possibly as crushable material for roadway surfacing. Relic Channel Source 2 is a 40-acrea material source expected to produce ~200,000 CY of gravel and sand deposits, suitable for use in the roadway embankment and possibly as crushable material for roadway surfacing in limited quantities.

3.0 POTENTIAL CONSTRUCTION METHODS

Potential construction methodology may vary depending on timing of construction, contractor specific methods, locations of staging areas, camps, haul routes, and sequencing of activities. This section describes typical construction methods that may be employed for the preferred alternative.

3.1 CONTRACTOR STAGING AND HAUL ROAD DEVELOPMENT

Large equipment and bulk supplies necessary for construction may be flown or barged to the region. Initial mobilization activities may require temporary storage of equipment and fuel in the community of Kivalina or at the DeLong Mountain Transportation System port site (Red Dog Mine). Once sea ice is formed and ground is frozen, equipment could be moved to Kivalina on an ice road (if at the port site) and then inland for development of material sources and construction of roadway embankments.

Construction may require two or more work seasons. In addition to available space near the Kivalina Airport, two staging areas may be constructed, including one on the northeast side of the lagoon for the storage of fuel, equipment and embankment material, and another at the K-Hill Site for a temporary construction camp, material and equipment staging area, and a rock quarry (Figure 2).

3.2 LAGOON CROSSING

Construction of the lagoon crossing may include in-water placement of fill, bridge support pile driving, and placement of culvert(s). Placement of fill is generally done during ice-free conditions, but several construction components associated with the lagoon crossing could be completed in the winter. Grounded ice in shallow depths of the lagoon could be removed allowing placement of the base causeway embankment layer and rock protection with no, or minimal water present, thereby minimizing disturbance of fine sediments. Pile driving would take place on both sides of the bridge opening, and consist of driving piles at each abutment. The final design of the bridge foundation would establish the specific number, size, and depth of the piling.

For evaluating potential impacts, the following assumptions are made:

- Four piles per abutment for a total of eight piles would be required to construct the single span bridge.
- Piles would typically be 3-ft diameter steel pipes, driven roughly 100 to 150-ft deep or to refusal. Each abutment would require roughly 3-5 days to construct.
- Pile driving would occur over approximately 30 days, not continuous, in which the shift duration would be guided by agency recommendations. The contractor's methods could potentially alter the frequency and duration.

Both winter and summer construction activities are anticipated. Pile driving windows and durations would be established to minimize hydraulic and noise impacts when fish, birds, and marine mammals are more abundant. The bridge work would likely utilize cranes and other equipment working from the new causeway fill, or in combination with a temporary work trestle dependent on the contractor's methods. The use of a work trestle would likely require installation of several shallow support pilings.

Best Management Practices (BMPs) to minimize water quality and habitat impacts would be developed and implemented.

3.3 EVACUATION ROAD

For evaluating potential impacts, the following assumptions are made:

- Arctic road construction in areas dominated by tundra underlain with continuous permafrost would begin in the winter after the ground freezes.
- Road and drainage structure construction would continue during summer months and may require temporary bridges and culverts to provide for seasonal drainage.
- A leveling course of gravel may be required under geotextile depending on local ground conditions.
- Vegetative clearing would be limited to brush removal within the roadway footprint, however the existing organic mat would not be removed.

- Temporary construction impacts may occur within a 25-ft area outside the roadway embankment footprint, and would be permitted for use for contractor equipment access, culvert installation, and placement of sediment control (BMPs).
- Water crossings would include placement of appropriately sized drainage structures, with additional cross culverts installed along the roadway as needed to equalize drainage.
- Excavation would be avoided to minimize thermal degradation of subgrade permafrost.
- Installation of larger culverts needing bedding materials for fish passage or for maintaining stream flow would require diverting flow into a temporary channel while constructing the structure.
- The use of temporary bridges, temporary culverts, and pumping may also be employed.
- Disturbed areas outside the roadway footprint would be stabilized.
- The roads would be watered for dust control.

Both winter and summer construction activities are anticipated. Construction windows and durations would be established to minimize impacts when fish, birds and wildlife are more abundant.

3.4 MATERIAL SOURCE DEVELOPMENT

While all embankment materials are anticipated to be available locally, material may also be barged in from sources outside the Study Area and stockpiled for use. Methods and means used to develop project material sources would be determined by the selected construction contractor.

For evaluating potential impacts, the following overall assumptions are made:

- Access to and development of selected material sources may occur year-round.
- Extracted materials not hauled and placed may be stockpiled within a material source or laydown area for later use.
- Construction windows and durations would be established to minimize impacts when fish, birds and wildlife are more abundant.

3.4.1 K-Hill Site

The following assumptions outline the material source development methodology for the K-Hill Site:

- A quarry site on K-Hill would be likely accessed when the ground is frozen and equipment can travel overland.
- The site would be developed by removing overburden and temporarily stockpiling for reclamation activities.
- Materials from the site are expected to be used for constructing staging areas and roadway embankments.
- Ripping, drilling, and blasting would likely be used to remove overburden as well as to produce select material and armor rock from subsurface deposits.
- Quarry excavation would be benched to maintain slope stability, drainage, and access for development and reclamation activities.

3.4.2 Wulik River Source 1

The following assumptions outline the material source development methodology for the Wulik River Source 1:

- A material source would be developed along the west bank of the Wulik River when ground is frozen and water levels are relatively low.
- Excavation may occur below the water table, however a 100-ft buffer would be maintained between the active river channel and the excavation area.
- Source development would require excavation of overburden that may be used for reclamation. Material would be extracted, hauled, and placed using conventional equipment, though blasting may be necessary if permafrost is encountered.
- Material source reclamation would include converting the source into a pond. A fish escapement channel may be connected to the Wulik River to prevent trapping fish.
- A 2,000-ft long spur road would be used to access this source.

3.4.3 Wulik Relic Channel Sources 1 and 2

The following assumptions outline the material source development methodology for the Wulik Relic Channel Source 1 and 2:

- Material sources adjacent to the relic channels of the Wulik River would be developed as a series of deep cells extending below the water table.
- Blasting would likely be required depending on the presence of permafrost, moisture content and types of materials encountered.
- Wulik Relic Channel Sources 1 and 2 would likely require development of a 2,000-ft and 3,000-ft spur roads respectively.
- Sources would be reclaimed by excavating ponds, connected to existing relic channels, that could provide potential overwintering habitat for juvenile fish.

4.0 ESSENTIAL FISH HABITAT

The 1996 Sustainable Fisheries Act reauthorized the MSA (Magnuson-Stevens Act; 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 project falls within the following Fisheries Management Plans (FMPs):

- Salmon Fisheries in the EEZ off the Coast of Alaska (Salmon FMP);

- Arctic Management Area (Arctic FMP);

The Salmon FMP has designated all waters offshore of 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, 2016) as important for Pacific salmon, as EFH. All EFH for Pacific salmon within the Study Area is based on Level 1 distribution information. The Arctic FMP designated EFH for Arctic cod (*Boreogadus saida*), saffron cod (*Eleginus gracilis*), and opilio (or snow crab, *Chionoecetes opilio*). EFH for Arctic and saffron cod is based on Level 1 distribution information. EFH for crab (e.g. Snow crab [*Chionoecetes opilio*]) is located on the marine side of Kivalina, but habitat inside Kivalina Lagoon is expected to be marginal (NMFS, 2017).

Table 1 describes EFH and the species and life-stage supported within the lower Wulik River and the Kivalina Lagoon. EFH habitat is identified on Figure 6.

Table 1 Water Bodies in the Study Area with Essential Fish Habitat

Water Body Anadromous Waters Catalog No.	Essential Fish Habitat Species								
	Opilio Crab	Arctic Cod	Saffron Cod	Chinook Salmon	Chum Salmon	Coho Salmon	Pink Salmon	Sockeye Salmon	Dolly Varden*
Wulik River 331-00-10060	-	-	-	M	M, S	M	M, S	M	M, S
Kivalina Lagoon 331-00-10060-0010	-	O, R	O, R	R	R	R	R	R	R

Notes:

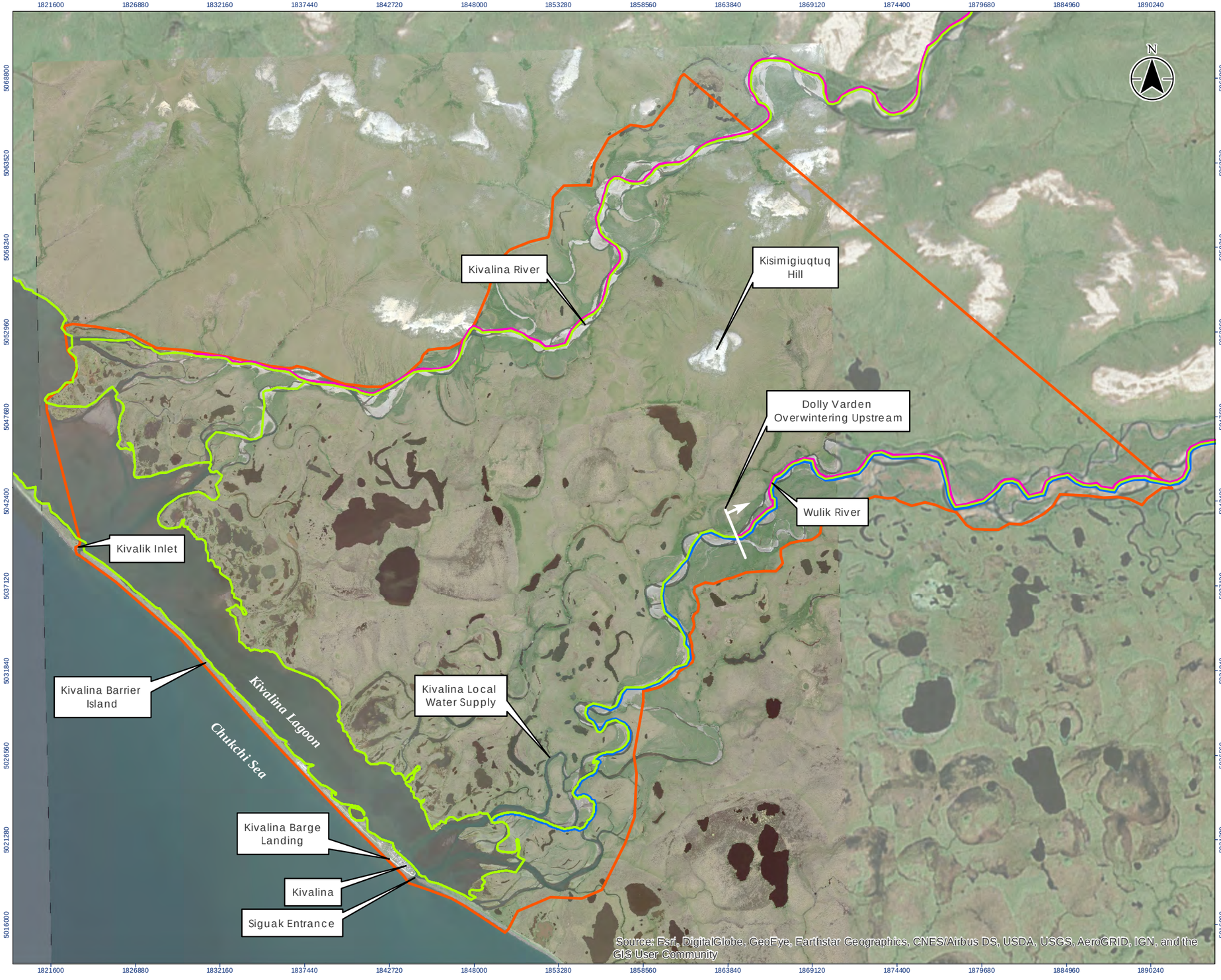
R: documented rearing; S: documented spawning; M: documented migration through the Study Area; O: documented overwintering (ADF&G 2016, USACE, 2007a)

"-": Not present

* Dolly Varden are not listed as an EFH species; however, due to their sustenance importance to the residents of Kivalina have been included in this EFHA

4.1 WULIK RIVER AND RIVER ESTUARY

The Wulik River drains southwest approximately 80 miles from the De Long Mountains to Kivalina Lagoon in the Chukchi Sea. In the lower sections of the Wulik River and within the Study Area, the river is defined by a low gradient (1-2%) meandering glide. Streambed substrate ranges from fines to cobbles and is dominated by small to large gravel. Frequent large gravel bars occur along inside bends of the river with outside bends being characterized by peat cut banks with limited willow growth. Riparian habitat is generally limited. Pools, side channels and embayment's provide rearing potential for juvenile fish and no barriers to fish migration are present. General site photographs of the Wulik River, specifically near the Wulik River Source 1 material site, are provided in Appendix B.



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Legend

- Study Area
- Pacific Salmon Present*
- Pink Salmon Spawning
- Chum Salmon Spawning

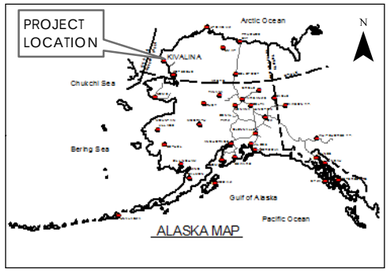
*Arctic cod and saffron cod are present in the Kivalina Lagoon year round.

0 0.5 1 Miles

1:75,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
3. Essential Fish Habitat Data shown was produced using 2017 Regulatory Mapping Data from the Anadromous Waters Catalog (AWC), acquired from ADF&G website.



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KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Essential Fish Habitat within the Study Area

DATE: September, 2017

FIGURE **6**

The Wulik River supports several EFH species including chum salmon (*Oncorhynchus keta*), Chinook salmon (*O. tshawytscha*), sockeye salmon (*O. nerka*), coho salmon (*O. kisutch*), and pink salmon (*O. gorbuscha*) (ADF&G, 2016). Although Dolly Varden (*Salvelinus malma*) are not listed as an EFH species, they are a main source of subsistence for people of Kivalina, contributing 86% edible weight of all harvested species (ADF&G, 2010). As such, they have been included in this EFHA.

Aerial surveys conducted by the ADF&G along the Wulik River and Ikalukrok Creek (an upstream tributary to the Wulik River located 37 miles upstream of the Kivalina Lagoon) have most consistently identified runs of chum and pink salmon and Dolly Varden, with other salmon species identified in lower numbers and less consistently (Scannell and Ott, 2002). Chum salmon have been observed spawning in the lower portion of Ikalukrok Creek annually since the late 1980s in late July and August (Scannell and Ott, 2002). Since 2006, annual return estimates for chum salmon in lower Ikalukrok Creek have ranged from around 1,000 to 7,000 salmon. Chum salmon spawning has been documented approximately 5 miles upstream from the Kivalina Lagoon in the Wulik River (ADF&G, 2016). The Wulik River also supports a run of pink salmon. Although no direct estimates of returns are available, pink salmon have been observed spawning approximately 5 miles upstream of the Kivalina Lagoon in the Wulik River near the proposed Wulik River Source 1 material site (Figure 2).

Dolly Varden juveniles emerge in the spring after summer/fall spawning in the Wulik River (Ott and Morris, 2007), and spend between one and five years in the Wulik River drainage before migrating to the Chukchi Sea shortly after spring break-up. Most adult Dolly Varden migrate out of the Wulik River in spring after peak break-up flows recede and as water clarity begins to improve. Adults typically re-enter the lagoon in later summer (USACE, 2007), with spawning condition fish entering earlier in the summer than fish migrating to the Wulik to overwinter. Annual surveys conducted between 1979 and 2015 as part of ongoing monitoring for the nearby Red Dog Mine, estimated between 22,000 and 144,000 mixed stock Dolly Varden in the Wulik River in each year (Ott et al., 2016). In most years, greater than 90% of Dolly Varden overwintered downstream from Ikalukrok Creek to approximately 5 miles upstream from the Kavalina Lagoon, in the vicinity of the Wulik River Source 1 material site, while the remaining fish enumerated in the river have been found upstream of Ikalukrok Creek (Ott and Morris, 2012).

The Wulik River estuary (confluence of the Wulik River with the Kivalina Lagoon) is located immediately east of Kivalina. The estuary is characterized by a series of small, low gradient tributary channels across the Wulik River floodplain. A number of relic channels to the Wulik River and isolated lake/pond features are also located in the estuary (northwest of the river confluence). The relic channels have lost connectivity to the mainstem of the Wulik River and their headwaters originate near the base of K-Hill. The Relic Channels are directly connected to the Kivalina Lagoon. Estuary habitat can be important habitat for outmigrating juvenile salmon, Dolly Varden, and numerous marine fishes and invertebrate species (McClelland, 2012). Fish bearing status of the various isolated lake/pond features is unknown; however, these features

including the relic channels to the Wulik River are not considered EFH and therefore, are not considered as part of the analysis in this EFHA.

4.2 KIVALINA LAGOON

Kivalina Lagoon is considered EFH for five species of Pacific salmon, saffron cod (*Eleginus gracillis*), and Arctic cod (*Arctogadus glacialus*) (USACE, 2007; NMFS, 2011). The lagoon provides essential rearing habitat for outmigratting juvenile salmon from the Wulik River. Prior to heading offshore and into the Chuckchi Sea, juvenile salmon remain with the nearshore habitats of the lagoon to rear and feed. Pink and chum salmon smolt move downstream into the lagoon during break-up between mid-May and early June. Residency time within the lagoon is unknown, but is likely limited to June. Chinook, coho and sockeye smolt likely move to the lagoon during the same period. Arctic cod (*Boreogadus saida*) and saffron cod (*Eleginus gracilis*) are present year-round (USACE, 2007a). Population estimates and peak timing of use of Arctic and saffron cod within the lagoon is currently unknown.

5.0 ANALYSIS OF EFFECTS TO ESSENTIAL FISH HABITAT

Potential interactions between the Proposed Action and EFH and EFH species are identified in Table 2. Where an interaction was identified, an analysis of effect to EFH and EFH species was conducted.

Table 2 Potential Interactions of the Proposed Action with EFH and EFH Species

Proposed Action	Proposed Project Activity	Potential Interaction with EFH and EFH Species	
		Lower Wulik River	Kivalina Lagoon
Kivalina Lagoon Crossing	Causeway fill placement	×	✓
	Pile driving	×	✓
	Changes to flow and sediment transport	×	✓
Evacuation Road	Water withdrawal	✓	×
	Ice road	×[1]	×
	Water crossings	×[2]	×
Material Source	Gravel mining	✓	×

NOTES

× = No interaction

✓ = Potential interaction

[1] Ice road construction will be required at select sites along the evacuation road route but will not interact with EFH associated with the Wulik River.

[2] Required stream crossings for both the Southern Route (a total of 9 crossings) and the Combined Route B (a total of 12 crossings) do not cross designated EFH.

As noted in Table 2, the Southern Route and Combined Route B do not cross designated EFH habitat. Where water crossings of non-EFH are proposed, most would be crossed using hydraulic design culverts oversized to accommodate flood events or incorporation of hydraulic designed culverts with additional overflow culverts installed in the floodplain. This design approach will maintain water body and road integrity and allow for fish passage. Combined Route B crosses the relic channel, which may contain coho and sockeye salmon. That crossing would be designed as a fish passage culvert which would maintain water body geomorphology and fish passage.

5.1 EVACUATION ROUTE AND LAGOON CROSSING

5.1.1 Lagoon Crossing

Construction of the Kivalina Lagoon crossing would have direct and indirect effects on EFH and EFH species. Direct effects would be limited to the burial of approximately nine acres of benthic habitat during causeway fill placement and the potential for mortality and behavioral disturbance of some EFH species individuals from pile driving induced overpressures and noise in the water column during bridge abutment installation. Indirect effects would be associated with short-term increases in turbidity and suspended solids during fill placement.

5.1.1.1 Causeway Fill Placement

Construction of the causeway would place fill, consisting primarily of large angular aggregate, in approximately nine acres of EFH; about 0.02% of Kivalina Lagoon. While approximately nine acres of soft sediment habitat would be directly removed, it is anticipated that the coarse angular rock fill would increase habitat complexity in the lagoon and provide additional habitat for rearing juvenile salmon (and non-EFH forage species) within the three-dimensional prism of the causeway. Sessile invertebrates could use coarse aggregate habitat for attachment and feeding, while EFH fish species could use it for feeding and cover (Reynolds et al, 2010). Direct burial and mortality of EFH species (as identified in Table 1) is unlikely during aggregate placement as juvenile salmon, saffron cod, and Arctic cod would likely avoid the area due to increased noise and turbidity conditions associated with construction. Additionally, aggregate placement is scheduled to avoid peak outmigration and usage of the lagoon by rearing juvenile salmon.

Placement of fill would cause short term increases in turbidity and suspended solids but increases would be limited to the period of construction. Winter fill placement, while much of the lagoon is frozen to the bed, would avoid most affects to EFH and EFH species. Overall, causeway fill is anticipated to have minimal adverse effects to EFH and EFH species and would be limited to localized avoidance.

5.1.1.2 Pile Driving

Pile driving would be used to install either sheetpile abutment walls or abutment support piles. It is possible that pile driving would occur in winter or summer months and is anticipated to last for approximately 30 days, not continuous, regardless of season. Both vibratory and impact hammers could be used during installation.

The proposed location of the causeway could be in the migration route of adult Pacific salmon returning from the sea and heading for spawning areas in the Wulik and Kivalina Rivers. If fish are in the immediate pile driving area as pile driving commences, direct mortality is possible; however, Mueller-Blenkle et al. (2010) found that Atlantic cod detect noise generated from pile driving at great distances and demonstrated an avoidance response. Salmon or cod may demonstrate similar avoidance responses. Outmigrating juvenile salmon will be passing through the lagoon primarily from mid-May to late June, while returning adult salmon are generally present there between early July and late September. Arctic cod and saffron cod can be present year-round; however, likely in considerably lower numbers during winter months.

In 2015, the Fisheries Hydroacoustic Working Group (FHWG), composed of several state and federal agencies, including NMFS, the Federal Highway Administration, and State highway agencies for California, Oregon, and Washington, completed a technical guidance for assessment and mitigation of the hydroacoustic effects of pile driving on fish (FHWG 2015). The report lays out agreed upon criteria for use during all pile driving projects, that have been identified as a peak sound pressure level of 206 dB and an accumulated sound exposure level (SEL) of 187 dB for all fish weighing 2 grams or larger. For fish less than 2 grams, the criterion for accumulated SEL is 183 dB (FHWG 2015). If the ADF&G determines that pile driving will occur in a location and during a timeframe that significant impacts to EFH species could occur, a noise monitoring and mitigation plan would be required to help mitigate the potential exposure to harmful noise levels as set forth by the working group. Possible mitigation methods may include bubble curtains or physical isolation of the work area from surrounding freewater via artificial freezedown of the work area. Impacts to fish from pile-driving activities during bridge should be minimized if these criteria are followed. Winter installation would avoid the period of highest fish use and would thereby reduce potential affects to EFH species.

5.1.1.3 Changes to Water Quality, Currents and Sediment Transport

Impacts on water quality in the lagoon would primarily be associated with construction-related sediment releases during causeway fill and armor stone placement. Localized effects of sediment-laden runoff following construction are anticipated to be temporary and of short duration with the implementation of BMPs. Other potential impacts to water quality would be associated with accidental spills or leaks from vehicles or heavy equipment during either construction or subsequent use of the evacuation route.

River currents are assumed to pass directly from the river deltas through river channels in lagoon sediment and the inlets into the Chukchi Sea (USACE, 2016). Recent surveys and photography

have observed that the Kivalina and Wulik River sediments simply pass through the lagoon and are deposited on the outer shoreline (DOT&PF, 2017). With river water outflow into the lagoon and Chukchi Sea not anticipated to be impacted by the proposed project, sediment transport would also not be impacted, allowing for this accretion of the barrier island on the outer beach to continue and maintain this natural erosion buffering dynamic. As such, there is typically little to no current and sediment transport inside the lagoon except during large surge events (DOT&PF, 2017). A bridge would span the approximately 110-ft wide channel that runs parallel on the inside of the barrier island and is mostly the result of scour during the ebb portion of the surge, thus maintaining that dynamic and allowing for fish passage. Culvert(s) will be placed across the northeast end of the causeway allowing for additional fish passage, with evenly spaced overflow pipes placed along the length of the causeway ensuring maintenance of any low-level energy flow and sediment transport regime in the lagoon. Whereas current speeds may increase through the culverts and under the bridge during storm events, such impacts would be temporary and not measurably affect EFH or EFH species.

5.1.2 Evacuation Route

EFH has not been identified along either the Southern Route or Combined Route B (Figure 2 and Figure 3). As such, direct effects associated with construction and operation of the evacuation route would be limited to water withdrawal associated with summer dust control (assuming water from the Wulik River is used as a source) and ice road construction to support winter activities (Table 2).

5.1.2.1 Water Withdrawal

Water availability during winter will be limited, and the most likely source will be the Wulik River. Screened intake and volume withdrawal criteria will be needed to ensure potential effects to EFH species are mitigated. Volume limitations and use of ADF&G compliant screened intakes would reduce the potential for adverse effects.

During road construction, water withdrawals would be required to create temporary ice/snow roads, dust control and to support road compaction. Water to support these activities would likely be sourced from surface waterbodies along the final selected route alignment. Water withdrawal activities can affect EFH species 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. Water withdrawal during winter can lead to water levels that reduce habitat quality including inadequate volume to resist freezing and inadequate volume to retain high enough dissolved oxygen concentration for survival of fish. Winter withdrawal could lead to reduced flows in small streams and could affect spawning beds and fish eggs within the gravel as well as impede fish passage to and between important overwintering habitats. Fish overwintering areas can exist as isolated pools or stream reaches that would be highly sensitive to water removal. Summer season withdrawal can also have similar affects to fish and fish habitat if volume removal is too high. Reductions in water levels and flows can increase water temperatures to beyond the thermal tolerances of some fish species, but could also increase

productivity for juveniles of others. Any withdrawal that leads to discontinuous surface flows could trap fish. During winter, effects of water withdrawal could persist for the entire winter construction season. Summer withdrawals would have less potential for adverse effects on fish and fish habitat but excessive withdrawal could still lead to minor short-term impacts depending on the timing of the withdrawal.

5.2 MATERIAL SOURCE DEVELOPMENT

A total of four material sources are proposed. Of these, interaction with EFH is limited to the Wulik River Source 1 site (Section 2.2.2; Figure 2; photographs in Appendix B). The Wulik River Source 1 source would be developed along the west bank of the Wulik River when the ground is frozen and could affect EFH and EFH species.

Material extraction sites studied in arctic and subarctic floodplains in Alaska have demonstrated both adverse and beneficial effects on fish and fish habitats depending on the type and size of the river, type of material extraction employed, and the amount of material extracted (Joyce et al. 1980a, Ott et al 2014). Material source development can lead to destabilization of river channels, river channel capture, floodplain widening, increased erosion and sedimentation, increased water velocities, reduced water quality, can lead to aquatic habitat shifts, and in some instances, has been documented to cause surface flows into the gravels creating a barrier to fish passage (Joyce et al 1980a). On the other hand, local fish populations have benefited from gravel mine sites in some locations through the creation of overwintering and productive feeding habitats (Ott et al. 2014). Ott et al. 2014 also found that several gravel mine sites, most constructed as pits, were eventually connected to nearby drainages on Alaska's North Slope, and successfully used for overwintering. Gravel extraction sites in that study provided a habitat that is limited in the Arctic and thus functioned as viable habitat creation.

Blasting at material sources may be required to develop adequate source rock (Kolden and Aimone-Martin, 2013). Blasting has the potential to impact fish from substrate vibration and water overpressure (Kolden and Aimone-Martin, 2013). These can disrupt embryo development, and lead to trauma to adult fish (Kolden and Aimone-Martin, 2013). Kolden and Aimone-Martin (2013) found that current ADF&G (1991) blasting standards appear to sufficiently protect salmonid embryos, juveniles, and adults. Blasting at individual material sources would require site specific mitigation measures to comply with ADF&G guidelines and prevent impacts to fishery resources.

Access to and development of material sources near the Wulik River and its relic channels would likely occur, at least in part, during the winter months when the ground is frozen. Upon completion of the proposed project, material sources would be reclaimed as per permit requirements.

Development of the Wulik River Source 1 could affect EFH and EFH species as described above. The site is located adjacent to the downstream most extent of Dolly Varden overwintering and chum salmon spawning, and pink salmon spawning habitat. Coordination with ADF&G and

NMFS would be conducted during design to develop an adequately sized material site at the selected location, maintain adequate setbacks from the river, and avoid channel capture and destabilization. In addition, the extent of saline intrusion up-river in the Wulik may be needed to check that connecting this site to the river would not produce a saline lake, thereby reducing any potential benefits to EFH and resident fish species. Additional analysis of the Wulik River Material source may be required prior to development to determine if these issues can be addressed through adherence to the guidelines presented in the documents referenced above and permit conditions.

6.0 AVOIDANCE AND MINIMIZATION

Avoidance and mitigation measures to protect fish and fish habitat are outlined in the Kivalina Evacuation and School Site Access Road Draft Environmental Assessment (DOT&PF, 2017). For consistency, avoidance and minimization measures identified in the Environmental Assessment that are specific to protection of EFH and EFH species are summarized below.

Kivalina Lagoon Crossing:

- In-water work associated with the lagoon crossing would be scheduled to reduce impacts to fish.
- Implementation of BMPs that avoid or minimize adverse impacts to water quality and marine habitats.
- Conduct pile driving during periods that limit impacts to salmon juveniles and adults (NMFS, 2017a). If not possible, other options include:
  - Conduct operations at low tide;
  - Use vibratory hammer, or if an impact hammer is required, use a vibratory hammer to the maximum depth possible; or
  - Use the smallest hammer practicable.

Evacuation Road:

- During construction, occurring concurrent with critical timing windows, appropriate measures would be implemented (e.g., construction of a diversion channel) to maintain fish migration and passage.
- DOT&PF and the construction contractor would coordinate with ADF&G to identify and implement appropriate migration measures.

Material Sources:

- Material source selection and site specific mining plan design and reclamation would reduce the potential for adverse impacts and could enhance fish habitats in some drainages, such as the Wulik Relic Channel.

7.0 CONCLUSIONS

Development of the proposed Kivalina Evacuation and School Site Access Road Project will interact with EFH and EFH species; however, as summarized in Table 3, none of the proposed actions are expected to rise to population level effects. As such, the proposed project is **Unlikely to Adversely Affect/Adverse Effects Minimal** to EFH and EFH species.

Table 3 Proposed Project Component Effects Determination Summary and Rational

Proposed Action Component	Effects Determination	Rational
Kivalina Lagoon Crossing	Unlikely to Adversely Affect/Adverse Effects Minimal	Direct effects to EFH include the burial of 9 acres of habitat, or 0.02% of available lagoon habitat, and potential mortality of EFH species during aggregate placement. The addition of coarse angular aggregate will increase habitat complexity and utility for several species including Pacific salmon. Additionally, mortality of EFH species is anticipated to be low based on avoidance tendencies and proposed timing of construction. Population level effects are not anticipated.
Evacuation Road	No Adverse Effects	The primary potential to adversely affect EFH would be from winter water withdrawal from the Wulik River. Screened intakes and winter withdrawal volume limitations required in State of Alaska permits authorizing the withdrawal would minimize the potential for adverse effects to EFH and EFH species in the Wulik River. Crossings of the Wulik Relic channel, though not identified as EFH, would be constructed to pass fish and maintain water body integrity, as required. No population level effects are anticipated for any EFH species using the Wulik River.
Material Sources	May Adversely Affect/Adverse Effects Minor to Moderate	Only Wulik River Source 1 is located within EFH and could have adverse effects on EFH or EFH species. The point bar at this location is dynamic with multiple active highwater channels present. The site would be sized and placed adequately distant from the active channel to reduce the potential for river capture. While river capture would be unlikely, if it were to occur, downstream geomorphic responses to the change in river course could last until a new stable condition is attained. Some pink salmon spawning habitat could be affected. Despite the potential adverse effects associated with river capture, no population level effects to pink salmon are expected.

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Appendix A SITE PHOTOGRAPHS

Client:	**Department of Transportation and Public Facilities, Northern Region**	**Project:**	**Kivalina Evacuation and School Site Access Road**
Site Name:	**Wulik River and Relic Channel**	**Site Location:**	**Kivalina**

Photograph ID: 1 **Photo Location:** Wulik River **Direction:** Upstream **Survey Date:** 8/15/2017 **Comments:** Wulik River Source 1 material site high water channel at the furthest inland margin	
Photograph ID: 2 **Photo Location:** Wulik Relic Channel **Direction:** Cross Channel **Survey Date:** 8/15/2017 **Comments:** Mouth of the Wulik River Relic Channel	

Client:	**Department of Transportation and Public Facilities, Northern Region**	**Project:**	**Kivalina Evacuation and School Site Access Road**
Site Name:	**Wulik River and Relic Channel**	**Site Location:**	**Kivalina**

Photograph ID: 3 **Photo Location:** Wulik River **Direction:** Downtream **Survey Date:** 8/15/2017 **Comments:** Wulik River Source 1 material site view downstream	
Photograph ID: 4 **Photo Location:** Wulik River **Direction:** Downstream **Survey Date:** 8/15/2017 **Comments:** Wulik River Source 1 material site looking downstream at high water channels	

Client:	**Department of Transportation and Public Facilities, Northern Region**	**Project:**	**Kivalina Evacuation and School Site Access Road**
Site Name:	**Wulik River and Relic Channel**	**Site Location:**	**Kivalina**

Photograph ID: 5 **Photo Location:** Wulik Relic Channel **Direction:** Upstream **Survey Date:** 8/15/2017 **Comments:** Wulik Relic Channel material site area	
Photograph ID: 6 **Photo Location:** Wulik Relic Channel **Direction:** Cross Channel **Survey Date:** 8/15/2017 **Comments:** Wulik Relic Channel material site area	

Client:	**Department of Transportation and Public Facilities, Northern Region**	**Project:**	**Kivalina Evacuation and School Site Access Road**
Site Name:	**Wulik River and Relic Channel**	**Site Location:**	**Kivalina**

Photograph ID: 7

Photo Location:
Wulik Relic Channel

Direction:
Cross Channel

Survey Date:
8/15/2017

Comments:
Wulik Relic Channel material site area

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

December 14, 2017

Jonathan Hutchinson, P.E., Engineering Manager
Alaska Department of Transportation and Public Facilities, Northern Region
2301 Peger Road
Fairbanks, Alaska 99709-5316

Re: Kivalina Evacuation Route Draft Environment Assessment and Essential Fish Habitat Assessment, AKSAS #NFHWY00162

Dear Mr. Hutchinson:

The National Marine Fisheries Service (NMFS) has reviewed the Kivalina Evacuation Route Draft Environmental Assessment (DEA) and Essential Fish Habitat (EFH) Assessment (Appendix I of DEA) issued on November 15, 2017. The Alaska Department of Transportation and Public Facilities (ADOT&PF) is proposing to construct an all-season road from the Community of Kivalina, Alaska, extending eight-miles northeast to an evacuation location on Kisimigiuqtuq Hill (K-Hill). While this project may receive Federal funding, it is led by ADOT&PF and they assumed the responsibilities for complying with Federal environmental laws under a Memorandum of Understanding with Federal Highway Administration. We are providing conservation recommendations based on our authorities under of the Essential Fish Habitat (EFH) provisions in Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

Essential Fish Habitat Assessment:
ADOT&PF's EFH Assessment identified EFH for Chinook, chum, coho, pink, and sockeye salmon migrate through or spawn in the Wulik River, which is EFH (Salmon Fishery Management Plan) and saffron cod and Arctic cod overwinter in the Kivalina Lagoon (Arctic Fishery Management Plan). Although early documents discussed effects to the Kivalina River, none of the alternatives presented in the DEA affect this waterbody.

The EFH Assessment concluded that the preferred project as a whole, including the identified avoidance and mitigation measures, is not likely to adversely affect EFH or that adverse effects to EFH would be minimal. However, the EFH Assessment identified that one of the four material sources may adversely affect EFH.

EFH Conservation Recommendations:
NMFS offers the following EFH Conservation Recommendations pursuant to section 305(b)(4)(A) of the MSA:
Material Sources: ADOT&PF identified four material sources. We agree with the EFH

Assessment that the Wulik River Source #1 could have an adverse effect on EFH. To avoid adverse effects to EFH, we recommend using the K-Hill material source because it has the least potential to affect EFH. Relic Wulik Channel Material Source #2 and Wulik Relic Channel Source #1 would also be acceptable sources because of their location on the northwest side of the new evacuation route where the Wulik River would be unlikely to flow. Our recommendation to avoid use of the Wulik River Materials Site #1 is based on the NMFS Gravel Extraction Guidelines (NMFS 2005). If the other three material sites become exhausted, we request that ADOT&PF consult with us on best management practices prior to allowing the contractor to extract material from the Wulik River Source #1.

Kivalina Lagoon Crossing: We agree with ADOT&PF's determination that the crossing would not likely adversely affect EFH. The 110-foot single span bridge is critical to maintaining existing water circulation patterns in the Kivalina Lagoon as it spans a deep, stable channel. If the channel is obstructed, large sections of the lagoon might convert into swampy lowlands and no longer provide EFH for Arctic cod and saffron cod.

The northeastern fish passage structure in the causeway is described as twin culverts of unspecified diameter and length; this description lacks sufficient detail to evaluate its effects to EFH. NMFS recommends that the northeast fish passage structure be designed such that it is easily maintained on an annual basis. If this fish passage structure is not maintained as an open water passage, the causeway will likely create an area of stagnant water leading to material accumulating and resulting in additional loss of EFH. Long-term maintenance is often facilitated by designing an opening large enough to fit a small piece of earth moving equipment.

Section 305(b)(4)(B) of the MSA requires the Federal action agency to provide NMFS with a detailed written response to these EFH Conservation Recommendations. If your response is inconsistent with our recommendations, please explain the reasons for not following our recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects (50 CFR 600.920(j)).

ADOT&PF is consulting with NMFS on the effects of this project on species listed under the Endangered Species Act. The DEA and the request for consultation letter (Appendix G) does not contain sufficient project detail for NMFS to provide an Endangered Species Act determination. Please continue your communication with Bonnie Easley-Appleyard at (907) 271-5172, bonnie.easley-appleyard@noaa.gov on this subject.

We appreciate the early and frequent communication with ADOT&PF. If you have any questions regarding our EFH Conservation Recommendations, please contact Sean Eagan at (907) 586-7345, sean.eagan@noaa.gov or Samantha Simpson at (907) 271-1301, samantha.simpson@noaa.gov.

Sincerely,

for James W. Balsiger, Ph.D.
Administrator, Alaska Region

Cc: Jonathan Hutchinson, ADOT&PF, jonathan.hutchinson@alaska.gov
Sara Lindberg, Stantec, sara.lindberg@stantec.com
Audra Brase, ADF&G, audra.brase@alaska.gov
Kaithryn Ott, USFWS, kaithryn_ott@fws.gov

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THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Transportation and Public Facilities

NORTHERN REGION
Design and Engineering Services
Preliminary Design and Environmental

2301 Peger Road
Fairbanks, AK 99709-5316
Main: 907-451-2237
TDD: 907-451-2363
FAX: 907-451-5126

December 20, 2017

James Balsiger
National Marine Fisheries Service
PO Box 21668
Juneau, Alaska 99802-1668

RE: Kivalina Evacuation Route Draft Environmental Assessment and Essential Fish Habitat Assessment, AKSAS #NFHWY00162

Dear Mr. Balsiger:

The Alaska Department of Transportation and Public Facilities (DOT&PF) has reviewed your conservation recommendations based on the authorities under the Essential Fish Habitat (EFH) provisions in Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). We agree with your EHF Conservation Recommendations, and are providing a detailed response below.

Material Sources: NMFS and the EFH Assessment has identified that development of the Wulik River Source #1 could have an adverse effect on EFH. We will follow your recommendation to prioritize use of the material sources on this project, with the K-Hill site and Relic Channel sources given highest priority, and the Wulik River Source used last, if needed, once the other sites have been exhausted of the needed material. We will coordinate with NMFS on best management practices to use when developing the site prior to allowing the contractor to extract material from the Wulik River Source #1.

Kivalina Lagoon Crossing: The northeastern fish passage structure design is still ongoing, as it must also provide important hydrological connectivity through the causeway. DOT&PF designs culverts to accommodate anticipated debris and icing mitigation to prevent flow blockage and these culverts will also be designed to be easily maintained as an open water passage at mean tide, thereby preventing proximate areas of stagnant water during tidal exchange.

We appreciate your recommendations during the consultation process. If you have any questions, please contact me at (907) 451-2238, brett.nelson@alaska.gov.

Sincerely,

Brett O Nelson

Brett Nelson
Northern Region Environmental Manager

cc:
Sean Eagan, NMFS
Samantha Simpson, NMFS
Jonathan Hutchinson, ADOT&PF
Audra Brase, ADF&G
Kaithryn Ott, USFWS

APPENDIX J

FIELD RECORD – LARGE MAMMAL USE OF STUDY AREA

Page

Record of Field Notes: Kivalina Evacuation Road

During multiple years of site investigations, the field crews have taken notes of incidental wildlife observations. These records are presented here as evidence of large mammal use of the area.

Bears

Potential bear excavations have been observed on multiple field trips along the south and east side of Kisimigiuqtuq Hill (K-Hill), one of which may have once been used as a denning site. A potential bear den was photographed during a site visit in 2016 and located again in 2017. Four other excavations were mapped in 2017. Photographs of three excavations were taken on the ground by crews in 2016 and 2017 (Table 1).

A comprehensive bear den survey of the Study Area has not been conducted. When observed, excavations and the potential den site did not appear to have been used recently; and all exhibited some weather-related erosion and/or appeared collapsed.

Individual brown bears have also been observed in the Study Area. In 2017, a sow and two cubs were observed traveling southwest of K-Hill, and another individual was observed on the west side of the Wulik River.

Figure 1: Excavations: The green dot is the potential bear den, and yellow dots are excavations identified in 2017.

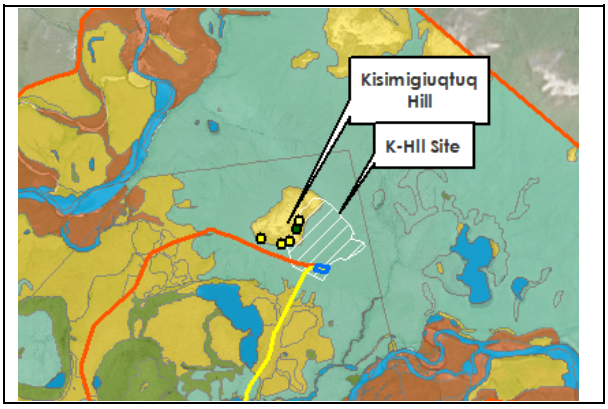


Table 1: Potential Bear Den and Photographs of Three Other Excavations

IMG_5358, 9/14/2016, Possible bear den. No fur or other animal indicators observed. Site does not appear to have been used recently	IMG_1699, 8/15/2017, Excavation. Located on K-Hill.
	
IMG_5363, 9/14/2016, Excavation.	IMG_1703, 8/17/2017, Excavation.
	

Caribou

Caribou sign (e.g. scat, antlers, bones, tracks) have been observed at multiple locations throughout the Study Area in September 2016 and August 2017 (Table 2). Caribou trails were observed around the north and east sides of K-Hill. In 2017, two caribou were observed east of K-Hill on the north side of the Wulik River.

Table 2: Caribou Sign

IMG_5340, 9/14/2016, Caribou antler on the ground near tower. NE side of K-Hill	IMG_5479, 9/15/2016, Caribou Skull, No GPS
	
IMG_5691, P34A, 9/16/2016, Caribou rack, 67.7764, -164.4432 WGS1984	
	

Muskoxen

Muskoxen occupy the Study Area, and were observed during aerial transit between field points in fall of 2016 and fall of 2017. To reduce disturbance, field crews avoid flying near individuals. As a result, documentation of locations has not been included in any field notes. In August 2017, one lone muskox was observed while boating up the Wulik River to the Wulik River Material Source 1.

Table 3: Muskoxen

IMG_5590, 9/15/2016, (4) Musk Ox spotted from air flying from P18 to P19 (Along Wulik River, east of K Hill)


APPENDIX K

SECTION 4(f) DE MINIMIS IMPACT FINDING FOR HISTORIC SITES

Page

Letters in Appendix F – Section 106 Consultation (to reduce duplication)

Section 4(f) *De Minimis* Impact Finding
for

Historic Sites

For NEPA Assignment Program Projects

Project Name: Kivalina Evacuation and School Site Access Road

Project Number (State and Federal): 0002384/NFHWY00162

AHRS Site Number and Site Name: Cape Krusenstern National Historic Landmark

Attachments:

- Copy of the finding letter that notified the SHPO of the intended *de minimis* impact finding and any concurrences received from the SHPO and ACHP (if participating)
- Copies of any consulting party correspondence
- Map showing the 4(f) property boundary in relation to the project area
- Other:

De minimis impacts related to historic sites are limited to the determination of either "no adverse effect" or "no historic properties affected" in compliance with Section 106 of the National Historic Preservation Act. Use a separate form for each site.

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by DOT&PF pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated November 3, 2017, and executed by FHWA and DOT&PF.

I. Project Description:

The Proposed Action would construct a safe, reliable, all-season evacuation road between the community of Kivalina and K-Hill. A range of route alternatives are being considered, but common to all are the following actions:

- **Establishment of a safe, reliable, all-season Kivalina Lagoon crossing**. All alternatives include construction of a causeway across the lagoon that variously incorporate different configurations of hydrological openings including bridge(s), culvert(s), or both;
- **Construction of an all-season access road connecting the Kivalina Lagoon crossing to the K-Hill evacuation site**. The road would be designed to accommodate a wide variety of motorized vehicles over a two-way road with shoulders, multiple turnouts, and side slopes that may include guardrail and other safety features (e.g. signage) where determined to be necessary and prudent; and
- **Development of up to four material sources** including the K-Hill Site, Wulik River Source 1, Relic Channel Source 1, and Relic Channel Source 2. These material sources are anticipated to be suitable local sources of select material to supply the project. Selection and development of viable material sources and haul routes are considered as part of the Proposed Action.

II. Section 4(f) Property Description:

Describe the historic site that is on or eligible for inclusion on the National Register of Historic Places (NRHP). Include type of historic property, the significance criteria and aspects of historic integrity that qualify the property to be eligible, and location of the historic site. Include a map depicting the boundaries and features of the Section 4(f) property in relation to the proposed project. For historic properties, the boundary should be identified during the Section 106 process.

The Proposed Action Study Area (Figure 1) is located entirely on either private lands or State of Alaska owned tidelands within the Cape Krusenstern National Historic Landmark (CKNHL; Figure 3). The CKNHL is a Section 4(f) property managed by the National Park Service (NPS) and is an archaeological district established in

1973 that encompasses a series of 114 marine beach ridges across 70 miles of Chukchi Sea shoreline, contains the cultural remains of peoples who inhabited the beaches for 5,000 or more years, and was established to preserve extensive archaeological resources in the area. The Proposed Action Study Area and relationship to the Section 4(f) property are illustrated on Figure 3.

In 2016, two cultural resources investigations were completed for potential evacuation route and material site alternatives. An archaeological predictive model was developed for the study area, and in the fall of 2016, Stantec conducted an archaeological reconnaissance and assessment of a preliminary study area for this project to contribute to the completion of a draft environmental assessment. The field investigation included pedestrian survey and subsurface testing, including a total of 39 soil probes, 75 shovel test pits, and 5 test units. No archaeological sites or historic properties were identified within the potential evacuation route alignments or material site alternatives that were defined at the time of the investigations.

In August 2017 DOT&PF officially initiated consultation with local, state, and federal consulting parties including the Alaska State Historic Preservation Office (SHPO) and NPS to ensure compliance with the requirements of the National Historic Preservation Act and its implementing regulations. The Area of Potential Effects defined by DOT&PF included additional areas that were not previously assessed during the 2016 predictive modeling or field investigations. A supplemental archaeological resources assessment was conducted by Stantec in August 2017 to address data gaps identified by DOT&PF in coordination with SHPO and NPS. No archaeological or historical resources were identified during pedestrian survey and subsurface testing along the revised alternative route, or within any of the expanded potential material source locations.

III. Project Use of the Section 4(f) Property:
Describe all impacts the project will have on the historic site.

Cape Krusenstern National Historic Landmark: Proposed project alternatives would permanently incorporate a minor portion of the CKNHL (approximately 400 acres of the CKNHL expanse of 500,000 acres), a Section 4(f) property, into a transportation facility; therefore, Section 4(f) of the Department of Transportation Act would apply under criteria 23 CFR 774.17(1).

Pursuant to 36 CFR 800.5(d)(2), implementing regulations of Section 106 of the National Historic Preservation Act, DOT&PF has found, and the NPS and SHPO concurred (on October 6 and 9, 2017, 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 SHPO and NPS has been obtained in writing, the proposed project alternatives appear to meet a de minimis (23 CFR 774.17) use.

Alaska Maritime National Wildlife Refuge: None of the proposed alternatives would include development within the Alaska Maritime National Wildlife Refuge (Refuge), a Section 4(f) property. The closest proposed project alternative would be 0.4 mile from the Refuge which would include construction of a new 24 ft wide road, separated by land and sea. Proposed project alternatives are not anticipated to result in noise or vibration impacts to the Refuge as construction work would be temporary and the community of Kivalina is about the same distance from the Refuge with existing noise generated from vehicular and aircraft traffic. There would be a change in the aesthetic nature of land where the proposed project alternative would be constructed, but the nearest distance to the refuge would be 0.4 mile away. No ecological intrusions would result from proposed project alternatives as the alternatives are not within the Refuge itself. Migratory bird impacts would be reduced by scheduling construction and vegetation clearing activities to occur outside of important nesting periods. The proposed project alternatives would not have a permanent incorporation, adverse temporary occupancy, or constructive use of the Refuge; therefore, it appears that the Proposed Action would not result in a use of the Refuge. The DOT&PF obtained a "No Use Determination," since the proposed activities would not impact the Refuge (Appendix A).

IV. Impact Avoidance, Minimization, and Mitigation or Enhancement Measures to the Section 4(f) Property:
Identify any avoidance, minimization, and mitigation or enhancement measures that are included in the project to address the Section 4(f) use. For the purposes of this de minimis finding, "avoidance" here means avoidance of historic buildings, structures, or objects on the historic site, or avoidance of features and elements that contribute to the aspects of historic integrity that qualify the property to be eligible.

Archaeological surveys were conducted to identify archaeological or historical resources; as none were identified, the following design modifications were implemented to minimize and mitigate adverse impacts to the Section 4(f) property:

- Project elements (e.g. road embankment geometry, vehicle turn outs, water crossings) would be designed to incorporate the minimal dimensions necessary to serve the project purpose and need to minimize required fill placement.
- Project elements would be contained within a 300-foot ROW, the road would be no greater than 24- feet wide with 3:1 side slopes, and embankment height no greater than 8 feet above existing ground.
- Implement an Inadvertent Discovery Plan between DOT&PF, FHWA, SHPO, NPS, and local consulting parties prior to ground disturbing work associated with material site development.
- Monitor vegetation removal and stripping fine-grained sediments, possibly capping buried gravel deposits within Relic Channel Source 1, and north of the exposed gravel bar within the Wulik River Source 1 area. A professional archaeologist would complete monitoring.

V. Consulting Party Involvement:

List all Section 106 consulting parties that were contacted and summarize their comments. Please include contacts that were made even if no response was received.

The following includes a summary of Section 106 consulting party correspondence and responses:

- A Section 106 coordination meeting was held with the SHPO and NPS on July 10, 2017. During the meeting, it was discussed if additional cultural resource survey would be needed, and further discussion would take place following the meeting with DOT&PF, NPS, and SHPO to determine extent of field work needed. Following the meeting NPS would coordinate internally for possible *de minimis* finding.
- Section 106 Consultation Initiation Letters were sent to SHPO, NPS, Native Village of Kivalina, City of Kivalina, Native Village of Noatak, NANA Regional Corporation, Northwest Arctic Borough (NAB), NPS-Western Arctic National Parklands, and Bureau of Indian Affairs (BIA) on September 7, 2017. No responses were received.
- A site visit and project update meeting was held with SHPO and NPS on August 16, 2017. The conclusion of the site visit was that the likelihood of finding in situ buried cultural resources within the APE is low. Due to the location of the project within the Cape Krusenstern National Historic Landmark the extra testing measures conducted within the project APE were both necessary and sufficient to constitute an appropriate level of investigation to assess the project's potential effects on cultural resources.
- Section 106 Consultation No Historic Properties Adversely Affected Letters were sent to SHPO, NPS, Native Village of Kivalina, City of Kivalina, Native Village of Noatak, NANA Regional Corporation, NAB, NPS-Western Arctic National Parklands, and BIA on September 19, 2017.
    - The NPS concurred with the finding of no historic properties adversely affected conditional to include archaeological monitoring and an Inadvertent Discovery Plan on October 6, 2017.
    - SHPO concurred with the finding of no historic properties adversely affected conditional to include archaeological monitoring and an Inadvertent Discovery Plan on October 9, 2017.
- An informational letter was sent to SHPO, NPS, Native Village of Kivalina, City of Kivalina, Native Village of Noatak, NANA Regional Corporation, NAB, NPS-Western Arctic National Parklands, and BIA on December 29, 2017 to respond to comments received from NPS in their October 2017 concurrence letter. The updated letters address two AHRS sites on the periphery of the APE, where visual effects were of greatest concern. No ground disturbing activities are planned for the portions of the APE containing these two sites. The updated letters also include a finalized Inadvertent Discovery Plan.

VI. Coordination:

The State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP) (if participating), and the National Park Service (if the historic site is within a National Historic Landmark) has been informed in writing of DOT&PF's intent to make a *de minimis* impact finding based on written concurrence of the Section 106 determination. Attach documentation.

YES ☒ NO ☐

Notes:

VII. Signatures:

A. I recommend that DOT&PF find the project's impacts on the Section 4(f) property to be *de minimis*.

Brett D Nelson

[Signature] Regional Environmental Manager

Date: 1-4-18

Brett Nelson

[Print Name] Regional Environmental Manager

B. I have determined that:

1. The process required by Section 106 of the National Historic Preservation Act resulted in the determination of "no adverse effect" or "no historic properties affected" with the written concurrence of the SHPO, the NPS (for a landmark), and the ACHP (if participating);
2. The SHPO, ACHP (if participating in the Section 106 consultation), and NPS (if the historic site is within a National Historic Landmark) was informed of DOT&PF's intent to make a *de minimis* impact finding based on their written concurrence(s) in the Section 106 determination;
3. DOT&PF has considered the views of any consulting parties participating in the Section 106 consultation; and
4. The project will result in a *de minimis* impact on Cape Krusenstern National Historic Landmark

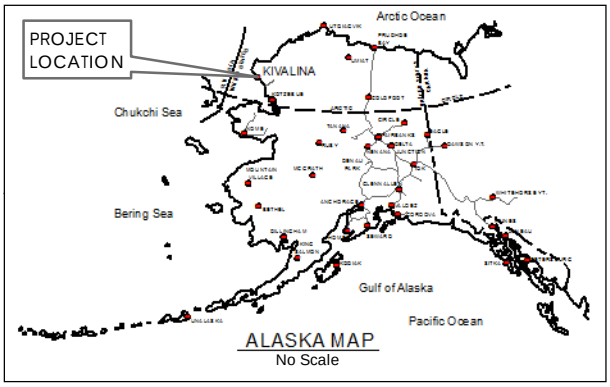
[Signature] NEPA Program Manager

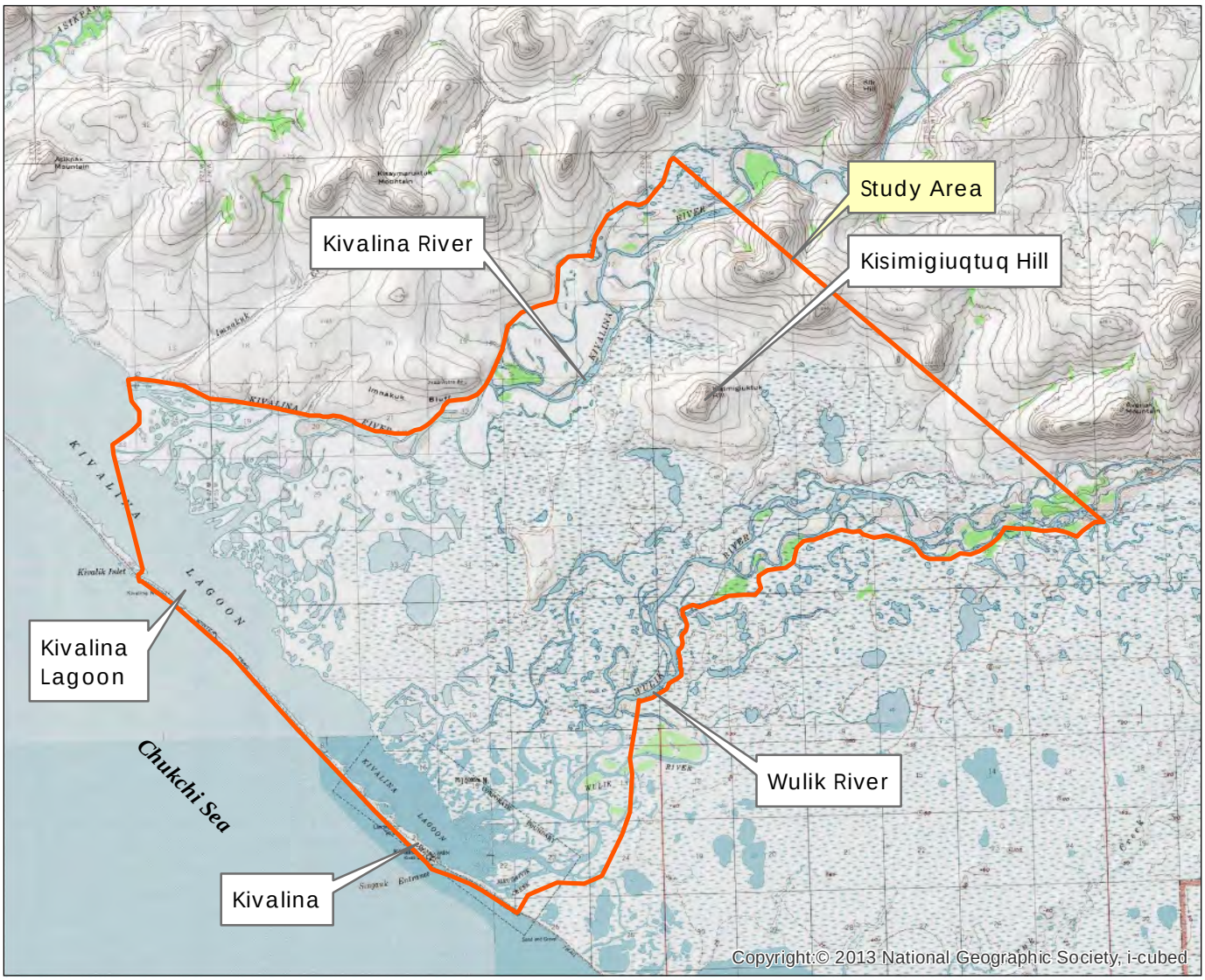
Date: 1/4/2018

Amy L. Sumner

[Print Name] NEPA Program Manager

FIGURES





Graphics developed by Stantec Consulting Services, Inc.

Project Origin: City of Kivalina,
Kotzebue Recording District,
Section 21, Township 27N, Range 26W,
Kateel River Meridian

Project Terminus: Kisimigiuqtuq Hill,
Section 19, Township 28N, Range 25W
Kateel River Meridian

0 1.25 2.5 5 Miles

1:142,961 (at original document size of 8.5x11)

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

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Location and Vicinity Map

DATE: December, 2017 | FIGURE **1**

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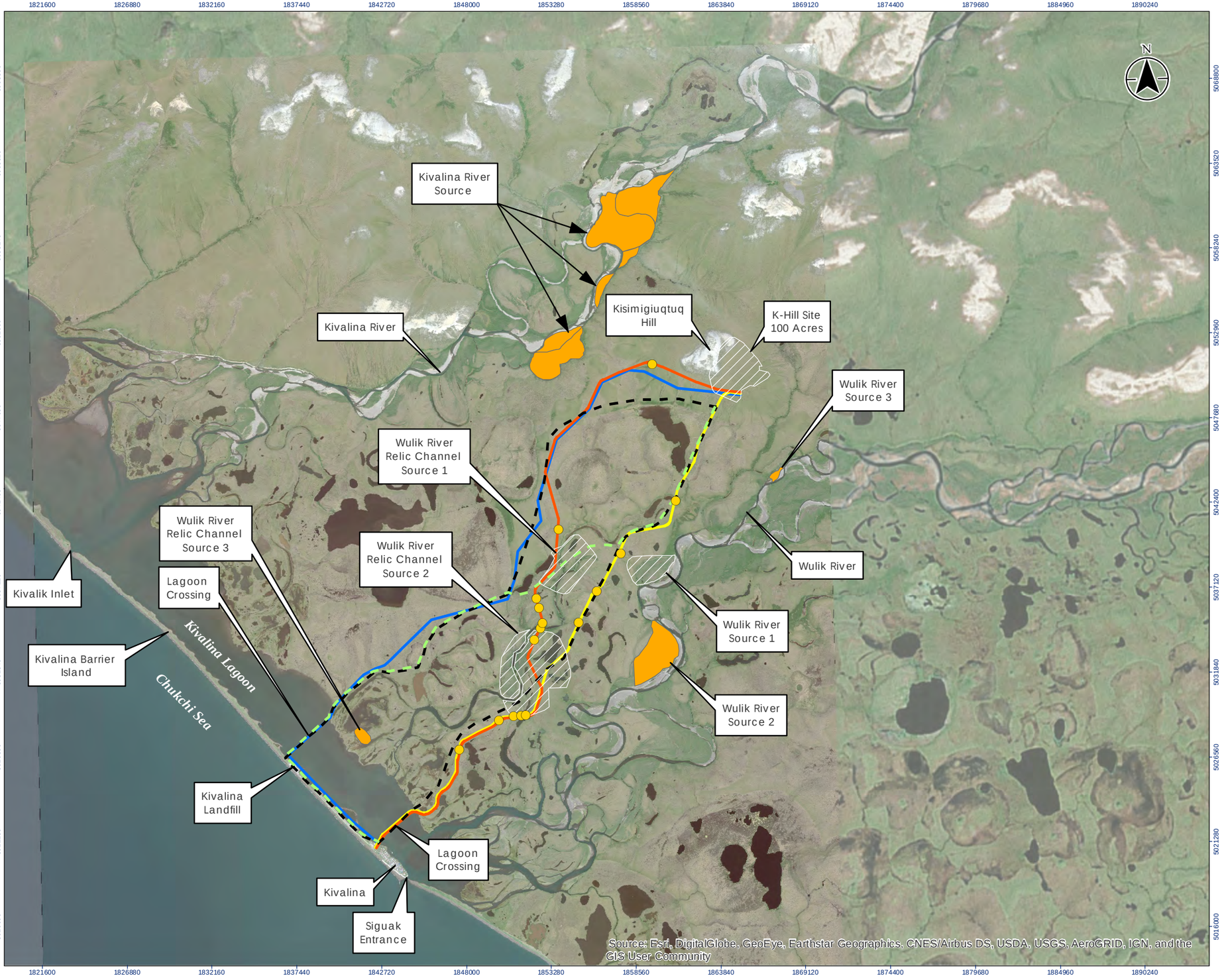


U:\204705102\GIS\mxd\EA\204705102_EA_Fig-2_Alternatives Considered.mxd Revised: 2017-12-19 By: cpannone

Legend

- Community Proposed Alternatives
- Community Combined Route A
- Northern Route - 9.5 miles*
- Southern Route - 7.7 miles*
- Combined Route B - 8.9 miles*
- Study Area
- Dismissed Material Sites
- Potential Material Source Areas**
- Water Crossings

* Proposed Routes are centered within ~1000 ft corridor.

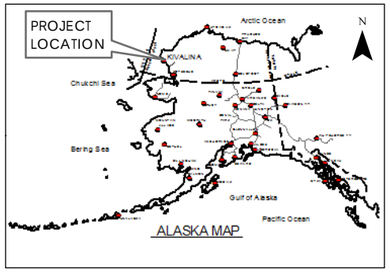
** Material sources would be developed within identified areas (See EA Section 3.1 Table 1).

0 0.5 1 Miles

1:75,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016
3. Ethnohistoric named locations derived from NLURA Cultural Resource Study (January 2016), referenced from published sources (Burch 1994, 1998, 2006).



Graphics developed by Stantec Consulting Services, Inc.

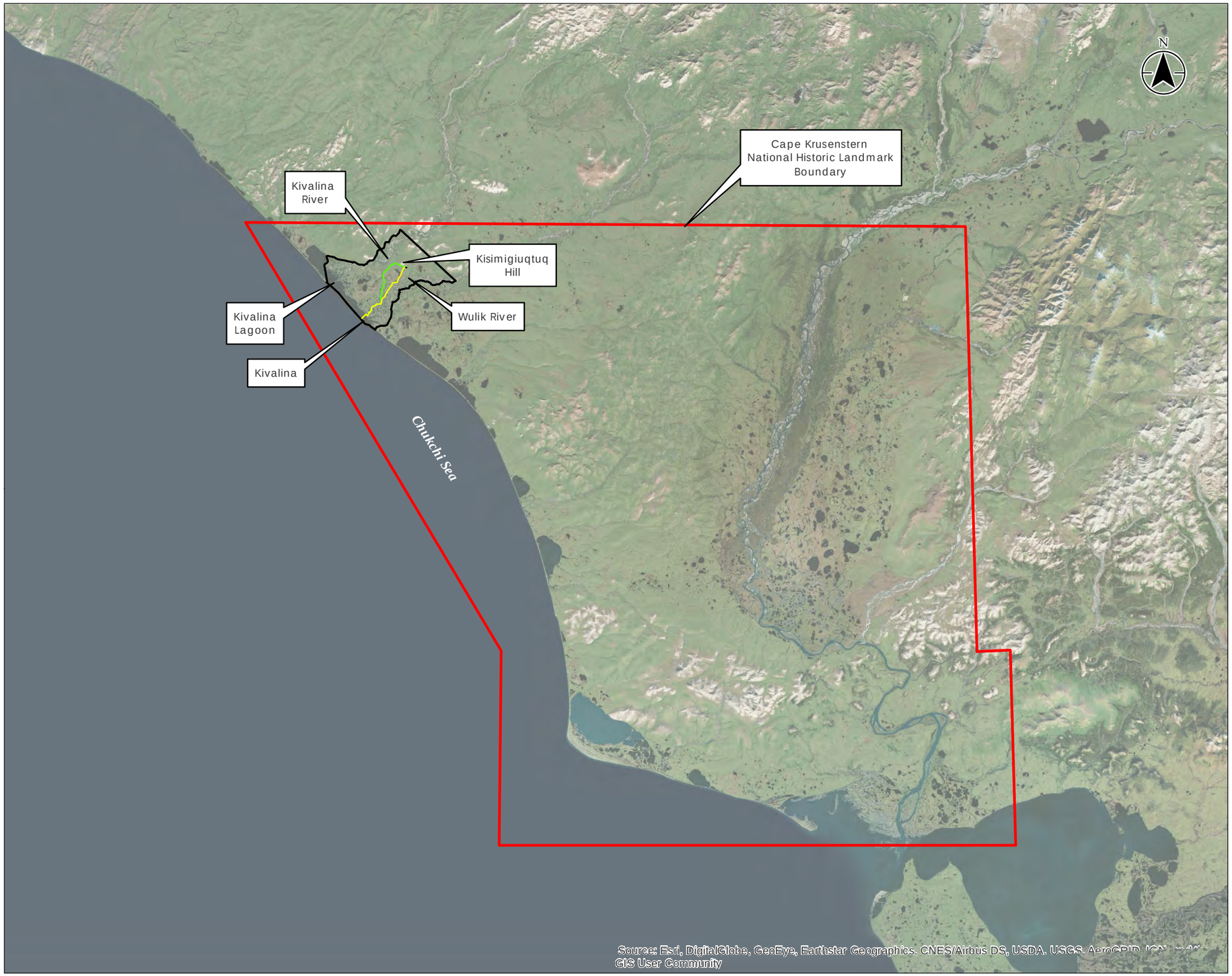
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Alternatives Considered

DATE: December, 2017

FIGURE **2**



Legend

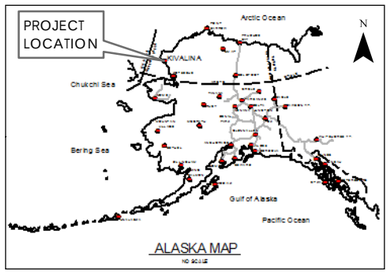
- Study Area
- Cape Krusenstern National Historic Landmark Boundary
- Southern Route - 7.7 miles
- Combined Route B - 8.9 miles

0 5 10 Miles

1:650,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016



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

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Cape Krusenstern National Historic Landmark Boundary

DATE: September, 2017 | FIGURE 3

U:\20470\5102\GIS\mxd\41\20470\5102_#_Fig-3_Cape Krusenstern.mxd Revised: 2017-09-05 By: cpannone

APPENDIX A

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Transportation and Public Facilities

NORTHERN REGION
Design and Engineering Services

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2273
TDD: 907-451-2363
Fax: 907-451-5126

November 10, 2016

Dear Agency Contact:

Re: Kivalina Evacuation and School Site Access Road
0002384/NFHWY00162
Request for Scoping Comments

The Alaska Department of Transportation and Public Facilities (DOT&PF) and the Federal Highway Administration (FHWA) in partnership with the Northwest Arctic Borough (NAB), Native Village of Kivalina, and the City of Kivalina, are proposing to improve community safety in Kivalina, Alaska by providing an evacuation road between Kivalina Island and a school to be constructed by the NAB that would also serve as a safe emergency evacuee assembly site on Kisimigiuqtuq Hill (K-Hill). Kivalina is located on the southeast tip of a 5.5-mile long barrier island, located between the Chukchi Sea (Arctic Ocean) and Kivalina Lagoon approximately 80 miles northwest of Kotzebue.

DOT&PF is conducting formal scoping to support preparation of an environmental document for the proposed road project in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended. Please identify any environmental, cultural, historic, or subsistence resources you believe may potentially be impacted by the proposed project, and provide any other information you deem valuable to the environmental documentation process. Your responses will help provide us with the necessary inputs to develop and design a proposed final project that avoids and minimizes as many potential adverse environmental and human impacts as possible.

Background

The community of Kivalina has been working for decades with a variety of local, state, and federal agencies to address threats of coastal erosion and flooding. Numerous study, concept, and planning documents exist on potential solutions, which range from: erosion protection around the city; to relocation of the entire community; to a new mainland site. Options involving community relocation have been problematic, as they are neither culturally preferable nor fiscally practical in the foreseeable future. Accordingly, Kivalina has turned to a locally approved approach of facilitating a safe, reliable, and direct means of community evacuation to an acceptable mainland location on K-Hill.

Project Location

The proposed road project origin would be at the City of Kivalina, which lies within the Kotzebue Recording District and is located in Section 21, Township 27 N, Range 26 W, of the Kateel River Meridian. The desired project terminus at K-Hill is located in Section 19, Township 28N, Range 25W, of the Kateel River Meridian. The feasibility of several potential route alignments is currently being evaluated within a project study area encompassing Kivalina Island, the southern portion of Kivalina Lagoon, and the lower Wulik and Kivalina River drainages in Townships 27N and 28N, Ranges 25W, 26W and 27W of the Kateel River Meridian (Figure 1).

Purpose and Need

The Kivalina Evacuation and School Site Access Road project would provide Kivalina residents a safe and reliable evacuation route in the event of a catastrophic storm or ocean surge, allowing evacuees to mobilize to safe refuge at a site on K-Hill also dedicated by the NAB as the preferred new location for the community school. Upon its anticipated construction, the school will augment the undeveloped evacuation site by serving as a full-service community emergency shelter with all-season, longer-term support capabilities.

Recent climate data has indicated that arctic sea ice is forming later in the season, increasing fall and winter storm duration and intensity along the Northwest Arctic coast. Consequently, residents of Kivalina face significant and increasing risks to safety, life and property by storm systems predicted to further intensify over time. The need for a concerted effort to mitigate these risks became more evident during an evacuation event in October 2007 when debris-laden storm waves overtopped the barrier island.

To facilitate community safety in the face of this increased threat, Kivalina needs a safe, stable, and reliable evacuation infrastructure (routing, transportation, shelter) in the event of impending catastrophe. To provide the routing component of this infrastructure will require construction of a road facility over a safe route that allows emergency response vehicles to access a secure location capable of supporting evacuees in times of need.

Proposed Action

Within the project study area, DOT&PF and FHWA are currently reviewing the feasibility of three existing, preliminary route options independently proposed by Kivalina and the NAB (Figure 2). While these routes may provide a useful basis for alternative development during NEPA documentation, additional draft alternatives are anticipated to be identified and considered as a consequence of agency and public scoping. Common to all anticipated alternatives will be the requirement to support the following actions:

- **Establishment of a safe, reliable, all-season Kivalina Lagoon crossing during evacuation mobilization.**
    - Concepts previously studied for their feasibility include construction of an earthen causeway across the lagoon that variously incorporates hydraulic and boat passage options including bridge(s), culvert(s), or both.

- **Construction of an all-season gravel access road between Kivalina Island and the desired K-Hill evacuation site**.

    - The road would be designed to accommodate both general purpose and emergency evacuation vehicles over a two-way road with shoulders, multiple turnouts, and safe side slopes that include guard rails or other safety features as required.

    - Over the last decade, Kivalina and the NAB have evaluated the feasibility of numerous local road routings that could potentially provide for evacuation, school access, or material site development. Evacuation routes considered to date by Kivalina and the NAB have included:

        - An alignment referred to as a *Northern Route* approximately 9.1 miles in length that would originate at the south end of the Kivalina Airport runway, parallel the runway on its east side northward for approximately 1.5 miles, cross the lagoon eastward via a causeway and/or bridge, and follow high ground between the Wulik and Kivalina Rivers to its terminus at K-Hill.

        - An alignment considered a *Southern Route* approximately 6.9 miles in length that would begin at the south end of the Kivalina Airport runway, immediately cross the lagoon eastward via a causeway and/or bridge, and follow lowlands and relic channels of the Wulik River to K-Hill.

        - A *Combined Route* approximately 8.6 miles in length that would follow the Northern route before merging with the Southern route via a one-mile long connecting segment.

- **Identification of Material Sources:** Although project materials would be specified as contractor furnished and development of material sources would not be included in the Proposed Action, analyses of material locations proximate to potential routes would be conducted to determine their feasibility and evaluate environmental impacts of their development. Four locations in the project study area known to contain potentially viable project materials, and currently being evaluated by Kivalina and the NAB, include:

    - *K-Hill*: K- Hill geology is characterized by exposed limestone and rock rubble at the ground surface. It is anticipated that below the surface, larger frost-fractured rocks and boulders may also exist.

    - *Wulik River Deposition Zone*: The Wulik River Deposition Zone is characterized by visible gravel bars and beaches along the river banks that would contain suitable materials to construct the proposed project.

    - *Wulik River Relic Channel*: The Wulik River Relict Channel is characterized by visible gravel and sand at the ground surface. The fluvial material in these areas was likely deposited when the Wulik River was located north of its present location.

- *Kivalina River Deposition Zone*: The Kivalina River is also being evaluated for potential material sources due to the areas visible on gravel bars and beaches that appear to contain suitable material.

Independent preliminary research and review on project study area resources was conducted by Kivalina and the NAB and is summarized in Appendix A. Additionally, a substantial document cache of previous studies and assessments on the project area, potential development projects at Kivalina, and various natural resources are available on the DOT&PF project website at: http://dot.alaska.gov/nreg/KivalinaEvacRd.

Based on additional agency and public input, engineering and environmental analyses and evaluations, and the application of regional Traditional Knowledge, DOT&PF intends to identify issues of environmental, technical and cultural concern, refine the project scope as necessary, and through evaluation of qualified potential routes develop a preferred project alternative that minimizes human and environmental impacts while meeting project purpose and need.

We respectfully request your written comments no later than December 12, 2016. Please mail them to: DOT&PF Attn: Sarah E. Schacher, P.E., 2301 Peger Road Fairbanks, AK, 99709; or you may e-mail comments to me at sarah.schacher@alaska.gov.

Thank you for your attention to this request. If you have any questions regarding the proposed project, please contact me at (907) 451-5361.

Sincerely,

Sarah E. Schacher, P.E.
Preconstruction Engineer

Enclosures: Figure 1 – Location & Vicinity Map
Figure 2 – Study Area and Potential Routes
Appendix A

pk/lmc

Distribution by email:
Alan Bittner, Anchorage Field Manager, U.S. Bureau of Land Management
Judy Bittner, State Historic Preservation Officer, Alaska Dept. of Natural Resources
Audra Brase, Regional Supervisor, Alaska Dept. of Fish & Game
Alan Cavallo, Public Assistance Branch Chief, Alaska Dept. of Military & Veteran Affairs
Sally Cox, Alaska Dept. of Commerce, Community & Economic Development
Jennifer Curtis, Environmental Protection Specialist, U.S. Environmental Protection Agency
Lesley DeWilde, Real Estate Services Chief, Bureau of Indian Affairs
Matthew Eagleton, Regional EFH Coordinator, NOAA-NMFS
Sandra Garcia-Aline, Division Administrator, Federal Highway Administration

Susan Georgette, Refuge Manager, U.S. Fish & Wildlife Service
Jeanne Hanson, Asst. Regional Administrator, NOAA-NMFS
James Helfinstine, Commander, U.S. Coast Guard, JBER
Bob Henszey, Fish & Wildlife Biologist, U.S. Fish & Wildlife Service
Rhea Hood, Archaeologist, U.S. National Park Service
Pete Probasco, Assistant Regional Director, U.S. Fish & Wildlife Service
Jeanne Proulx, Natural Resource Manager, Alaska Dept. of Natural Resources
Mary Romero, Project Manager, U.S. Army Corps of Engineers
James Rypkema, Environmental Program Manager, Alaska Dept. of Environmental Conservation
Glen Stout, Wildlife Biologist, Alaska Dept. of Fish & Game
Ronald Wall, Captain, Alaska State Troopers 'D' Detachment
Kristi Warden, Deputy Division Manager, Federal Aviation Administration
Ryan Winn, Field Office Project Manager, U.S. Army Corps of Engineers

State Parks, Refuges, and Critical Habitat Areas

A review of the Alaska Department of Fish & Game (ADF&G) Conservation Areas website (http://www.adfg.alaska.gov/index.cfm?adfg=protectedareas.locator) on September 26, 2016 revealed no state refuges, sanctuaries, critical habitat areas, or wildlife ranges within the study area.

National Parks, Preserves, Monuments, and Wild and Scenic Rivers, and Private Properties

A review of the National Park Service's website (https://www.nps.gov/hfc/carto/PDF/WEARmap1.pdf) was conducted on September 26, 2016 to determine if any National Parks, Preserves, Monuments, or Wild and Scenic Rivers exist in the study area. Cape Krusenstern National Monument is located approximately 8.5 miles to the south but does extend into the project study area. Noatak National Preserve is located approximately 45 miles to the east. None of these designated sites are within the study area. Kivalina Lagoon includes a small portion of the Alaska Maritime National Wildlife Refuge (Chukchi-Sea Unit); two islands, totaling 75 acres are owned by the Kivalina Sinuakmeut Corporation located directly east of Kivalina at the mouth of the Wulik River http://fws.maps.arcgis.com/apps/webappviewer/index.html?id=3eed8d6b30ea443dafe4380d70d0fa5el). Another 116 acres of the Refuge, owned by the same Corporation, is located 4 miles south and effectively constitutes the land spit separating the Imikruk Lagoon from the Chukchi Sea.

Navigable Waters

All tidal and marine waters are considered navigable, which in this case would include Kivalina Lagoon. Building a causeway over the lagoon would require a U.S. Army Corps of Engineers (USACE) Section 10 permit, and potentially a U.S. Coast Guard (USCG) Bridge permit if applicable. Neither the Kivalina nor the Wulik River are listed as navigable waters (http://www.poa.usace.army.mil/Portals/34/docs/regulatory/NavWat.pdf). DOT&PF and FHWA will coordinate with the USCG on permit requirements, if any.

Floodplain Management

Two rivers flow into Kivalina Lagoon: the Kivalina River at the northern end of the lagoon and the Wulik River at the southern end. The floodplains of both rivers are broad and braided. The Northwest Arctic Borough (NAB) implements flood prevention in code in order for communities, including the City of Kivalina, to participate in the National Flood Insurance Program (NFIP). Although Kivalina does not have a 100-year floodplain identified or mapped by the Federal Emergency Management Agency (FEMA), Flood Hazard Data from the USACE indicates that the limits of the 100-year floodplain is the 30-foot contour on the 1976 ADCRA Community Map. The proposed project area is at or below the 25-foot contour and therefore in the floodplain of the Kivalina and Wulik Rivers. Consideration of floodplain impacts will be included as part of the NAB permitting process for this project.

Water Resources and Water Quality

The Alaska Department of Environmental Conservation (ADEC) has delineated a drinking water protection area (http://www.arcgis.com/home/webmap/viewer.html?webmap=a1196dd615694cccb85fd9088212412e) for the Kivalina Water System which encompasses the Wulik River adjacent areas, including a portion the southern study area (PWSID: AK2340117). Water for the community of Kivalina is obtained from the Wulik River using a seasonal three-mile long surface transmission line (*Evacuation and School Access Road Route Reconnaissance Study, Native Village of Kivalina, 2014*). A search of ADEC data on September 26th, 2016 revealed no impaired waterbodies nor any water quality monitoring locations within the study area (http://www.arcgis.com/home/webmap/viewer.html?webmap=f7e8ca8c14fe4520b9e2e1498e3cdee3).

Wetlands and Vegetation

A search of the U.S. Fish and Wildlife (UFWS) National Wetlands Inventory (NWI) mapper (https://www.fws.gov/wetlands/Data/Mapper.html) identifies most the study area as mapped wetlands. In addition, a previous desktop wetland delineation and functional assessment completed for the NAB in 2015 identifies 95% of the study area as comprised of wetlands and Waters of the United States (*Wetland Delineation and Functions and Values Assessment Kivalina Evacuation Route Wetlands Mapping Study, NAB 2015*). Necessary permitting will be conducted in accordance with Section 404 and 10 of the Clean Water Act for unavoidable wetland impacts.

Fish and Fish Habitat

A diversity of marine and anadromous fish may be found in lagoon and/or rivers within the study area. Both the Kivalina and Wulik Rivers, as well as Kivalina Lagoon and a small connector stream, are identified in the ADF&G Alaska Waters Catalog (AWC) Fish Resource Monitor as anadromous waterbodies within the study area (http://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=maps.interactive). Species identified in these waterbodies are summarized in the table below:

Anadromous Stream Name	Anadromous Stream Number	Species Identified
Kivalina River	331-00-10044	Pink, chum, king, coho, sockeye, Dolly Varden (char)
Wulik River	331-00-10060	Pink, chum, king, coho, sockeye, Dolly Varden (char), whitefish
Kivalina Lagoon	331-00-10060-0010	Pink, chum, king, coho, sockeye, Dolly Varden (char), whitefish
Unnamed reach connecting Kivalina Lagoon and Kivalina River	331-00-10050	Pink, chum, coho, Dolly Varden (char)

Of the several species of anadromous whitefish found in the Wulik River and Kivalina Lagoon, sheefish (inconnu) are the largest. Arctic grayling are sometimes present in the Kivalina Lagoon. Rainbow smelt are indigenous to most all Chukchi Sea lagoons that are open to the sea. Several species of marine fish, some of which are relatively brackish-water tolerant, are found in Kivalina Lagoon and near-shore coastal waters. These include Bering flounder, yellowfin sole, starry flounder, saffron cod, Arctic cod, Pacific herring, sculpin, and capelin. Arctic cod and saffron are documented to appear in Kivalina Lagoon twice a year after freeze-up and in early July (*Subsistence Production in Kivalina, Alaska: A Twenty Year Perspective. Technical Report No. 128 prepared for the ADF&G Division of Subsistence. Juneau, Alaska. Burch, 1985*).

Kivalina residents rely heavily on fish as cultural and nutritional resources. In 2007, Kivalina harvested more than 54,000 fish. Of the estimated 79,000 edible pounds of fish and shellfish harvested, 86% were Dolly Varden. Safron cod, locally known as tomcod, comprised 2%, and salmon species made up 1% of the total. All other species fell below 1% (*Alaska Subsistence Salmon Fisheries 2007 Annual Report Technical Paper No. 346 prepared for the ADF&G Division of Subsistence. Anchorage, Alaska. Fall et al. 2009*). In the Kotzebue area, subsistence salmon fishing has few restrictions other than the general statewide provision. Standard conditions include prohibition of fishing within 300ft of a dam, fish ladder, weir, culvert or other artificial obstructions (Fall et al. 2009).

Essential Fish Habitat

The Arctic Fisheries Management Plan includes the study area in Essential Fish Habitat (EFH) designations for late juvenile and adult saffron and arctic cod, potentially for late juvenile and adult snow crab and arctic cod, and has determined that there is insufficient information for determine EFH for eggs, larvae and early juveniles of arctic cod and saffron cod and for larvae and early juveniles of snow crab. (http://www.npfmc.org/wp-content/PDFdocuments/fmp/Arctic/ArcticFMP.pdf#page=89. A Preliminary EFH Assessment has been completed by WHPacific in 2012. Any outstanding work will be completed and DOT&PF will consult with the National Marine Fisheries Service (NMFS) on effects to EFH and implementation of any proposed conservation measures.

Aquatic Wildlife

The study area is strongly influenced by seasonal ice cover. Ice directly affects the distribution and migration patterns of birds and marine mammals. Ice freezes to the bottom in the fall in shallow nearshore areas and many species of birds and marine mammals migrate south along the coast as sea ice advances. In spring, nutrients and sea ice algae trapped in the ice nourish primary production, resulting in a highly productive estuarine-like nearshore corridor which anadromous and marine fish, shorebirds, waterfowl, and some species of marine mammals take advantage off, including during their migration back north to feed and breed.

Marine Mammals:

Marine mammals are an essential part of the culture and food security in Kivalina year-round with different species occurring at different times of the year (IEA Chapter 4: Important Areas for marine mammals and coastal species). In the coastal area off Kivalina, marine mammal species include beluga whale (*sisuaq, Delphinapterus leucas*), gray whale (*aġviġluaq, Eschrichtius robustus*), bowhead whale (*aġvik, Balaena mysticetus*), bearded seal (*ugruk, Erignathus barbatus*), ringed seal (*natchiq, Phoca hispida*), spotted seal (*qasigiaq, Phoca largha*), and polar bear (*nanuq, Ursus maritimus*). In Kivalina Lagoon, marine mammals most frequently observed are bearded, spotted and ringed seals. Marine mammals that are consistently important for subsistence harvest are beluga, bearded seal and ringed seal (OCS EIS, 2007: http://www.boem.gov/uploadedFiles/BOEM/About_BOEM/BOEM_Regions/Alaska_Region/Environment/Environmental_Analysis/2007-026-Vol%20I.pdf).

All marine mammals are protected under the Marine Mammal Protection Act, and, ringed seals and polar bear are also listed as Threatened under the Endangered Species Act (ESA).

Aquatic Birds:

The area around Kivalina is a staging area for migratory aquatic species in the spring and the fall and more than 100 species of birds, most of which are waterfowl and shorebirds have been identified in this region (*Red Dog Mine Extension Aqqaluk Project Final Supplemental EIS, 2009*), including Canada geese (*Branta canadensis*), greater white-fronted goose (*Anser albifrons*), tundra swan (*Cygnus columbianus*) and all four species of loon. Both Steller's Eider (*Polysticta stelleri*) and the Spectacled eider (*Somateria fischeri*) are also known to be in this area, both of which are listed as Threatened under ESA (*Environmental Assessment and Finding of No Significant Impact: Section 117 Expedited Erosion Control Project, Kivalina, USACE, Alaska District, 2007*). Specifically, the presence of open water and emergent vegetation in the sedge-grass marshes associated with ponds and the riparian low shrub areas along the Kivalina and Wulik river drainages provide suitable inland breeding and molting habitat for species such as the Canada goose. The near-shore areas and lagoon provide habitat for the yellow-billed loon (*Gavia adamsii*), which feeds on fish and invertebrates in the marine environment as well as in freshwater. Yellow-billed loons nest exclusively in coastal and inland low-lying tundra from 62° to 74° N latitude, in association with permanent, fish-bearing lakes. Waterfowl are important birds harvested for subsistence. Migratory aquatic birds are protected under Migratory Bird Treaty Act.

Terrestrial Wildlife

Terrestrial Birds:

More than 100 species of birds migrate from the lower 48 states and Central and South America, to nesting, breeding, and rearing grounds in the State of Alaska. Five species have been identified as species of concern for northern Alaska, including the gyrfalcon (*Falco rusticolus*), snowy owl (*Bubo scandiacus*), gray-cheeked thrush (*Catharus minimus*), Smith's longspur (*Calcarius pictus*), and hoary redpoll (*Acanthis hornemanni*) (BPIF 1999 cited in Red Dog Mine EA). Within the project area, riparian corridors of willow and alder shrubs likely contain the highest diversity of land birds. In addition to these long-distant migrants, the general area also has occurrences of raptors like golden eagles (*Aquila chrysaetos*), gyrfalcon and peregrine falcons (*Falco peregrinus*) (which are known to nest along in the rocky cliffs of the area close to Red Dog Mine (Red Dog Mine Supplemental EIS, 2009). In addition, willow (*Lagopus lagopus*) and rock ptarmigan (*Lagopus muta*) appear to occur in low shrub and tussock tundra in the region, and are considered the most important terrestrial birds for subsistence. Migratory birds are protected under the Migratory Bird Treaty Act. Golden eagles are further protected under the Bald and Golden Eagle Protection Act of 1940.

Terrestrial Mammals:

Five species of large terrestrial mammals are known to occur in the study area: caribou (*Rangifer tarandus*), moose (*Alces alces*), muskox (*Ovibos moschatus*), Dall sheep (*Ovis dalli*), and brown bear (*Ursus arctos*). Caribou, moose, and Dall sheep have historically been and continue to be important subsistence resources for Kivalina. Common furbearers in the project area include wolves (*Canis lupus*), wolverine (*Gulo gulo*), red fox (*Vulpes vulpes*), arctic fox (*Alopex lagopus*), lynx (*Felis lynx*), marten (*Martes americana*), and mink (*Mustela vison*). Many of these species are important to hunters and trappers in the region for their pelts, which are used to make traditional Alaska Native crafts and clothing (Red Dog Mine Supplemental EIS, 2009).

Caribou:

Caribou are the principal terrestrial subsistence animal in the region and are hunted in the tundra hills behind Kivalina. A 1992 ADF&G subsistence survey conducted in the community indicated a harvest of 351 caribou—18.2% of the total subsistence harvest (OCS EIS, 2007). Local caribou are part of the Western Arctic Herd the largest caribou herd in the State of Alaska and one of the largest in the world (Red Dog Mine Supplemental EIS) that migrates annually in large numbers through the region. Most caribou are harvested in the fall when the main migration reaches the Kivalina area, but they are also hunted throughout the winter, as available, and shot opportunistically year-round. Winter distributions, in both numbers and location, are highly variable and may be dependent on local weather conditions (*U.S. Environmental Protection Agency Draft Environmental Impact Statement Red Dog Mine Project Northwest Alaska, February 1984*). Most of the spring migration occurs well to the east of Kivalina (Red Dog Mine Supplemental EIS, 2009).

Other Species:

Moose: Moose in the Kivalina area are part of Game Management Unit 23. During winter, moose are found along the drainages of the Wulik and Kivalina rivers. Compared to other populations in Alaska, moose in this area are considered to be of low density (OCS EIS 2007, Red Dog Mine Supplemental EIS, 2009).

Muskoxen: Reintroduced in 1970, the Cape Thompson population, ranging from the Noatak River north to Cape Lisburne remains fairly small (around 300 animals), and is generally found within 15 miles of the coast (Red Dog Mine Supplemental EIS, 2009).

Dall Sheep: Dall sheep are prized for their meat, fat, sinew, skins, and horns and hunted in the upper Wulik and Kivalina River drainages (OCS EIS, 2007). Kivalina hunters reported taking about 25 Dall sheep in the 25 years prior to 1991.

Brown Bear: Brown bears occur in the area throughout the year, making use of a variety of habitats (Red Dog Mine Supplemental EIS, 2009). In spring, bears use alpine slopes, shifts to lowland or coastal areas during summer, and during fall in particular, can be found around salmon spawning streams.

Protected Species and Habitats

Threatened and endangered species are managed under the ESA, requiring federal agencies to ensure that all activities they "authorize, fund, or carry out" do not jeopardize the continued existence of any threatened or endangered species or designated critical habitat. Migratory birds are protected by the Migratory Bird Treaty Act of 1918. Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds), issued in 2001, requires the evaluation of the effects of federal actions on migratory birds, with an emphasis on species of concern. Although eagles are not considered rare in this part of Alaska, another potential regulatory mechanism that applies to wildlife in the study area is the Bald and Golden Eagle Protection Act of 1940. Marine mammals are further protected by the Marine Mammal Protection Act of 1972. Fish and fish habitat have further protection if federally designated under EFH in the Magnuson-Stevens Fishery Conservation and Management Act.

On a State level, water bodies listed in the AWC are considered important to anadromous fish species and are afforded protection under Alaska Statute 16.05.871. For other wildlife, it should be noted that as of August 15, 2011, the Alaska Department of Fish and Game (ADF&G) no longer maintains a Species of Special Concern list. The list has not been reviewed and revised since 1998 and is no longer considered valid. Instead ADF&G currently uses the Alaska Wildlife Action Plan to assess the needs of species with conservation concerns, and to prioritize conservation actions and research.

Species that fall under these formal protections and may occur in the study area include all species of Pacific salmon, ringed, bearded and spotted seals, beluga whales, spectacled and Steller's eider, and all migratory birds (see specific sections above for details).

Historical, Architectural, Archeological, and Cultural Resources

Twenty-nine Alaska Heritage Resource Survey (AHRS) sites are currently located within or directly adjacent to the study area (see Table below). Twenty-four of these are archaeological resources and potential historic structures located within the community of Kivalina. Three sites, including the remains of a camp (NOA-301), meat caches and icehouses (NOA-298), and a reindeer corral and processing site (NOA-302), are located within the study area south of the mouth of the Wulik River. One site, the Ualliik Trail (NOA-304) is mapped outside of the study area but historically followed the east bank of the Wulik River into the study area. Additionally, the boundaries of the Cape Krusenstern National Historic Landmark (NHL), which extends more than 10 miles northwest of the Cape Krusenstern National Monument boundary, encompasses a portion of the south half of the study area.

An archaeological predictive model prepared for this project in January 2016 and results of a reconnaissance investigation completed in September 2016 suggest that locally proposed route corridors and material source areas encompass landforms with increased potential for containing archaeological resources. FHWA and DOT&PF will consult with the State Historic Preservation Officer (SHPO), Tribal entities, and the National Park Service in accordance with Section 106 of the National Historic Preservation Act (NHPA) and Section 4(f) of the DOT Act of 1966 to identify resources that may be adversely affected by the proposed undertaking.

Alaska Heritage Resource Survey (AHRS) sites

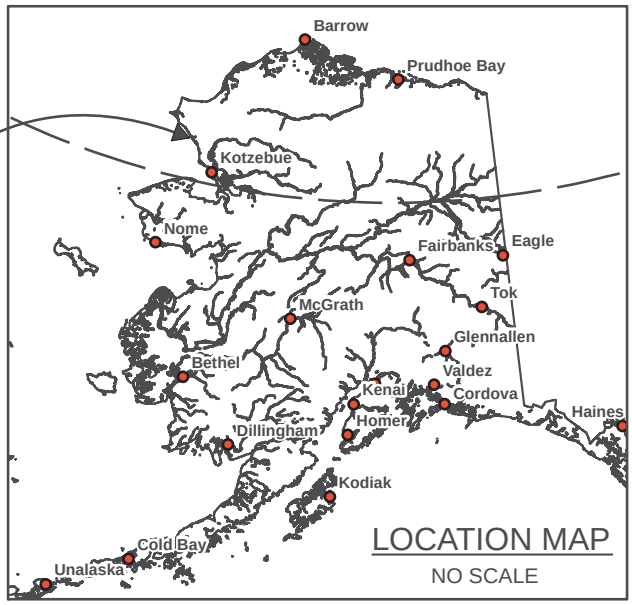
AHRS #	Approx. Location (relative to nearest Proposed Project Element)	Description	DOE Status
NOA-004	0.30 mile SE of Southern Route Causeway	Kivalina Village	Unevaluated
NOA-042	Encompasses southern portions of North/Combined and Southern Routes	Cape Krusenstern Archaeological District	National Historic Landmark
NOA-298	1.60 miles southeast of Southern Route	Meat Caches/Icehouses	NRHP Eligible
NOA-301	1.53 miles southeast of Southern Route	Camp	NRHP Eligible

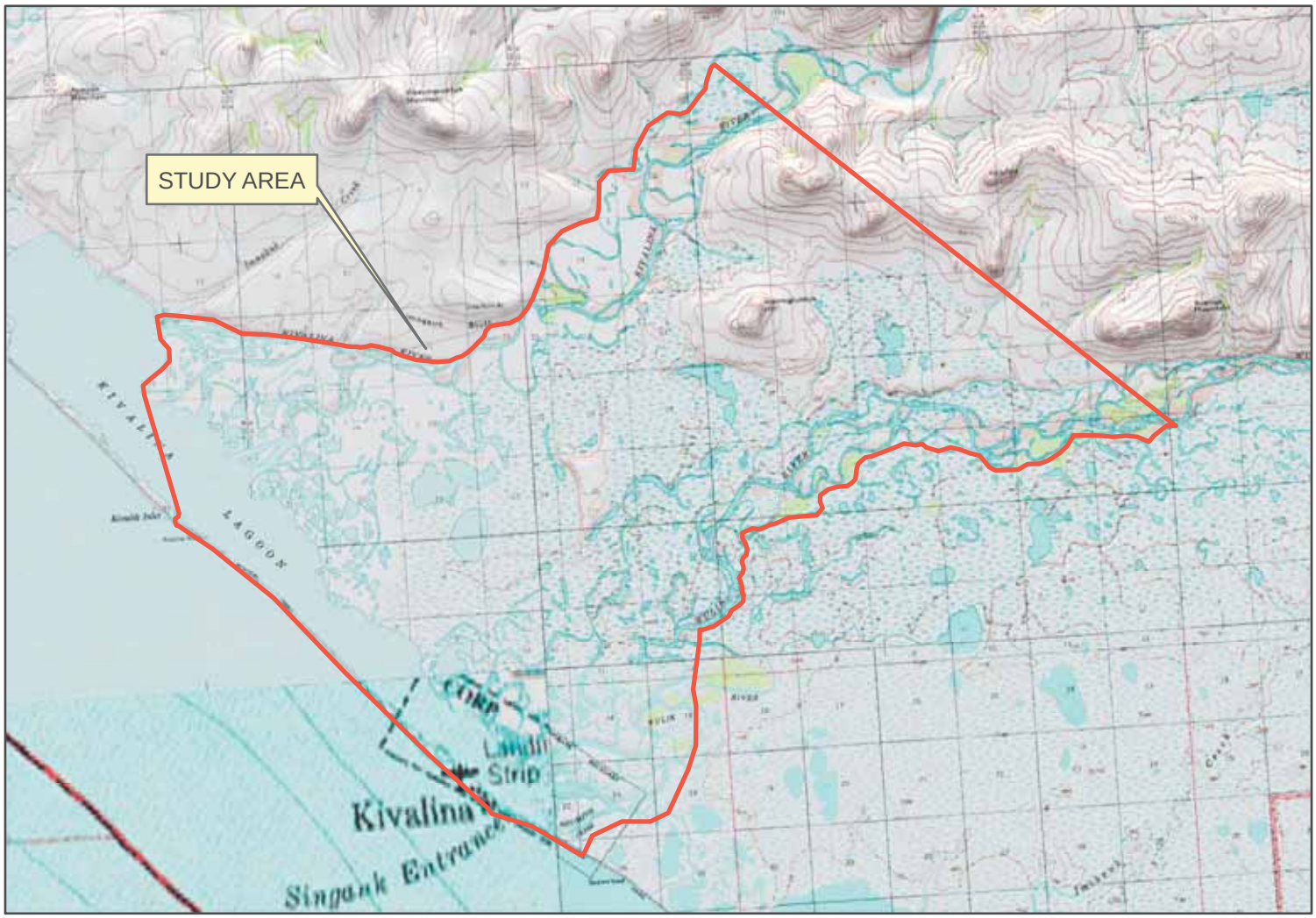
AHRS #	Approx. Location (relative to nearest Proposed Project Element)	Description	DOE Status
NOA-302	1.55 miles southeast of Southern Route	Reindeer Corral and Processing Site	NRHP Eligible
NOA-304	1.80 miles southeast of Southern Route	Ualliik Trail	Unevaluated
NOA-311	0.50 mile southeast of Southern Route Causeway	Single Story Wood Frame Structure	Unevaluated
NOA-312	0.50 mile southeast of Southern Route Causeway	Single Story Wood Frame Structure	Unevaluated
NOA-313	0.45 mile southeast of Southern Route Causeway	Single Story Wood Frame Structure	Unevaluated
NOA-314	0.20 mile southeast of Southern Route Causeway	Two Story Wood Frame Structure	Unevaluated
NOA-315	0.38 mile southeast of Southern Route Causeway	Kivalina Cemetery (used prior to the mid-1940s)	Unevaluated
NOA-316	0.38 mile southeast of Southern Route Causeway	Kivalina Cemetery #2	Unevaluated
NOA-317	0.40 mile southeast of Southern Route Causeway	Eroding Human Remains and Artifacts	Unevaluated
NOA-318	0.50 mile southeast of Southern Route Causeway	Eroding Human Remains and Artifacts	Unevaluated
NOA-319	0.55 mile southeast of Southern Route Causeway	Human Remains	Unevaluated
NOA-320	0.57 mile southeast of Southern Route Causeway	Eroding Human Remains	Unevaluated
NOA-321	0.50 mile southeast of Southern Route Causeway	Human Remains	Unevaluated
NOA-322	0.53 mile southeast of Southern Route Causeway	Possible House Pit Depressions	Unevaluated
NOA-323	0.42 mile southeast of Southern Route Causeway	Possible Gravesite and Historic Sod House	Unevaluated
NOA-324	0.41 mile southeast of Southern Route Causeway	Burial Structure	Unevaluated
NOA-325	0.15 mile southeast of Southern Route Causeway	Human Remains	Unevaluated
NOA-326	0.15 mile southeast of Southern Route Causeway	Human Remains and Burial Box	Unevaluated
NOA-327	0.15 mile southeast of Southern Route Causeway	Artifacts	Unevaluated
NOA-328	0.15 mile southeast of Southern Route Causeway	Historic Sod Houses	Unevaluated
NOA-339	0.48 mile southeast of Southern Route Causeway	Non-human Faunal Remains	Unevaluated
NOA-362	0.40 mile southeast of Southern Route Causeway	Buried Wood Structure; Human Remains	Unevaluated
NOA-587	0.35 mile southeast of Southern Route Causeway	Kivalina Federal Scout Readiness Center	Recommended Not Eligible
NOA-591	0.25 mile southeast of Southern Route Causeway	Artifact Scatter	Unevaluated
NOA-592	0.27 mile southeast of Southern Route Causeway	Possible Historic Sod House	Unevaluated

Hazardous Materials, Pollution Prevention, and Solid Waste

A search of the ADEC *Contaminated Sites Database* identified only one site in the study area. This site, ADEC# AKARNG Kivalina FSA, is recorded as having its cleanup complete. A 6.5- acre Class 3 unpermitted municipal landfill is located within the study area, approximately 0.3 miles north of the Kivalina Airport runway and surrounded by the Chukchi Sea to the west and the Kivalina Lagoon to the east. Possible contaminants at this site include construction and demolition waste, asbestos, and sewage. Honey bucket waste is comingled with solid waste at this site.

PROJECT LOCATION





Northwest Arctic Borough
Alaska Department of Transportation and Public Facilities - Northern Region

Location & Vicinity Map
Project Number: 0002384/NFHWY00162

DATE: November 2016 | FIGURE 1

0 1.25 2.5 5 Miles


Kivalina River
Kisimigiuqtuq Hill
Kivalina River Depositional Zone
School Site
Simiq Hill
Wulik River Relic Channel
Wulik River Depositional Zone
Wulik River
Kivalina
NOTES:
*Access routes shown are from "Evacuation and School Access Road Project, Kivalina, Alaska, Route reconnaissance Study; submitted to Native Village of Kivalina, submitted by WHPacific (revised June 2014).
The imagery background is WV-2 satelltie imagery from July 2016.
Legend
North Access Route*
Combined Access Route*
South Access Route*
Native Allotments
Potential Material Sources
Project Study Area
0 0.5 1 2 Miles
DATE: November 2016
FIGURE 2
STUDY AREA AND POTENTIAL SITES
PROJECT NUMBER: 0002384/NFHWY00162

AK SHPO, Scoping Response:

From: Rollins, Mark W (DNR)
Sent: Friday, November 25, 2016 3:10 PM
To: Schacher, Sarah E (DOT)
Cc: Gamza, Thomas A (DOT)
Subject: Kivalina Evacuation and School Site Access Road, Request for Scoping Comments

Hi Sarah,

The Alaska State Historic Preservation Office (AK SHPO) has no additional information regarding identified cultural resources (historic, prehistoric, and archaeological sites, locations, remains, or objects) at this time for the subject project. We look forward to future consultation on additional draft alternatives anticipated to be identified during the NEPA process and recommend DOT&PF include all potential material sources and route alternatives in the area of potential effects (APE). If you have any questions about developing the APE, once alternatives are identified, we are happy to assist you. As you noted in Appendix A of your letter, there are several cultural resources within the study area and potential for archaeological sites along the proposed route corridors, as such we look forward to reviewing the archaeological predictive model and report from the fieldwork completed in September, 2016. Please note that if additional alternatives are located outside of the fieldwork conducted in September, 2016 that additional archaeological investigations may be appropriate. Before further identification is considered, we recommend DOT&PF establish an APE.

As a reminder, The APE should encompass the geographic area within which an undertaking may directly or indirectly affect historic properties. Following the establishment of the APE, any potential historic properties within the APE must be evaluated for eligibility for inclusion to the National Register of Historic Places *(36 CFR § 800.4).* The nature of project effects on any historic properties, including those listed in or eligible for inclusion in the National Register of Historic Places, will need to be assessed *(36 CFR § 800.5).* Adverse effects to eligible historic properties will need to be resolved through mitigation measures developed in consultation with our office *(36 CFR § 800.6).*

As more information becomes available, we will work with DOT&PF and consulting parties to avoid, minimize, and/or mitigate effects to historic properties. We look forward to further consultation with DOT&PF for this project in accordance with the 2014 *Programmatic Agreement… for the Federal-Aid Highway Program in Alaska* and Section 106 of the National Historic Preservation Act.

Thank you for submitting the scoping materials for the subject project for our review and comment. If you have any questions about cultural resources please contact me or Northern region's Professionally Qualified Individual (PQI) Tom Gamza.

Mark W. Rollins

Archaeologist II

Alaska State Historic Preservation Office/ Office of History and Archaeology

550 West 7th Avenue, Suite 1310

Anchorage, AK 99501

(907) 269-8722

National Park Service, Scoping Comments:

From: Hood, Rhea [mailto:rhea_hood@nps.gov]
Sent: Tuesday, November 29, 2016 12:22 PM
To: Schacher, Sarah E (DOT)
Subject: Kivalina Evacuation and School Site Access Road 0002384/NFHWY000162

VIA ELECTRONIC MAIL: NO HARD COPY TO FOLLOW
IN REPLY REFER TO:
8.A.4 (AKRO-RCR)

National Park Service
240 W. 5th Ave.
Anchorage, AK 99501

Sarah E. Schacher, P.E.
2301 Peger Road
Fairbanks, AK 99709

Dear Ms. Schacher,

Thank you for your letter of November 11, 2016, requesting National Park Service preliminary review and comment of the proposed Kivalina Evacuation and School Site Access Road Project.

The NPS administers the National Historic Landmark program for the Secretary of the Interior. The NPS serves as an interested party throughout the Section 106 process to help ensure the integrity of the NHL, which includes consultation prior to an agency making a determination of effect.

Based on the project description you provided, the entire project study area is within the boundary of the Cape Krusenstern Archeological District National Historic Landmark (attachment). Kivalina is part of the NHL because of its evidence of precontact occupation, and because of the understanding that currently submerged lands and wetlands were dry during the Pleistocene and have potential for research on the history of that period. We are interested in the process of identification and evaluation of cultural resources in the study area, activities or construction that will involve ground disturbance in the study area, and mitigation actions during and after construction of the access road.

Please direct questions and correspondence to me at (907) 644-3460 or rhea_hood@nps.gov. We look forward to working with you to minimize harm to this important property.

Sincerely,

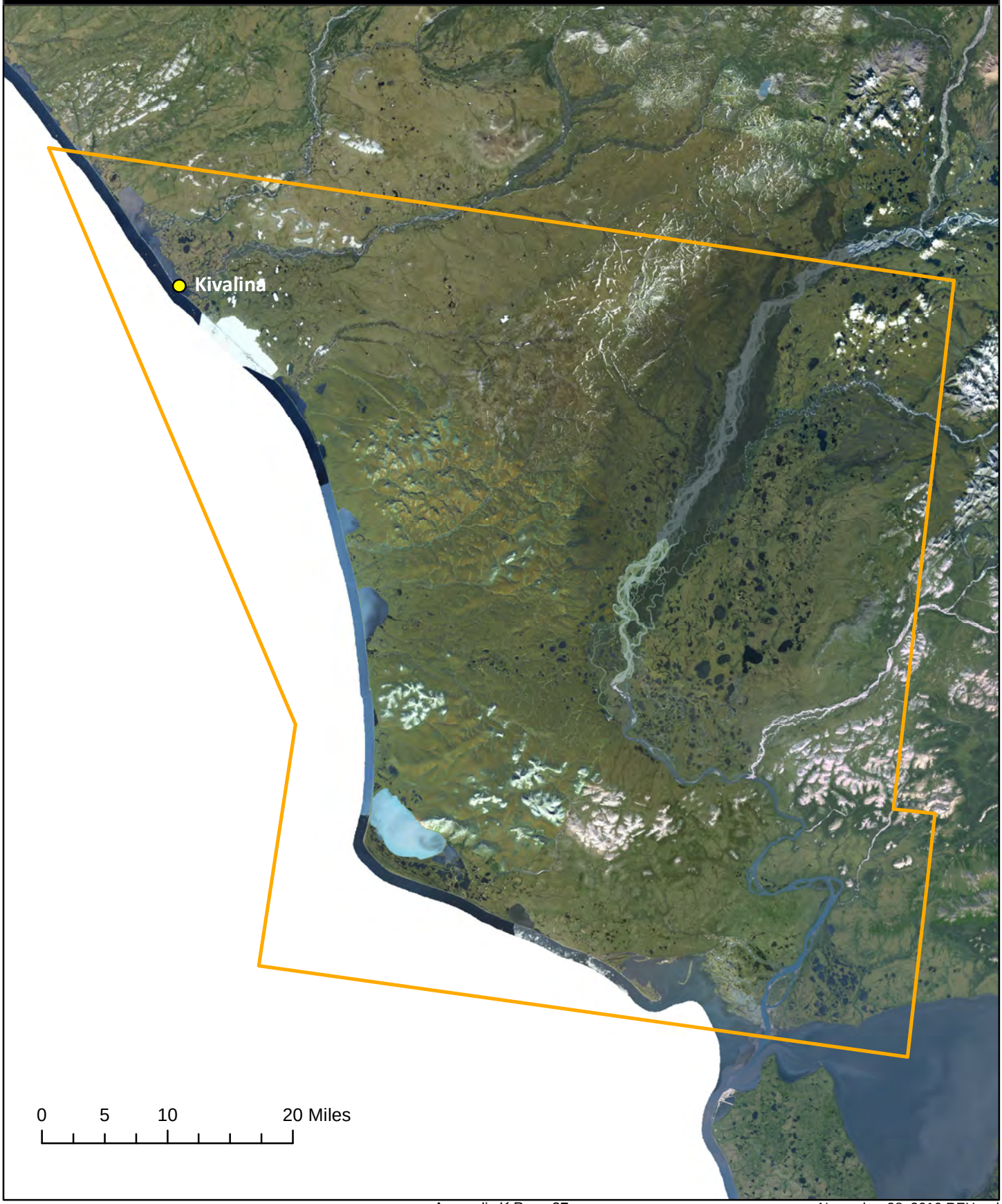
/s/ Rhea Hood

Rhea Hood

Archeologist, National Register of Historic Places Program

Cape Krusenstern Archeological District
National Historic Landmark Boundary
NOA-00042

National Park Service
Alaska Regional Office
Cultural Resources



November 28, 2016 REHood

Kivalina Evacuation and School Site Access Road
Project Number: 0002384/NFHWY00162
Combined NPS and ADNR/OHA-SHPO Agency Scoping Meeting
NPS Building, Anchorage, AK
12/20/16

Attendees:

NPS:
Rhea Hood, Archaeologist, NPS National Register of Historic Places Program
Andrew Tremayne, NPS Alaska Regional Office Archaeologist

SHPO:
Mark Rollins, OHA Archaeologist
Alan Depew, OHA Archaeologist

DOT&PF:
Paul Karczmarczyk, AK DOT&PF
Sara Schacher, AK DOT&PF

OTHERS:
Katherine Keith, Remote Solutions
John Baker, Remote Solutions
Sara Lindberg, Stantec
Ross Smith, Stantec

DOT&PF provided a brief project summary, review of work completed to date, and opened the meeting up to discuss NPS and SHPO questions, comments, and concerns. The following summarizes the meeting discussion by topic.

Section 106 Process and Impacts to Cultural Resources

Question from Rhea: What is the general approach to impacts to cultural resources? Has this been discussed with the community of Kivalina? What will you do if you find human remains? Has an inadvertent discovery plan been completed for Kivalina?

> Sarah S: Our Standard Contract Provisions will be included in the construction contract documents. That is, if anything in the field is discovered, work would stop, and the contractor would need to contact SHPO, and then proceed as determined. This will be discussed with community of Kivalina during the Section 106 consultation process, and we'd also develop an inadvertent discovery plan.

Mark: It will be important for DOT&PF to identify an appropriate Area of Potential Effect (APE) for consideration by SHPO. While the study area boundary you show is good, an APE could stay the same size or get smaller. SHPO will defer to Tom Gamza (DOT&PF Environmental Analyst/Professionally Qualified Archeologist) to determine if enough work has been done within the resulting APE.

Paul: And we also assume we'll need inadvertent discovery plans in place and require monitoring during any ground disturbance. There is a still a long way to go with the project before we get to that point, and there is still a lot of room for avoidance and minimization. And remember that no NEPA-qualified alternative has been proposed yet, so we have lots of flexibility with design…within engineering parameters of course.

Question from Andrew: What is your project timeline?

Sarah S: We need to start the 106 process with an initiation of consultation letter as soon as possible. We will approach FHWA next month for a Class of Action call, and expect to complete the environmental document next year.

Question from Andrew: Do you anticipate preparing a Memorandum of Agreement (MOA)?

Sarah S: If there is something to mitigate, then we would.

Paul: Any mitigation measures, including an MOA, if needed, would be captured in the construction contract specifications. For example, as Sarah mentioned the inadvertent discovery plan developed during consultation would likely result in an MOA with the Native Village of Kivalina regarding a process to follow should human remains be discovered.

Mark: The DOT Statewide programmatic agreement for handing cultural resources could meet the requirements for this project. This agreement has appendices with templates that help in the development of construction monitoring and inadvertent discovery plans. If a determination of adverse effect was completed for this project it would trigger a need for an MOA. Another option is, if you can't do sufficient identification beforehand, you could do a Programmatic Agreement (PA) with protocols on how to proceed with construction and what would be done if something was encountered. Also, if SHPO was not able to make a finding of effect but wanted to keep the process moving, you could do a PA.

National Historic Landmark (NHL) Boundary/4(f) concerns

DOT&PF provided a brief overview of Section 4(f) and its elements for NPS staff, and conveyed concerns on anticipated actual and potentially perceived impacts to the NHL by NPS and the public.

Question from Sarah S: One of our questions is about the NHL boundary, where it is and how it will affect Section 106 consultation. The SHPO and NPS have two different boundary maps. The AHRS website shows the study area partially within the NHL, but the NPS map shows a different coverage.

Andrew: Based on our map, the whole study area is within the landmark boundary. We can provide SHPO with the latest GIS files for the correct boundary mapping. However, no matter where the boundary is, the NPS position on the project would not change. The Park Service offers technical assistance to SHPO and DOT&PF to ensure any cultural sites within the boundary do not get damaged. It sounds like DOT&PF is doing everything right in your approach. One thing we would like to see is a description of how you will deal with mitigating sites during construction if they are encountered.

Alan: It will depend on if they are contributing sites that are encountered. There might not be any contributing sites within the landmark boundary. Because the entire project is within the

landmark boundary, there will not be a finding of no historic properties effected. Rather, we will be looking at either a finding of adverse effect, or no adverse effect. The question is whether there are resources within that boundary that are being affected.

Mark: The National Historic Landmark is considered a historic property, so you can never have a "no effect" determination, it is either a no adverse or adverse effect.

Section 4f Consultation

Question from Paul: Given the extent of the NHL, there would be no practicable alternative to going through the landmark as it encompasses the entire study area, the community of Kivalina, and the evacuation road terminus. Will the presence of a road necessarily have an adverse effect on the landmark by its own right? For example, in terms of setting, viewshed, historical context?

Mark: DOT&PF will need to do the analysis to determine that there is no alternative to going through the landmark to make sure you are minimizing going through it. There will be a public notice process and the Park Service has final jurisdiction on the Landmark. The NPS will receive consultations for a non-objection for both the 4(f) evaluation and the Section 106 process.

Question from Paul: Any ideas on mitigation?

Alan: Mitigation will be consulting party driven. The Park Service would also be involved in that process.

Andrew: We will bring in Janet Clemens in as a Section 106 reviewer for the Park Service.

Action Items:

- DOT&PF/Remote Solutions/Stantec complete the cultural resources survey report
- Depending on consultation &/or proposed routing differences, consider add'l 2017 field survey effort.

Kivalina Evacuation and School Site Access Road Project Update
Project Number: 0002384/NFHWY00162
OHA/NPS Section 106 Meeting
Stantec Office, Anchorage, AK
July 10, 2017

ATTENDEES

State of Alaska Office of History and Archaeology: Shina Duvall, Mark Rollins; **National Park Service**: Rhea Hood; **NANA**: Jeff Nelson; **DOT&PF**: Paul Karczmarczyk, Jonathan Hutchinson, Tom Gamza, Amy Sumner; **Remote Solutions**: John Baker; **Stantec**: Sara Lindberg, Ross Smith.

DOT&PF provided a project overview and update on the preliminary design progress, project components, EA alternative being evaluated, and the plan for completing geotechnical drilling at material sites. Stantec provided a summary of the cultural resource survey work completed to date, and the level of coverage for the project components being evaluated in the EA. The team discussed an approach for completing a separate Section 106 process for the geotechnical drilling program for the Proposed project.

The team discussed potential findings of effects outcomes and the tradeoff between completing more cultural resource survey work now, or completing a phased approach Memorandum of Agreement (MOA) now, so the Section 106 process could be completed and the EA could move forward. OHA said that there is nothing precluding them from continuing to consult on Section 106 during or after the EA is complete, but DOT&PF expressed the anticipation that FHWA would likely require the Section 106 process be completed before the Draft EA was released for public comment.

The team agreed that if more field work was warranted, it would be better to complete that quickly now, rather than hold off and go through an MOA process. Tom Gamza will review the survey work completed to date with Ross Smith and make a determination whether additional field work is warranted prior to Findings, and follow up with OHA and NPS.

TAKE AWAY NEAR TERM TASKS

- **TASK:** DOT&PF, NPS, and OHA will meet to discuss the extent of field work needed, if any, and articulate a path forward before August 1st.
- **TASK:** Tom to send NPS and OHA the revised Cultural Resources report for review and comment.
- **TASK:** Jeff Nelson, NANA should be appraised of all helicopter work on NANA lands planned for the fall. Paul will coordinate locally in Kotzebue for any Title 9 permitting requirements for the survey efforts.
- **TASK**: Rhea will coordinate internally at the Park Service on the 4(f) call and possible *De Minimis* finding.

TAKE AWAY LONG TERM TASKS

- **TASK**: Agency site visits are schedule for mid-August. Team to check on availability and travel authorizations.

Kivalina Evacuation and School Site Access Road Project Update
Project Number: 0002384/NFHWY00162
DOT&PF, OHA/SHPO, NPS Section 106 Coordination Meeting
NPS Regional Office, Anchorage, AK
August 2, 2017

ATTENDEES

State of Alaska Office of History and Archaeology: Judith Bittner, Shina Duvall, Alan DePew; **National Park Service**: Rhea Hood; **DOT&PF**: Tom Gamza; **Stantec**: Ross Smith.

DOT&PF provided large-scale maps of the APE and stated that the purpose of the meeting was to develop a consensus regarding the survey approach and priorities for subsurface testing. Stantec provided verbal description of locations within possible material sources for additional subsurface investigations and described proposed sampling methods:

- pedestrian survey of revised alignment between K-Hill and the floodplain
- soil probe testing to characterized sediments and determine permafrost elevation,
- shovel testing in settings with increased potential for near-surface or buried archaeological resources, such as elevated landforms above the flood plain (terrace edges and pingos), and riverine landforms (levees along current and relic channel margins)

The team agreed to the proposed survey strategy and DOT&PF requested a mark-up copy of the APE maps from Stantec illustrating the proposed survey and subsurface sampling areas that were presented and discussed in the meeting.

The team discussed potential findings of effects outcomes and whether NPS had faced similar situations for transportation projects proposed within National Historic Landmarks (NHL). DOT&PF and NPS agreed to review projects that had previously been proposed and completed in archaeological NHLs to determine if there was precedent for findings following negative surveys efforts.

The team agreed to coordinate sending agency representatives to Kivalina to visit the project area during the archaeological field investigations proposed in mid-August.

TAKE AWAY NEAR TERM TASKS

- **TASK:** Stantec to provide APE maps with proposed survey areas to DOT&PF to distributed to NPS, SHPO.
- **TASK:** Rhea Hood will request travel authorization from NPS to visit the project area during archaeological field investigations in mid-August.
- **TASK:** OHA to request travel authorization to send staff (Mark Rollins) to Kivalina to visit the project area during archaeological field investigations in mid-August.
- **TASK:** Rhea will review project outcomes in other NHLs to determine if there is precedent for NPS findings in a similar situation.

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Transportation and Public Facilities

Northern Region
Design and Engineering Services
Preliminary Design and Environmental Section

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2237
Toll free: 800-451-2363
Fax: 907-451-5126

In Reply Refer To:
Kivalina Evacuation and School Site Access Road
Federal/State Project No. 0002384/NFHWY00162
Consultation Initiation

August 7, 2017

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) is proposing to construct an evacuation road between Kivalina Island and a site on Kisimigiuqtuq Hill (K-Hill) (Figure 1). The project location is legally described in Table 1 below:

Table 1: Project Location

Section(s)	Township	Range	Meridian	USGS Quad
1, 2, 10, 11, 15, 16, 21	027N	026W	Kateel River	Noatak C-5
19. 20, 29, 30, 31	028N	026W	Kateel River	Noatak C-5
25, 26, 35, 36	029N	025W	Kateel River	Noatak C-5

Consultation is being conducted in accordance with the 2014 *Programmatic Agreement...for the Federal-Aid Highway Program in Alaska.* For purposes of the National Historic Preservation Act, we are initiating this consultation with you to assist us in identifying historic properties that may be affected by the proposed project.

Project Description
The proposed project origin would be at the City of Kivalina and the project terminus would be at K-Hill which is the evacuation site selected by the community. Originally three routes were

under consideration for the evacuation road location within the initial project Study Area. This has now been reduced to two potential route alignments which are currently being evaluated within the Preliminary Area of Potential Effect shown on Figure 1. Common to all route alternatives are the following actions:

- Construction of a causeway across the lagoon that may incorporate different hydrological openings including bridge(s), culvert(s), or both.
- Construction of an all-season gravel access road between Kivalina Island and the K-Hill evacuation site. The road would be designed to accommodate both general purpose and emergency evacuation vehicles over a two-way road with shoulders, multiple turnouts, and safe side slopes that may include guard rails and other safety features.
- Testing, analysis and development of material locations proximate to potential routes within the Preliminary APE to determine their feasibility and evaluate environmental impacts of their development (Figures 1-5).

Preliminary Area of Potential Effect (APE)

The Preliminary APE encompasses the direct footprint of the project, including two alternative route alignments, staging areas, and potential material sources that are variously located on NANA Regional Corporation, City of Kivalina, and DOT&PF-managed lands. The final APE will be defined after comments are received from your agency and other consulting parties.

Identification Efforts

A search of the Alaska Heritage Resources Survey (AHRS) database identified one site within the Preliminary APE which is described in table 2 below:

Table 2. AHRS Site Located within the Study Area

Site Number	Site Name	Site Description	Determination of Eligibility?
NOA-00042	Cape Krusenstern Archaeological District National Monument (NHL)	This district covers over 2 million acres, extending along the beach 8 miles and varying in width from 1-3 miles. 114 parallel marine beach ridges, formed at an average of 60 years each, are the main features. 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. Near the beach ridges, on unglaciated uplands, are two older sites dated from BP 11,000-6,000. The lower Noatak Valley, an important avenue between the coast and the interior for millennia, contains a number of archaeological sites. The villages of Noatak and Kivalina are within the district. The number of sites listed here includes only those cited as "important sites" in the Final Environmental Statement on Cape Krusenstern National Monument published in 1974. Other reports break down these major sites into many others. Includes	National Register Listed 05/03/1974

		NOA-00002, NOA-00078, NOA-00138, and NOA-00139.	

A literature review identified sixteen reports describing the results of cultural resource surveys conducted from the 1970s through 2016 within the initial Study Area. There are known archaeological and historical resources within the community of Kivalina south of the project origin, and south of the Wulik River mouth outside of the Study Area; however, no resources have been identified inland of Kivalina Lagoon within the Preliminary APE. The Preliminary APE is located within the boundaries of the Cape Krusenstern Archaeological District National Historic Landmark (NOA-00042). In January 2016, an archaeological predictive model was developed for the Study Area, and an archaeological survey of alternative route alignments and proposed material sites was conducted in September-October 2016. This field investigation involved pedestrian survey and subsurface testing at potentially sensitive locations identified in the predictive model and during the pedestrian survey along the three routes originally under consideration. The results of the field investigation are included in the *Kivalina Evacuation and School Site Access Road* report produced by Stantec for DOT&PF (Attachment 1). Testing locations along the abandoned northern route are shown on Figure 1. The entire northern route is shown on Figure one of Appendix D of the report. No archaeological sites or historic properties were identified along the three alternative routes, or within the material sites that were defined at that time.

DOT&PF intends to send a cultural resource survey team in the summer of 2017 to conduct addition fieldwork within the preliminary APE. The results of this work will be provided to the State Historic Preservation Officer and National Park Service for review upon its completion.

Under the Alaska Historic Roads Programmatic Agreement Interim Guidance, a group of Alaska roads has been identified which are being treated as eligible for the National Register of Historic Places (NRHP). This project does not affect any of these roads.

Consultation Efforts

The following consulting parties are being contacted regarding this project: the Alaska 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; 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 corrections and/or additions to the contact list, I can be reached at the address above, by telephone at 907-451-5293, or by e-mail at *thomas.gamza@alaska.gov*.

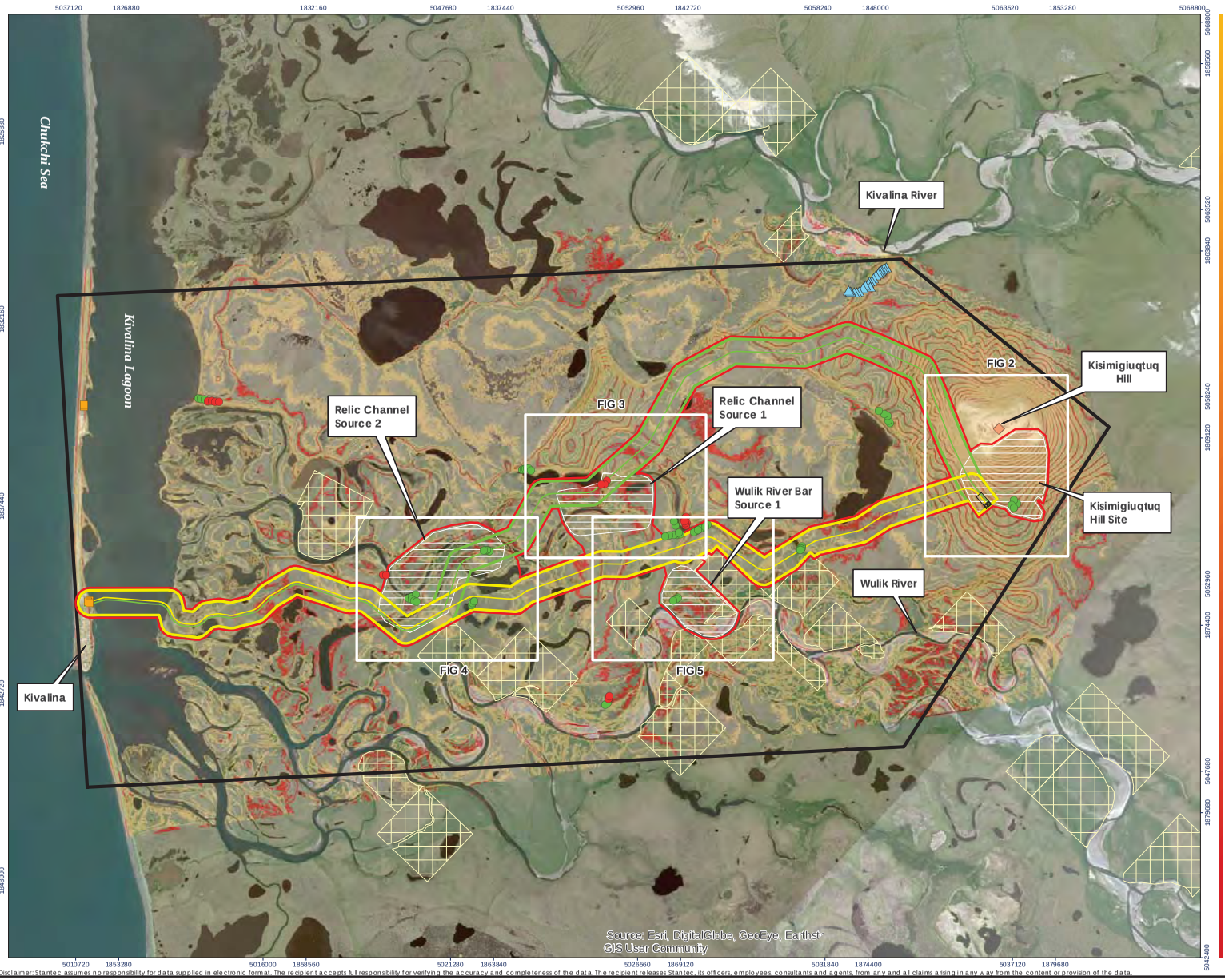
We request your input on our proposal so that we can incorporate your concerns into project development. Your timely response will greatly assist our compliance efforts and the preparation of any required environmental documentation. For that purpose, we request that you respond within thirty days of your receipt of this correspondence.

Sincerely,

Thomas A. Gamza
Cultural Resource Specialist-Archaeologist (PQI)
State of Alaska DOT&PF, Northern Region

Figure 1: Location and Vicinity Map
Figures 2-5 Proposed Material Site Investigation APE
Attachment 1: OHA Coversheet and Report: *Kivalina Evacuation and School Site Access Road*

Electronic cc w/ enclosures:
Michael Cain, FHWA Alaska Division, Northern Region Area Engineer
Jonathan Hutchinson, P.E., DOT&PF Northern Region, Project Manager
Paul Karczmarczyk, DOT&PF Northern Region, Environmental Impact Analyst
Brett Nelson, DOT&PF Northern Region, Regional Environmental Manager
Kathy Price, DOT&PF, Statewide Cultural Resources Manager
Amy Sumner, DOT&PF Statewide Environmental NEPA Manager



Legend

- Study Area
- Area of Potential Effect (APE)
- Southern Route - 7.7 miles
- Combined Route B - 8.9 Miles
- Potential Material Source
- Native Allotments
- Shovel Test Probe - Local
- Shovel Test Probe - Probability
- Assessed Feature
- Soil Probe
- Test Unit

0 0.4 0.8 Miles

1:47,520 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016

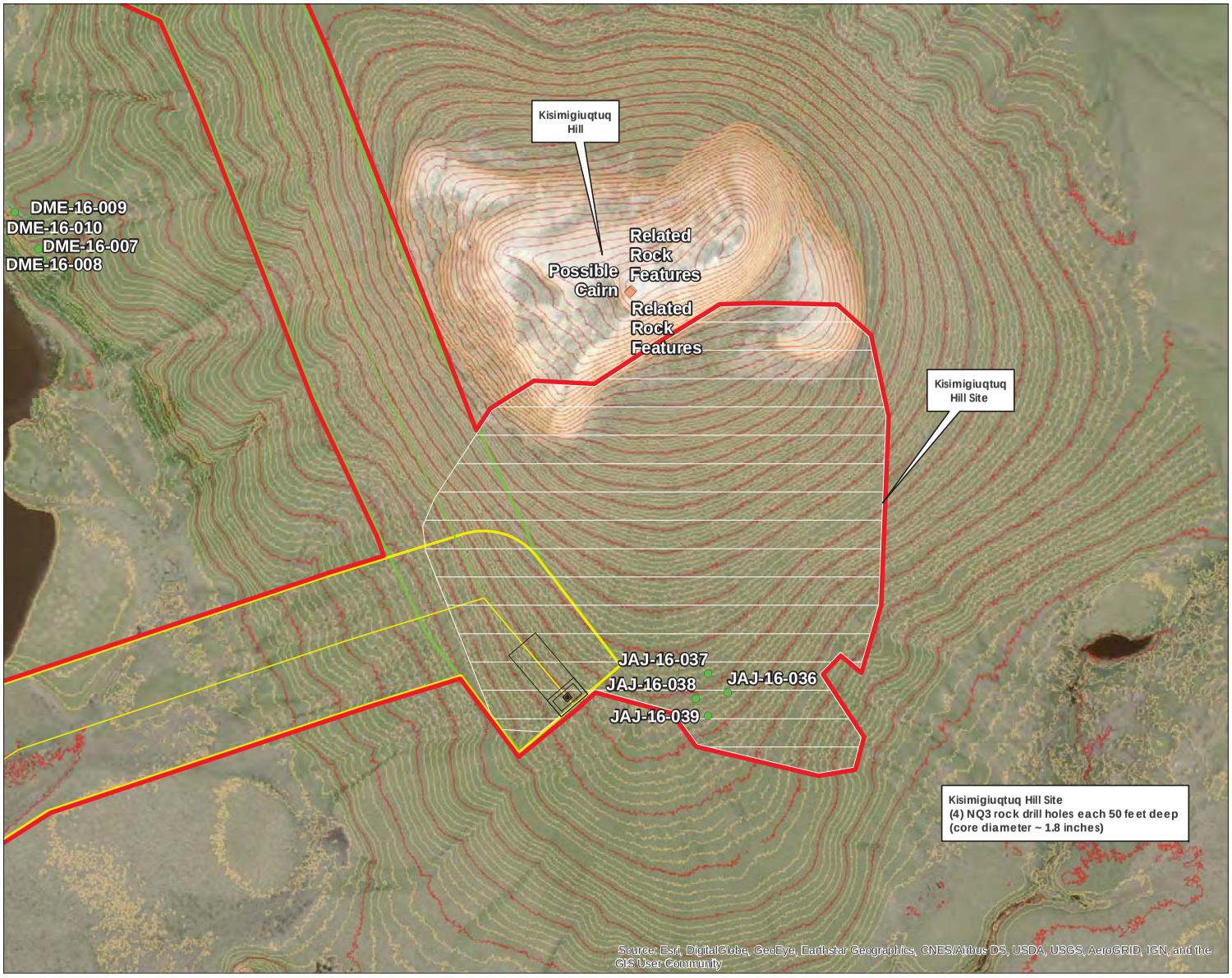
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Area of Potential Effect - Overview

DATE: August, 2017

FIGURE **1**



Legend

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- Soil Probe
- Test Unit

0 600 1,200 Feet

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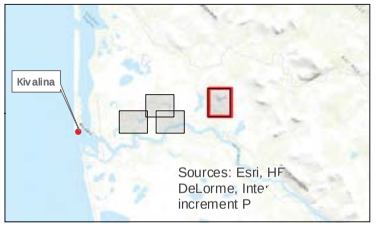
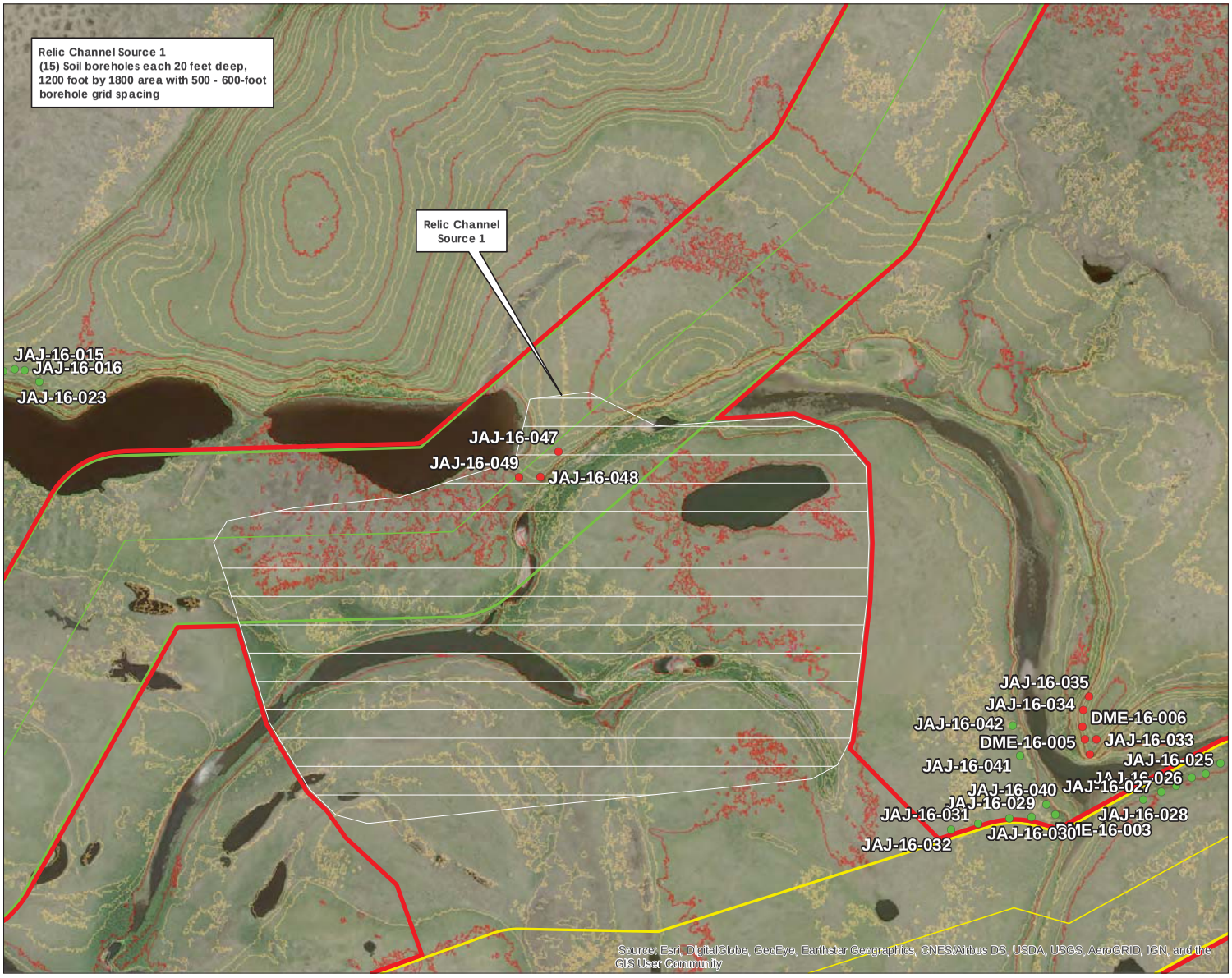


STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Area of Potential Effect

DATE: August, 2017 | FIGURE **2**



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- Test Unit

0 475 950 Feet

1:7,200 (At original document size of 11x17)

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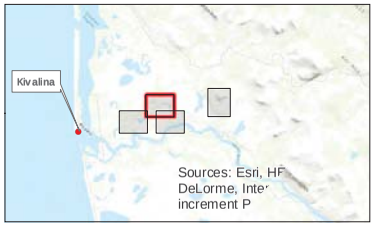
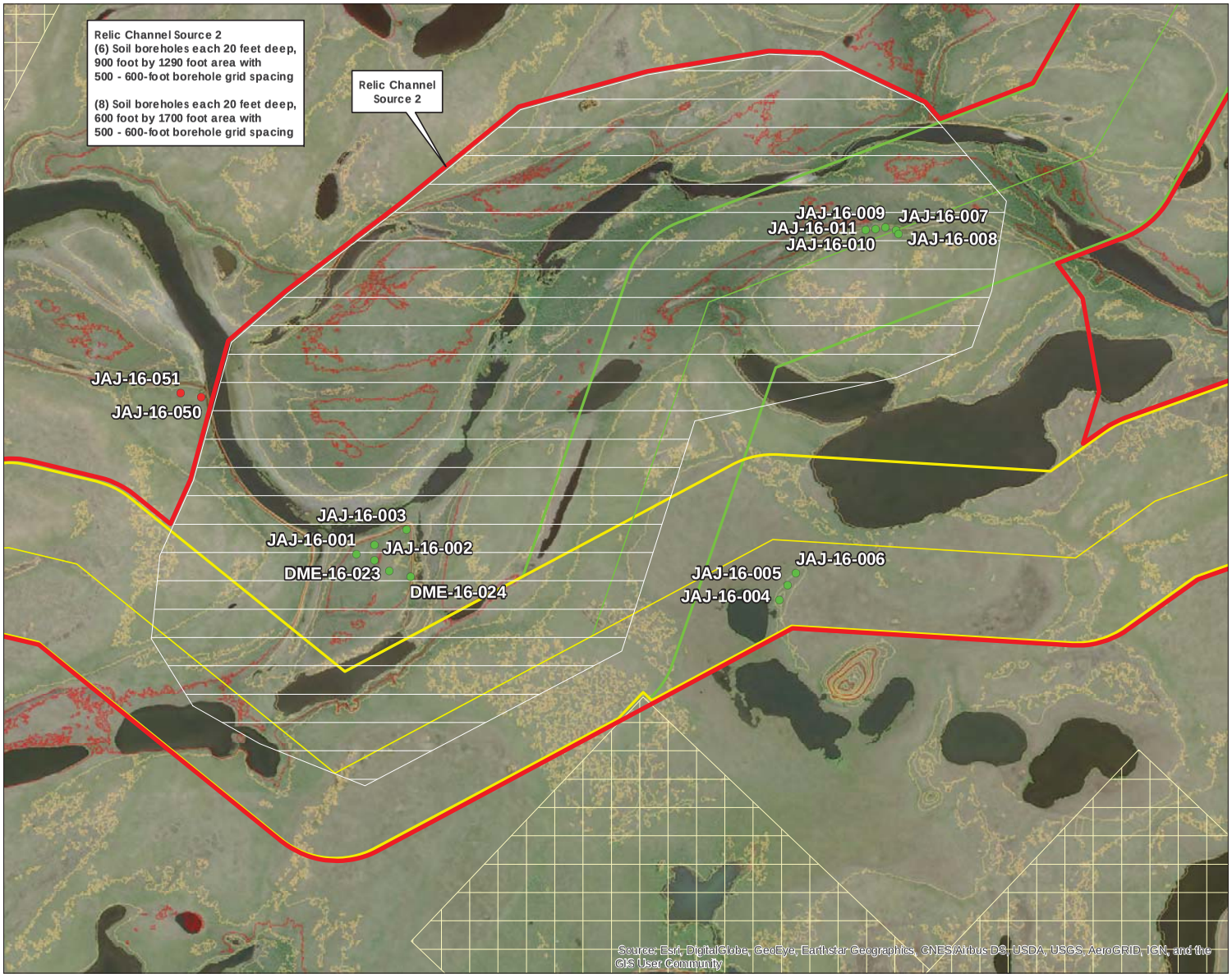


STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Area of Potential Effect

DATE: August, 2017 | FIGURE **3**



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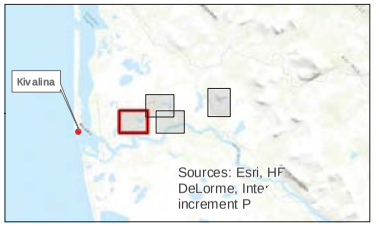
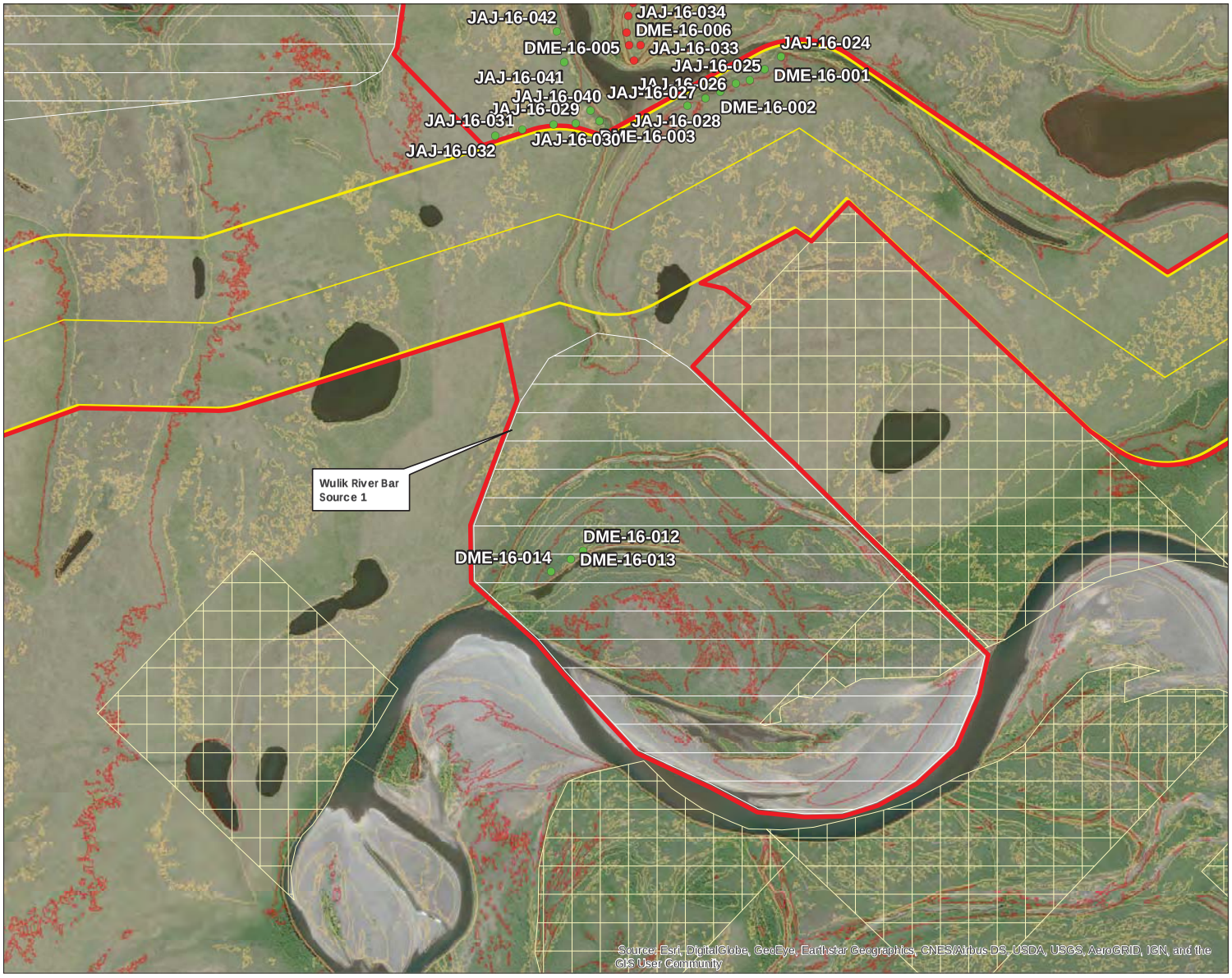


STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Area of Potential Effect

DATE: August, 2017 | FIGURE **4**



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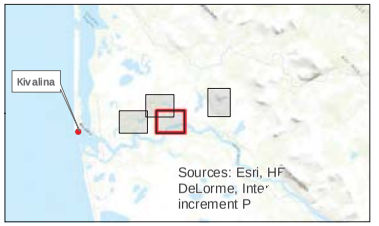

STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Area of Potential Effect

DATE: August, 2017 | FIGURE **5**

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Transportation and Public Facilities

Northern Region
Design and Engineering Services
Preliminary Design and Environmental Section

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2237
Toll free: 800-451-2363
Fax: 907-451-5126

In Reply Refer To:
Kivalina Evacuation and School Site Access Road
Federal/State Project No. 0002384/NFHWY00162
Consultation Initiation

August 7, 2017

Bert Frost
Regional Director
Alaska Regional Office
National Park Service
240 West 5th Avenue
Anchorage, AK 99501

Dear Mr. Frost:

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Consultation is being conducted in accordance with the 2014 *Programmatic Agreement...for the Federal-Aid Highway Program in Alaska.* For purposes of the National Historic Preservation Act, we are initiating this consultation with you to assist us in identifying historic properties that may be affected by the proposed project.

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		"important sites" in the Final Environmental Statement on Cape Krusenstern National Monument published in 1974. Other reports break down these major sites into many others. Includes NOA-00002, NOA-00078, NOA-00138, and NOA-00139.	

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Under the Alaska Historic Roads Programmatic Agreement Interim Guidance, a group of Alaska roads has been identified which are being treated as eligible for the National Register of Historic Places (NRHP). This project does not affect any of these roads.

Consultation Efforts

The following consulting parties are being contacted regarding this project: the Alaska 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; 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 corrections and/or additions to the contact list, I can be reached at the address above, by telephone at 907-451-5293, or by e-mail at *thomas.gamza@alaska.gov*.

We request your input on our proposal so that we can incorporate your concerns into project development. Your timely response will greatly assist our compliance efforts and the preparation of any required environmental documentation. For that purpose, we 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

Figure 1: Location and Vicinity Map
Figures 2-5 Proposed Material Site Investigation APE

Electronic cc w/ enclosures:
Michael Cain, FHWA Alaska Division, Northern Region Area Engineer
Jonathan Hutchinson, P.E., DOT&PF Northern Region, Project Manager
Paul Karczmarczyk, DOT&PF Northern Region, Environmental Impact Analyst
Brett Nelson, DOT&PF Northern Region, Regional Environmental Manager
Kathy Price, DOT&PF, Statewide Cultural Resources Manager
Amy Sumner, DOT&PF Statewide Environmental NEPA Manager

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Transportation and Public Facilities

Northern Region
Design and Engineering Services
Preliminary Design and Environmental Section

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2237
Toll free: 800-451-2363
Fax: 907-451-5126

In Reply Refer To:
Kivalina Evacuation and School Site Access Road
Federal/State Project No. 0002384/NFHWY00162
No Historic Properties Adversely Affected
ATTENTION: This finding contains no DOE's

September 19, 2017

Ms. Judith E. 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) has assumed the responsibilities of the Federal Highway Administration under 23 U.S.C.§ 326, and is proposing to construct a safe, reliable, all-season evacuation road between the community of Kivalina and a site on Kisimigiuqtuq Hill (K-Hill) (Figure 1). The Kivalina Evacuation and School Site Access Road (the Project) location is legally described in Table 1 below:

Table 1: Project Location

Section(s)	Township	Range	Meridian	USGS Quad
1, 2, 10, 11, 15, 16, 21	027N	026W	Kateel River	Noatak C-5
19. 20, 29, 30, 31	028N	026W	Kateel River	Noatak C-5
25, 26, 35, 36	029N	025W	Kateel River	Noatak C-5

Consultation for this project is being conducted in accordance with the 2014 *Programmatic Agreement... for the Federal-Aid Highway Program in Alaska.* The DOT&PF, acting as a Federal agency, finds no adverse effect on historic properties 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 Description

The proposed Project origin is at the City of Kivalina, located on the southeast tip of the barrier island located between the Chukchi Sea (Arctic Ocean) and Kivalina Lagoon (Figure 1). The project terminus is located on the mainland across the Kivalina Lagoon approximately six miles northeast at a community selected evacuation site on K-Hill. A range of route alternatives were considered within the project Study Area. This has now been reduced to two potential route alignments, the Combined Route B and the Southern Route, which are currently being considered as the Area of Potential Effect shown on Figure 2. Common to both route alternatives are the following actions:

- Construction of a 3,200-foot long causeway across the lagoon that may incorporate different hydrological openings including bridge(s), culvert(s), or both.
- Construction of an all-season two-way 24-foot wide gravel access road, either 7.7 miles or 8.9 miles long depending on the route selected, between Kivalina Island and the desired K-Hill evacuation site. Road construction would be within a 300-foot right-of-way (ROW) and include shoulders, multiple turnouts and 3:1 side slopes that may include guard rails and other safety features.
- Testing, analysis and development of material locations proximate to potential routes within the APE to determine their feasibility and evaluate environmental impacts of their development (Figures 2-6).

Area of Potential Effect (APE)

Potential direct and indirect effects were considered prior to the creation of the proposed APE. The APE, as presented, is a 2000-foot corridor encompasses the direct footprint of the project, including two alternative route alignments, staging areas, and potential material sites that are located on variously managed lands and allows for in-field construction adjustments. One final route APE will be defined with the completion of the environmental assessment.

The Kivalina Evacuation and School Site Access Road project would provide Kivalina residents a safe and reliable evacuation route in the event of a catastrophic storm or ocean surge, allowing evacuees to temporarily mobilize to safe refuge at an assembly site on K-Hill. This site is also identified by the Northwest Arctic Borough School District, and approved by the community, as a preferred new location for the community school. If constructed in the future, the school could augment the undeveloped evacuation site by serving as a full-service community emergency shelter with all-season support capabilities. No other viable potential future actions are identified at this time. While community relocation has been discussed for some time, it is not considered reasonably foreseeable. At present, the community supports construction of an evacuation road due to the immediate threat of storm events.

Kivalina relies on the currently existing airstrip adjacent to the city for a majority of its transportation and outside goods. Currently, DOT&PF has a project, Kivalina Airport Erosion Control (Z638720000), which is planning to construct a runway embankment erosion control

feature. Initiation of Consultation letters were sent in February of 2017 for the Kivalina Airport Erosion Control project and a cultural resource investigation was conducted in August of 2017.

Several Alaska Native allotments lie adjacent to the APE and development of these and other private lands may occur consequent to road development. However, the DOT&PF believes that if this were to occur it will be limited to increased access to currently used traditional subsistence locations by people in the community. In addition, material sites developed in support of this project may be further developed or expanded for community use but this expansion will likely occur within the boundary of the current APE.

The potential viewshed effects of the creation of the road were also considered. The DOT&PF believes the minimal elevation and the limited width and method of construction of the road will not have an effect on the current viewshed of open tundra.

In order for the community of Kivalina to consider a future relocation move to a location along the evacuation road, near or at the evacuation road terminus or any place else, extensive planning, land transfers and the securing of significant funding would have to be in place. At this time those actions are neither reasonably foreseeable nor considered a cumulative impact of the proposed project. The DOT&PF does not believe that this action would be directly caused by the Project

Identification Efforts
A search of the Alaska Heritage Resources Survey (AHRS) database identified one site within the APE which is described in table 2 below:

Table 2. AHRS Site Located within the APE

Site Number	Site Name	Site Description	Determination of Eligibility?
NOA-00042	Cape Krusenstern Archaeological District National Monument National Historic Landmark (NHL)	This district covers over 2 million acres, extending along the beach 8 miles and varying in width from 1-3 miles. 114 parallel marine beach ridges, formed at an average of 60 years each, are the main features. 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. Near the beach ridges, on unglaciated uplands, are two older sites dated from BP 11,000-6,000. The lower Noatak Valley, an important avenue between the coast and the interior for millennia, contains a number of archaeological sites. The villages of Noatak and Kivalina are within the district. The number of sites listed here includes only those cited as "important sites" in the Final Environmental Statement on Cape Krusenstern National Monument published in 1974. Other reports break down these major sites into many others. Includes	National Register of Historic Places Listed 05/03/1974

		NOA-00002, NOA-00078, NOA-00138, and NOA-00139.	

A literature review identified sixteen reports describing the results of cultural resource surveys conducted from the 1970s through 2016 within the initial Study Area. There are known archaeological and historical resources within the community of Kivalina south of the project origin, and south of the Wulik River mouth outside of the APE Area; however, no resources have been identified inland of Kivalina Lagoon within the APE. The APE is located within the boundaries of the Cape Krusenstern Archaeological District National Historic Landmark (NOA-00042). In January 2016, an archaeological predictive model was developed for the Study Area, and an archaeological survey of alternative route alignments and proposed material sites was conducted in September-October 2016. This field investigation involved pedestrian survey and subsurface testing at potentially sensitive locations identified in the predictive model and during the pedestrian survey along the three routes originally under consideration. The results of the field investigation are included in the *Kivalina Evacuation and School Site Access Road* report produced by Stantec for DOT&PF (Attachment 1). Testing locations along the abandoned northern route are shown on Figure 2. The entire northern route is shown on Figure 1 of Appendix D of the report. No archaeological sites or historic properties were identified along the three alternative routes, or within the material sites that were defined at that time.

DOT&PF sent a cultural resource survey team in the August of 2017 to conduct addition fieldwork within the APE which now includes potential material site locations. The results of the field investigation are provided in a memo from Stantec entitled *Archaeological Assessment Update for the Kivalina Evacuation and School Site Access Road* (Attachment 2).

Under the Alaska Historic Roads Programmatic Agreement Interim Guidance, a group of Alaska roads has been identified which are being treated as eligible for the National Register of Historic Places (NRHP). This project does not affect any of these roads.

Finding of Effect

NOA-00042 Cape Krusenstern Archaeological District National Monument National Historic Landmark (NHL)

Cape Krusenstern Archaeological District National Historic Landmark (NHL) was designated November 7, 1973 prior to the establishment if the National Monument which was designated on December 1, 1978. Properties designated as National Historic Landmarks are automatically listed in the NRHP CFR36§65.2(b). The primary reason for the designation of both the Archaeological District and National Monument was the overall significance of the region to the understanding the prehistory of the Arctic based on the positive results of archaeological investigations that took place between the late 1940's and early 1970's and continue today. At first, the boundary of the National Monument, which is restricted to the archaeologically rich beach ridge complex, was used for the boundaries for the NHL under National Landmark Criteria 36CFR§64.4(a)(6). It was later expanded to include areas, such as the Project location, which had not had any archaeological investigation conducted at the time.

The archaeological investigations conducted over the 2016 and 2017 field seasons did not result in the identification any elements which contribute to our continuing understanding of the prehistory or history of the Arctic within the Project's APE which is located within the boundaries of NHL. As such, the proposed construction of the Evacuation and School Site Access Road will not have an adverse effect on the integrity of the NHL or its continuing eligibility for the NRHP as no contributing elements have been identified. Due to the Project being located within the NHL boundary the DOT&PF is submitting monitoring and inadvertent discovery plan to be implemented during the continued planning and execution of the Project (Attachment 3). In the event that cultural resources are encountered this plan will be implemented and all identified parties will be contacted. As the proposed routes, the Project terminus and the potential material site locations have only one historic property located within their boundaries the potential effect for all were addressed in one evaluation.

Overall, the DOT&PF has determined that the activities proposed for the Kivalina Evacuation and School Site Access Road Project will result in **no historic properties adversely affected** and seeks the Alaska SHPO's concurrence with this finding of effect.

Section 4(f)
It is the DOT&PF's intent to make a Section 4(f) de minimis impact finding premised on your written concurrence that the project **will not adversely affect** NOA-00042 Cape Krusenstern Archaeological District National Monument National Historic Landmark (NHL).

Consultation Efforts
On July 10, 2017 a meeting was among Agency cultural resource staff. The DOT&PF Northern Region PQI, staff from the Office of History and Archaeology and the Alaska State Historic Preservation Officer (SHPO) and the National Park Service Archaeologist for the National Register of Historic Places Program, Alaska Region. Initiation of Consultation letters were sent out to the identified consulting parties on August 7, 2017. A response was received from the SHPO office on August 22, 2017 stating there was no objection to the proposed Study Area or level of identification at this time (Attachment 4). No other responses to the Section 106 Initiation of Consultation letters were received.

A copy of this letter has been submitted to the National Park Service for their evaluation and recommendation regarding activities within a NHL.

In addition to the Alaska State Historic Preservation Officer (SHPO), other parties being contacted regarding the findings for this project are: the National Park Service (NPS); the Native Village of Kivalina; the City of Kivalina; the Native Village of Noatak; NANA Regional Corporation; the Northwest Arctic Borough; NPS-Western Arctic National Parklands; the Bureau of Indian Affairs (BIA); and the Advisory Council on Historic Preservation.

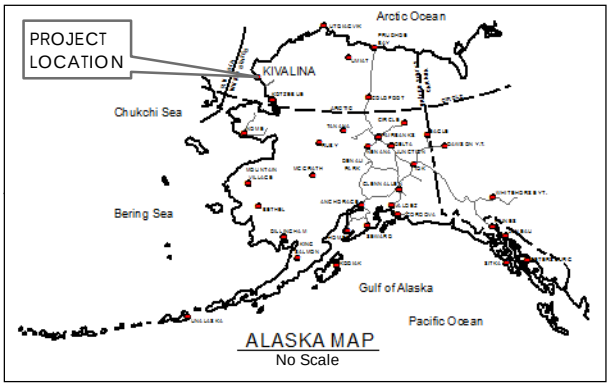
Please direct your concurrence or comments to me at the address above, by telephone at 907-451-5293, or by e-mail at *thomas.gamza@alaska.gov*.

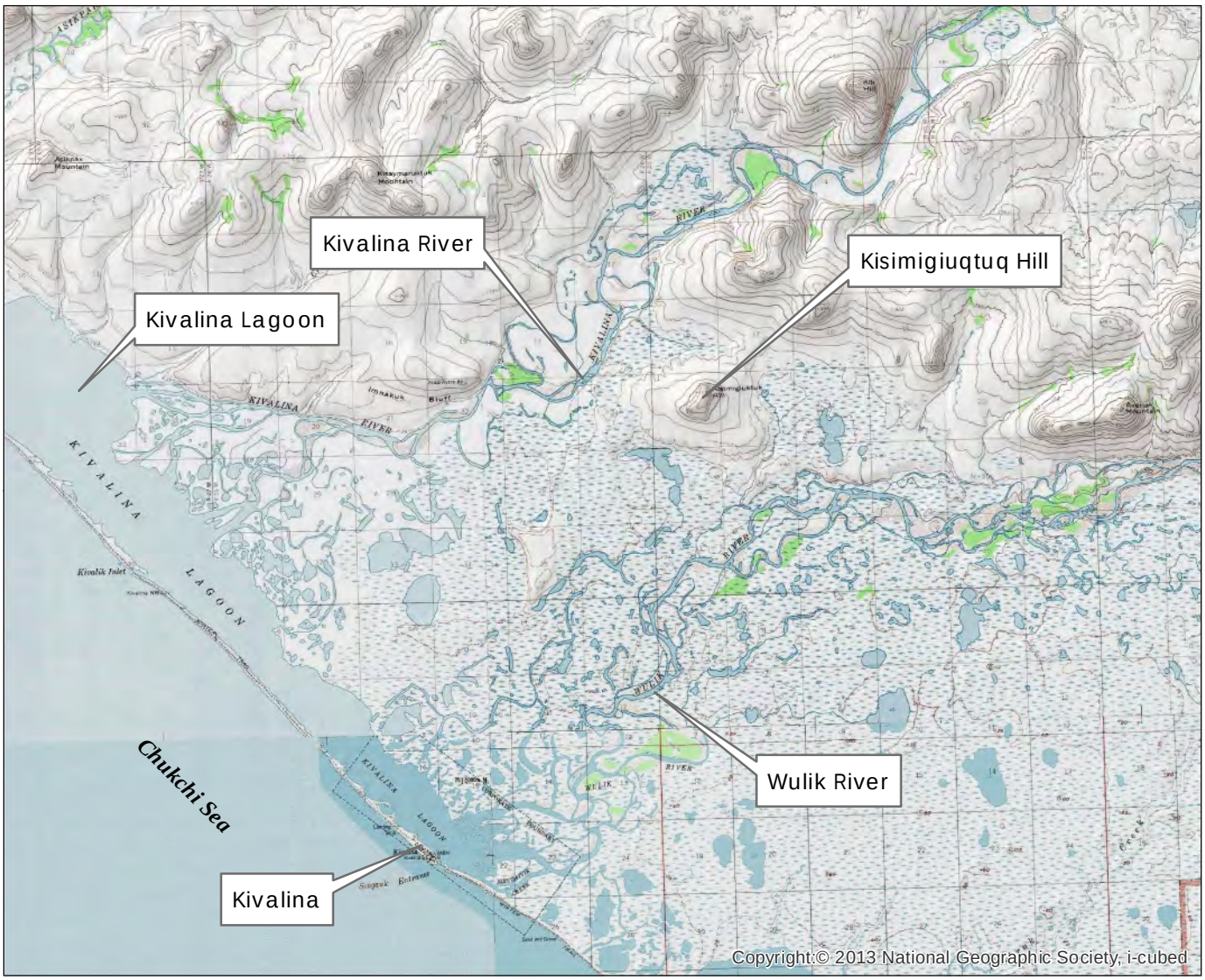
Sincerely,

Thomas A. Gamza
Cultural Resource Specialist-Archaeologist (PQI)
State of Alaska DOT&PF, Northern Region

Figure 1: Location and Vicinity Map
Figure 2: Area of Potential Effect-Overview
Figures 3-6 Proposed Material Site Investigation APE
Attachment 1: Report: *Kivalina Evacuation and School Site Access Road*
Attachment 2: OHA Coversheet and Report: *Archaeological Assessment Update for the Kivalina Evacuation and School Site Access Road*
Attachment 3: Draft Inadvertent Discovery Plan – Kivalina Evacuation and School Site Access Road
Attachment 4: August 22, 2017 response from the SHPO to August 7, 2017 Initiation of Consultation Letter

Electronic cc w/ enclosures:
Michael Cain, FHWA Alaska Division, Northern Region Area Engineer
Jonathan Hutchinson, P.E., DOT&PF Northern Region, Project Manager
Paul Karczmarczyk, DOT&PF Northern Region, Environmental Impact Analyst
Brett Nelson, DOT&PF Northern Region, Regional Environmental Manager
Kathy Price, DOT&PF, Statewide Cultural Resources Manager
Amy Sumner, DOT&PF Statewide Environmental NEPA Manager





Graphics developed by Stantec Consulting Services, Inc.

Project Origin: City of Kivalina,
Kotzebue Recording District,
Section 21, Township 27N, Range 26W,
Kateel River Meridian

Project Terminus: Kisimigiuqtuq Hill,
Section 19, Township 28N, Range 25W
Kateel River Meridian

0 1.25 2.5 5 Miles

1:142,961 (at original document size of 8.5x11)

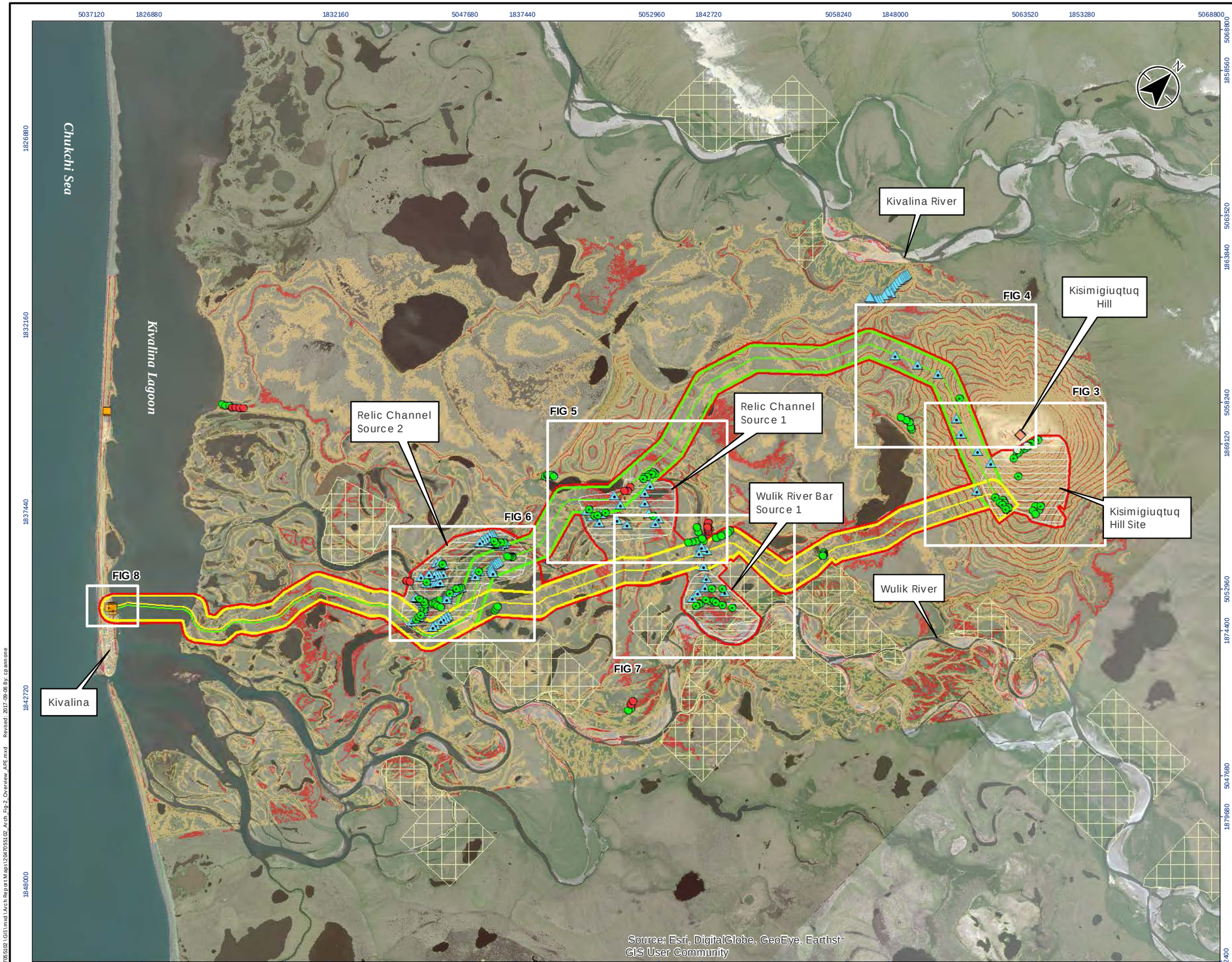
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Location & Vicinity Map

DATE: September, 2017 | FIGURE 1

U:\20470552021GIS\mxd\Section 106\20470552021_Sec106_Fig-1_Loc-Vic_Map.mxd Revised: 2017-09-06 By: cpannone



Legend

- Area of Potential Effect (APE)
- Southern Route - 7.7 miles
- Combined Route B - 8.9 Miles
- Potential Material Source
- Native Allotments

Data Points (2017)

- Bear Den
- Shovel Test Probe
- Soil Probes
- Test Unit

Data Points (2016)

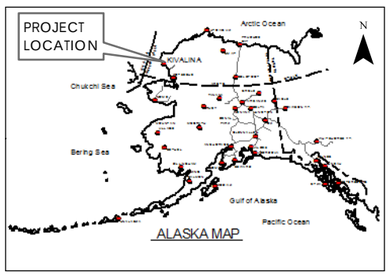
- Shovel Test Probe - Local
- Shovel Test Probe - Probability
- Assessed Feature
- Soil Probe
- Test Unit

0 0.4 0.8 Miles

1:47,520 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016



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

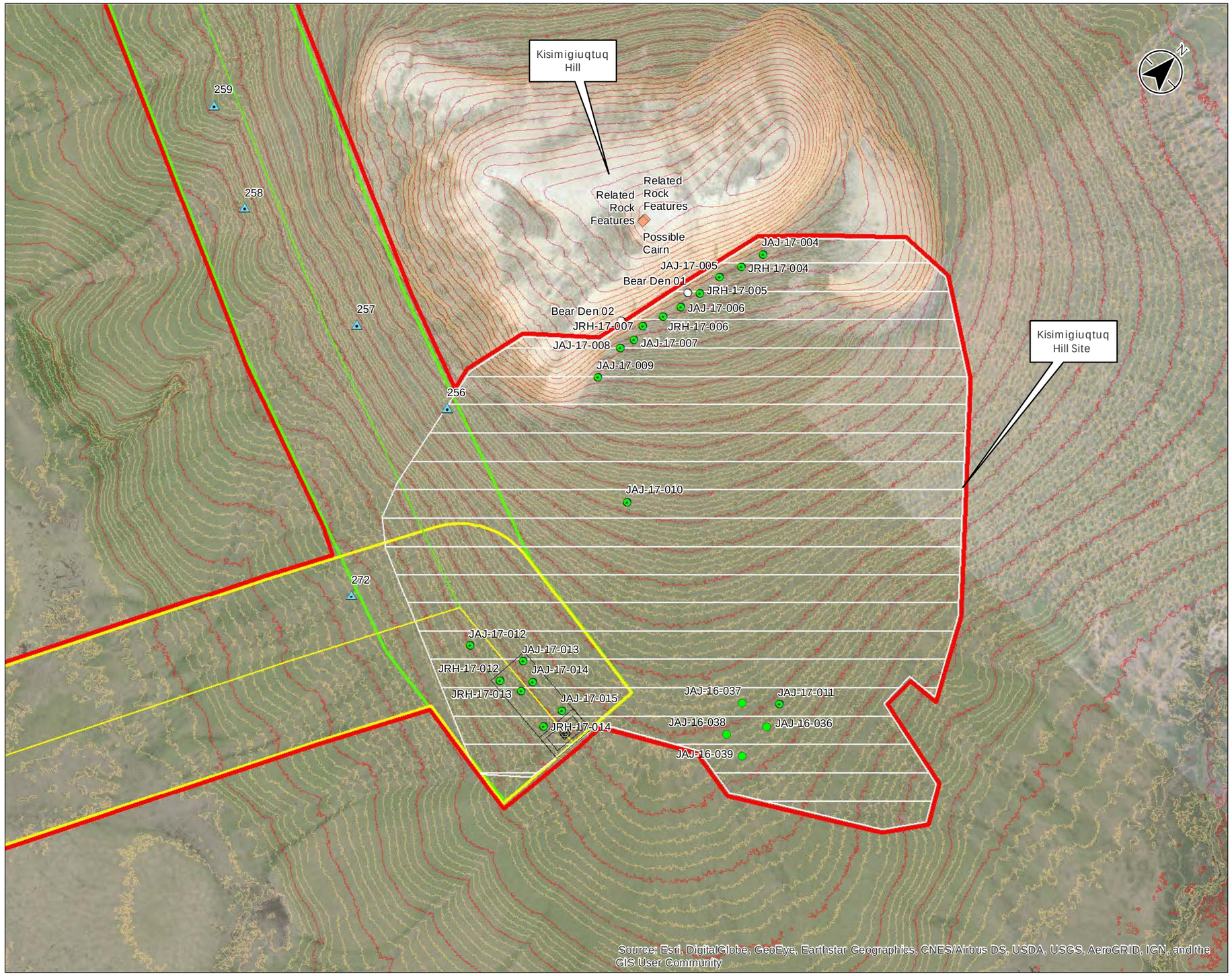
KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Area of Potential Effect - Overview

DATE: September, 2017

FIGURE 2

U:\204705102\GIS\mxd\Arch Report Maps\204705102_Arch_Fig-2_Overview_APE.mxd Revised: 2017-09-06 By: cpammone



Legend

- Area of Potential Effect (APE)
- Southern Route - 7.7 miles
- Combined Route B- 8.9 Miles
- Potential Material Source
- Native Allotments
- Gravel Mounds

Data Points (2017)

- Bear Den
- Shovel Test Probe
- Soil Probes
- Test Unit

Data Points (2016)

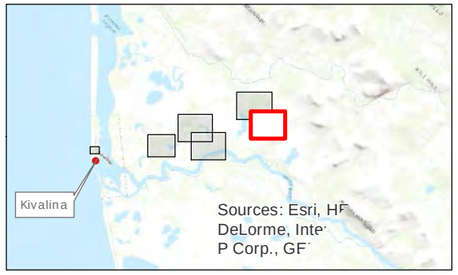
- Shovel Test Probe - Local
- Shovel Test Probe - Probability
- Assessed Feature
- Soil Probe
- Test Unit

0 500 1,000 Feet

1:7,200 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011;' ©AeroMetric Inc., 2013; Digital Globe 2016



Graphics developed by Stantec Consulting Services, Inc.

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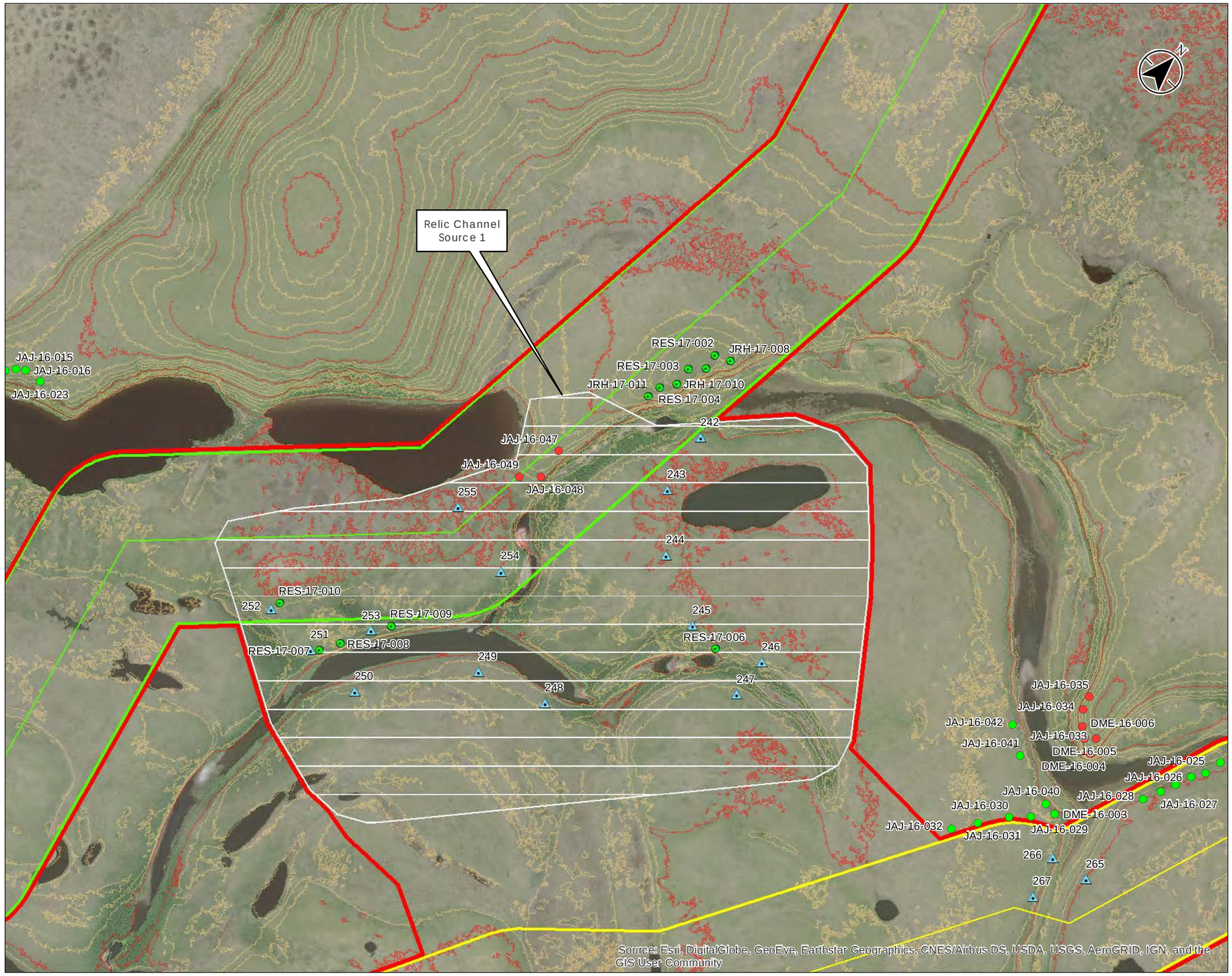
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Kisimigiuqtuq Hill

DATE: September, 2017 | FIGURE 3

U:\2047855102\GIS\mxd\Arch Report Maps\2047855102_Arch_Fig3_Fig-8_Detail.mxd Revised: 2017-09-06 By: cpanmone



Legend

- Area of Potential Effect (APE)
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- Native Allotments
- Gravel Mounds

Data Points (2017)

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- Soil Probes
- Test Unit

Data Points (2016)

- Shovel Test Probe - Local
- Shovel Test Probe - Probability
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- Soil Probe
- Test Unit

0 500 1,000 Feet

1:7,200 (At original document size of 11x17)

Notes

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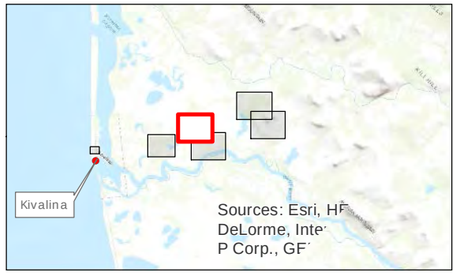

Graphics developed by Stantec Consulting Services, Inc.

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2301 Peger Road Fairbanks, AK 99709

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Relic Channel Source 1

DATE: September, 2017 | FIGURE 4

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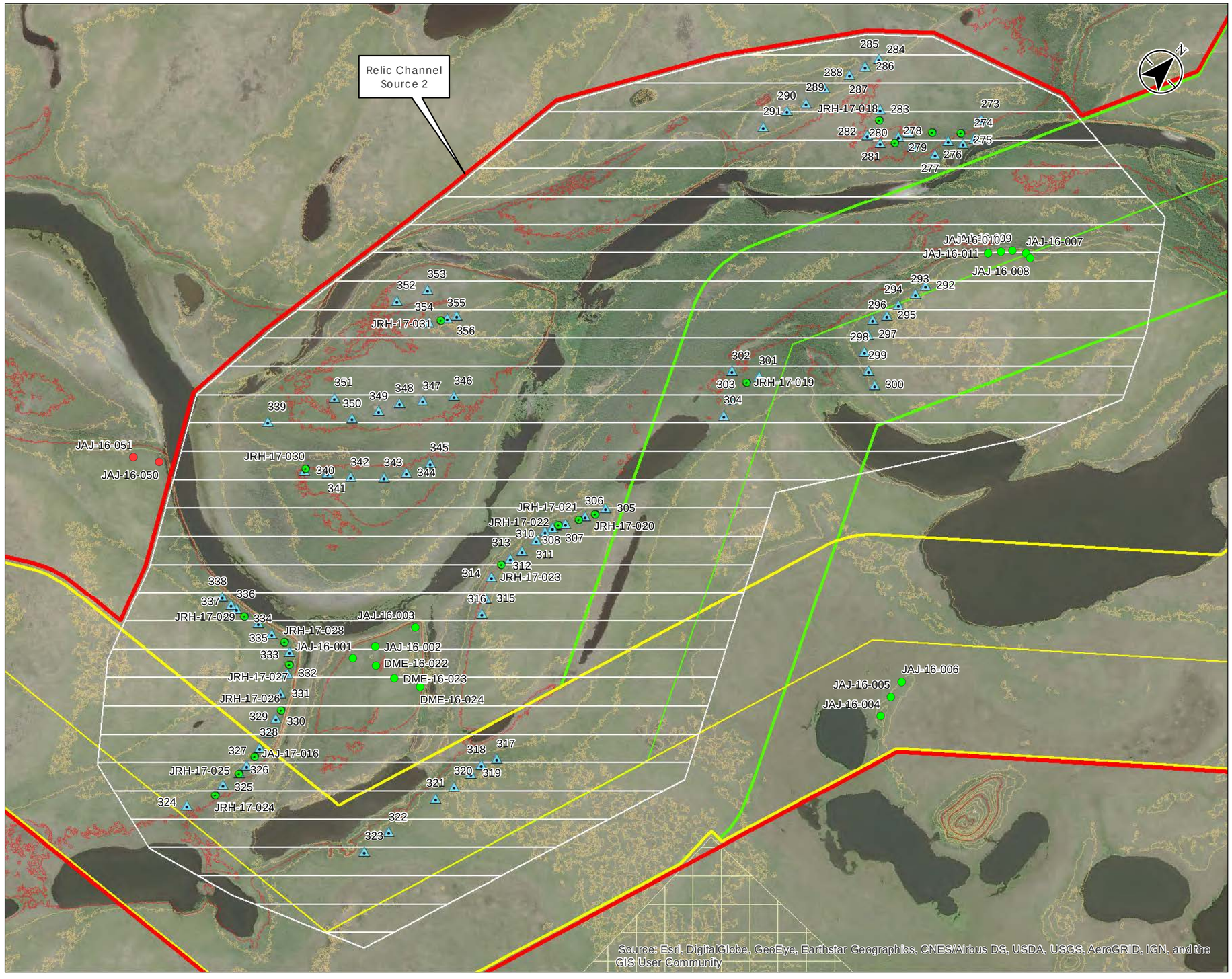

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- Gravel Mounds

Data Points (2017)

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- Shovel Test Probe
- Soil Probes
- Test Unit

Data Points (2016)

- Shovel Test Probe - Local
- Shovel Test Probe - Probability
- Assessed Feature
- Soil Probe
- Test Unit

0 400 800 Feet

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Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
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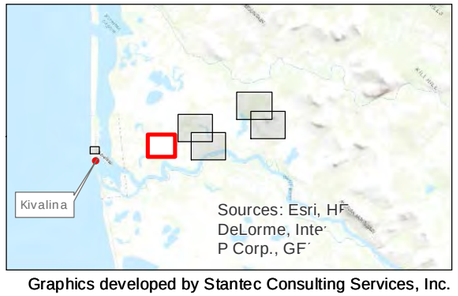

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Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Relic Channel Source 2

DATE: September, 2017 | FIGURE 5

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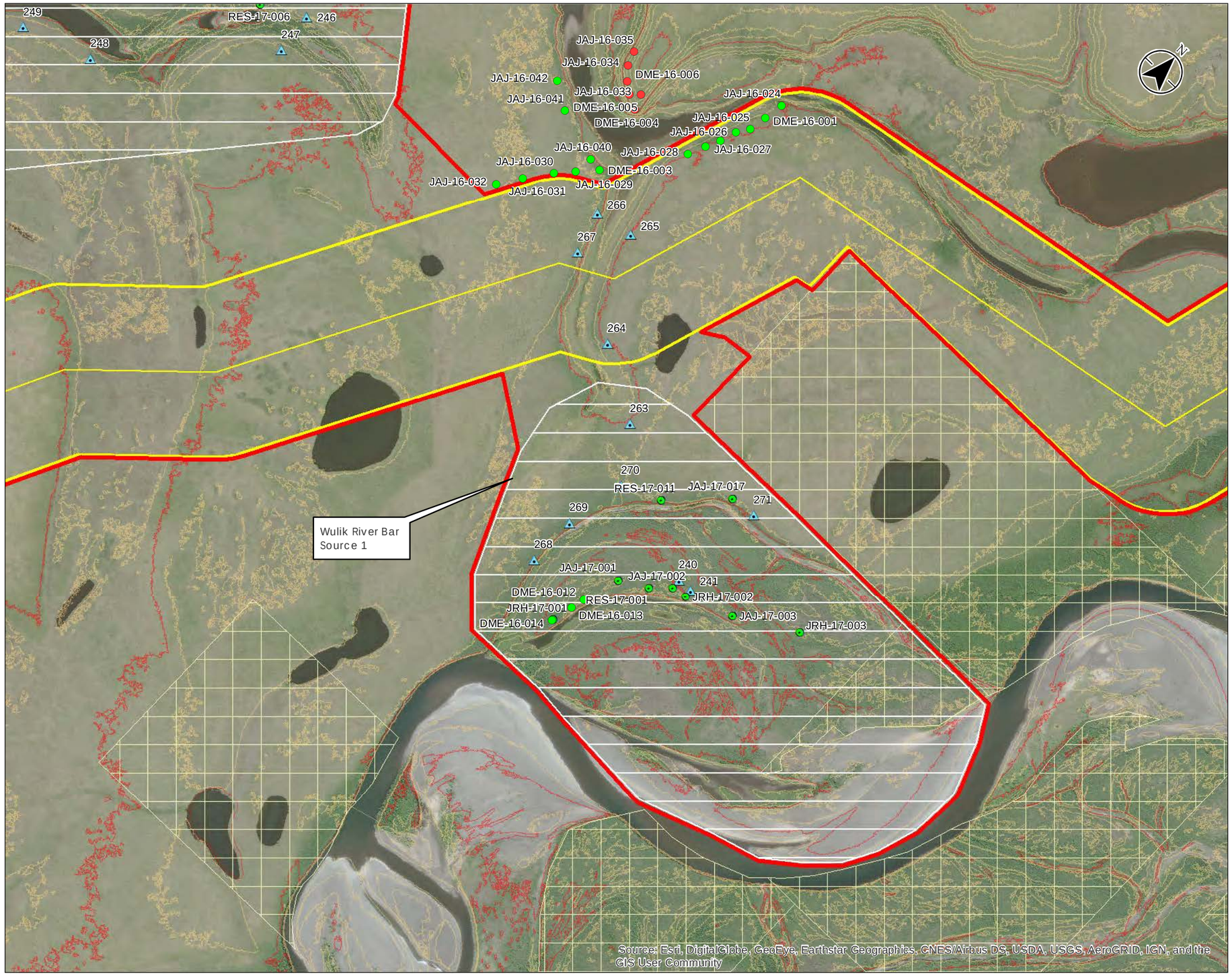

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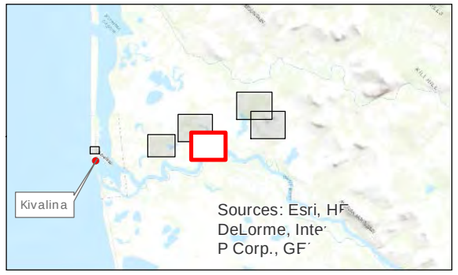

Graphics developed by Stantec Consulting Services, Inc.

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

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Wulik River Bar Source 1

DATE: September, 2017

FIGURE 6

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THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Transportation and Public Facilities

Northern Region
Design and Engineering Services
Preliminary Design and Environmental Section

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2237
Toll free: 800-451-2363
Fax: 907-451-5126

In Reply Refer To:
Kivalina Evacuation and School Site Access Road
Federal/State Project No. 0002384/NFHWY00162
No Historic Properties Adversely Affected
ATTENTION: This finding contains no DOE's

September 19, 2017

Bert Frost, Regional Director
Alaska Regional Office
National Park Service
240 West 5th Avenue
Anchorage, AK 99501

Dear Mr. Frost:

The Alaska Department of Transportation and Public Facilities (DOT&PF) has assumed the responsibilities of the Federal Highway Administration under 23 U.S.C.§ 326, and is proposing to construct a safe, reliable, all-season evacuation road between the community of Kivalina and a site on Kisimigiuqtuq Hill (K-Hill) (Figure 1). The Kivalina Evacuation and School Site Access Road (the Project) location is legally described in Table 1 below:

Table 1: Project Location

Section(s)	Township	Range	Meridian	USGS Quad
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Consultation for this project is being conducted in accordance with the 2014 *Programmatic Agreement... for the Federal-Aid Highway Program in Alaska.* The DOT&PF, acting as a Federal agency, finds no adverse effect on historic properties 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 Description
The proposed Project origin is at the City of Kivalina, located on the southeast tip of the barrier island located between the Chukchi Sea (Arctic Ocean) and Kivalina Lagoon (Figure 1). The project terminus is located on the mainland across the Kivalina Lagoon approximately six miles northeast at a community selected evacuation site on K-Hill. A range of route alternatives were considered within the project Study Area. This has now been reduced to two potential route alignments, the Combined Route B and the Southern Route, which are currently being considered as the Area of Potential Effect shown on Figure 2. Common to both route alternatives are the following actions:

- Construction of a 3,200-foot long causeway across the lagoon that may incorporate different hydrological openings including bridge(s), culvert(s), or both.
- Construction of an all-season two-way 24-foot wide gravel access road, either 7.7 miles or 8.9 miles long depending on the route selected, between Kivalina Island and the desired K-Hill evacuation site. Road construction would be within a 300-foot right-of-way (ROW) and include shoulders, multiple turnouts and 3:1 side slopes that may include guard rails and other safety features.
- Testing, analysis and development of material locations proximate to potential routes within the APE to determine their feasibility and evaluate environmental impacts of their development (Figures 2-6).

Area of Potential Effect (APE)
Potential direct and indirect effects were considered prior to the creation of the proposed APE. The APE, as presented, is a 2000-foot corridor encompasses the direct footprint of the project, including two alternative route alignments, staging areas, and potential material sites that are located on variously managed lands and allows for in-field construction adjustments. One final route APE will be defined with the completion of the environmental assessment.

The Kivalina Evacuation and School Site Access Road project would provide Kivalina residents a safe and reliable evacuation route in the event of a catastrophic storm or ocean surge, allowing evacuees to temporarily mobilize to safe refuge at an assembly site on K-Hill. This site is also identified by the Northwest Arctic Borough School District, and approved by the community, as a preferred new location for the community school. If constructed in the future, the school could augment the undeveloped evacuation site by serving as a full-service community emergency shelter with all-season support capabilities. No other viable potential future actions are identified at this time. While community relocation has been discussed for some time, it is not considered reasonably foreseeable. At present, the community supports construction of an evacuation road due to the immediate threat of storm events.

Kivalina relies on the currently existing airstrip adjacent to the city for a majority of its transportation and outside goods. Currently, DOT&PF has a project, Kivalina Airport Erosion Control (Z638720000), which is planning to construct a runway embankment erosion control

feature. Initiation of Consultation letters were sent in February of 2017 for the Kivalina Airport Erosion Control project and a cultural resource investigation was conducted in August of 2017.

Several Alaska Native allotments lie adjacent to the APE and development of these and other private lands may occur consequent to road development. However, the DOT&PF believes that if this were to occur it will be limited to increased access to currently used traditional subsistence locations by people in the community. In addition, material sites developed in support of this project may be further developed or expanded for community use but this expansion will likely occur within the boundary of the current APE.

The potential viewshed effects of the creation of the road were also considered. The DOT&PF believes the minimal elevation and the limited width and method of construction of the road will not have an effect on the current viewshed of open tundra.

In order for the community of Kivalina to consider a future relocation move to a location along the evacuation road, near or at the evacuation road terminus or any place else, extensive planning, land transfers and the securing of significant funding would have to be in place. At this time those actions are neither reasonably foreseeable nor considered a cumulative impact of the proposed project. The DOT&PF does not believe that this action would be directly caused by the Project

Identification Efforts
A search of the Alaska Heritage Resources Survey (AHRS) database identified one site within the APE which is described in table 2 below:

Table 2. AHRS Site Located within the APE

Site Number	Site Name	Site Description	Determination of Eligibility?
NOA-00042	Cape Krusenstern Archaeological District National Monument National Historic Landmark (NHL)	This district covers over 2 million acres, extending along the beach 8 miles and varying in width from 1-3 miles. 114 parallel marine beach ridges, formed at an average of 60 years each, are the main features. 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. Near the beach ridges, on unglaciated uplands, are two older sites dated from BP 11,000-6,000. The lower Noatak Valley, an important avenue between the coast and the interior for millennia, contains a number of archaeological sites. The villages of Noatak and Kivalina are within the district. The number of sites listed here includes only those cited as "important sites" in the Final Environmental Statement on Cape Krusenstern National Monument published in 1974. Other reports break down these major sites into many others. Includes	National Register of Historic Places Listed 05/03/1974

		NOA-00002, NOA-00078, NOA-00138, and NOA-00139.	

A literature review identified sixteen reports describing the results of cultural resource surveys conducted from the 1970s through 2016 within the initial Study Area. There are known archaeological and historical resources within the community of Kivalina south of the project origin, and south of the Wulik River mouth outside of the APE Area; however, no resources have been identified inland of Kivalina Lagoon within the APE. The APE is located within the boundaries of the Cape Krusenstern Archaeological District National Historic Landmark (NOA-00042). In January 2016, an archaeological predictive model was developed for the Study Area, and an archaeological survey of alternative route alignments and proposed material sites was conducted in September-October 2016. This field investigation involved pedestrian survey and subsurface testing at potentially sensitive locations identified in the predictive model and during the pedestrian survey along the three routes originally under consideration. The results of the field investigation are included in the *Kivalina Evacuation and School Site Access Road* report produced by Stantec for DOT&PF. Testing locations along the abandoned northern route are shown on Figure 2. The entire northern route is shown on Figure 1 of Appendix D of the report. No archaeological sites or historic properties were identified along the three alternative routes, or within the material sites that were defined at that time.

DOT&PF sent a cultural resource survey team in the August of 2017 to conduct addition fieldwork within the APE which now includes potential material site locations. The results of the field investigation are provided in a memo from Stantec entitled *Archaeological Assessment Update for the Kivalina Evacuation and School Site Access Road.*

Under the Alaska Historic Roads Programmatic Agreement Interim Guidance, a group of Alaska roads has been identified which are being treated as eligible for the National Register of Historic Places (NRHP). This project does not affect any of these roads.

Finding of Effect

NOA-00042 Cape Krusenstern Archaeological District National Monument National Historic Landmark (NHL)

Cape Krusenstern Archaeological District National Historic Landmark (NHL) was designated November 7, 1973 prior to the establishment if the National Monument which was designated on December 1, 1978. Properties designated as National Historic Landmarks are automatically listed in the NRHP CFR36§65.2(b). The primary reason for the designation of both the Archaeological District and National Monument was the overall significance of the region to the understanding the prehistory of the Arctic based on the positive results of archaeological investigations that took place between the late 1940's and early 1970's and continue today. At first, the boundary of the National Monument, which is restricted to the archaeologically rich beach ridge complex, was used for the boundaries for the NHL under National Landmark Criteria 36CFR§64.4(a)(6). It was later expanded to include areas, such as the Project location, which had not had any archaeological investigation conducted at the time.

The archaeological investigations conducted over the 2016 and 2017 field seasons did not result in the identification any elements which contribute to our continuing understanding of the prehistory or history of the Arctic within the Project's APE which is located within the boundaries of NHL. As such, the proposed construction of the Evacuation and School Site Access Road will not have an adverse effect on the integrity of the NHL or its continuing eligibility for the NRHP as no contributing elements have been identified. Due to the Project being located within the NHL boundary the DOT&PF is submitting monitoring and inadvertent discovery plan to be implemented during the continued planning and execution of the Project (Attachment 1). In the event that cultural resources are encountered this plan will be implemented and all identified parties will be contacted. As the proposed routes, the Project terminus and the potential material site locations have only one historic property located within their boundaries the potential effect for all were addressed in one evaluation.

Overall, the DOT&PF has determined that the activities proposed for the Kivalina Evacuation and School Site Access Road Project will result in **no historic properties adversely affected** and seeks the Alaska SHPO's concurrence with this finding of effect.

Section 4(f)
It is the DOT&PF's intent to make a Section 4(f) de minimis impact finding premised on your written concurrence that the project **will not adversely affect** NOA-00042 Cape Krusenstern Archaeological District National Monument National Historic Landmark (NHL).

Consultation Efforts
On July 10, 2017 a meeting was among Agency cultural resource staff. The DOT&PF Northern Region PQI, staff from the Office of History and Archaeology and the Alaska State Historic Preservation Officer (SHPO) and the National Park Service Archaeologist for the National Register of Historic Places Program, Alaska Region. Initiation of Consultation letters were sent out to the identified consulting parties on August 7, 2017. A response was received from the SHPO office on August 22, 2017 stating there was no objection to the proposed Study Area or level of identification at this time (Attachment 2). No other responses to the Section 106 Initiation of Consultation letters were received.

A copy of this letter has been submitted to the National Park Service for their evaluation and recommendation regarding activities within a NHL.

In addition to the Alaska State Historic Preservation Officer (SHPO), other parties being contacted regarding the findings for this project are: the National Park Service (NPS); the Native Village of Kivalina; the City of Kivalina; the Native Village of Noatak; NANA Regional Corporation; the Northwest Arctic Borough; NPS-Western Arctic National Parklands; the Bureau of Indian Affairs (BIA); and the Advisory Council on Historic Preservation.

If you wish to comment on this finding, 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

Figure 1: Location and Vicinity Map
Figure 2: Area of Potential Effect-Overview
Figures 3-6 Proposed Material Site Investigation APE

Attachment 1: Draft Inadvertent Discovery Plan – Kivalina Evacuation and School Site Access Road
Attachment 2: August 22, 2017 response from the SHPO to August 7, 2017 Initiation of Consultation Letter

Electronic cc w/ enclosures:
Michael Cain, FHWA Alaska Division, Northern Region Area Engineer
Jonathan Hutchinson, P.E., DOT&PF Northern Region, Project Manager
Paul Karczmarczyk, DOT&PF Northern Region, Environmental Impact Analyst
Brett Nelson, DOT&PF Northern Region, Regional Environmental Manager
Kathy Price, DOT&PF, Statewide Cultural Resources Manager
Amy Sumner, DOT&PF Statewide Environmental NEPA Manager

United States Department of the Interior

NATIONAL PARK SERVICE
Alaska Region
240 West 5th Avenue, Room 114
Anchorage, Alaska 99501

IN REPLY REFER TO
8.A.4 (AKRO-CR)20171002

OCT 0 6 2017

Thomas A. Gamza
State of Alaska DOT&PF, Northern Region
2301 Peger Road
Fairbanks, AK 99709-5316

Subject: Kivalina Evacuation and School Site Access Road. Federal/State Project No. 0002384/NFHWY00162, Section 106 Determination

Dear Mr. Gamza:

Thank you for providing project information for the proposed Kivalina Evacuation and School Site Access Road, Federal/State Project No. 0002384/NFHWY00162. The National Park Service has served 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).

We appreciate the Alaska Department of Transportation and Public Facilities (DOT&PF) providing NPS with the results of the cultural resource assessment survey, accommodating a site visit by NPS archeologist Rhea Hood on August 16, 2017, answering follow-up questions, as well as consulting with other interested parties including the Native Village of Kivalina.

As described, the project consists of building a causeway spanning approximately 0.6 miles across Kivalina Lagoon, constructing a 7.7 to 8.9 mile evacuation road east of Kivalina, and development of up to four different material sites in the same project area. The causeway construction will include pile driving at each abutment and the final bridge design and construction could cause additional ground disturbance near previously recorded sites that are within the Area of Potential Effect (APE). We understand that the two AHRS sites, NOA-00325 and NOA-00327, are documented for human burials and archaeological artifacts respectively and that these sites are within the APE but are over 100 meters away from the western end of the causeway abutment, and therefore the proposed project activity will not harm these sites.

Based on the *Kivalina Evacuation and School Site Access Road Cultural Resources Assessment Report* and the following September 2017 update, and the August 2017 project site visit, we understand that the cultural resources investigations did not reveal any new significant

archeological resources. Since Kivalina was included in the NHL for encompassing "sites evidencing prehistoric occupation," we recognize that there is still the potential for discovery as the project is implemented.

We concur with DOT&PF's finding of "no historic properties adversely affected" (36 CFR 800.5 (b)(1)) conditional to include archaeological monitoring and an Inadvertent Discovery Plan that allows for "reasonable efforts to avoid, minimize or mitigate adverse effects" and that covers post-Section 106 review discoveries of cultural resources.

Given that there is some potential for finding cultural resources and human remains within the NHL, we would appreciate receiving a copy of the Inadvertent Discovery Plan with the specific archaeological monitoring plan, as well as any 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,

Herbert C. Frost, Ph.D.
Regional Director

cc: Rhea Hood, Archeologist, NPS Alaska Region
Jennifer Pederson Weinberger, Cultural Resources Program Manager, NPS Alaska Region
Maija Lukin, Superintendent, Western Arctic Parklands
Mark Rollins, Review and Compliance, Alaska State Historic Preservation Office

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Natural Resources
DIVISION OF PARKS & OUTDOOR RECREATION
Office of History & Archaeology
550 West 7th Ave., Suite 1310
Anchorage, Alaska 99501-3565
Main: 907 269.8721
http://dnr.alaska.gov/parks/oha

SENT BY E-MAIL
DATE 10/9/17

October 9, 2017

File No.: 3130-1R FHWA/ 2016-01460

Subject: Kivalina Evacuation and School Site Access Road, 0002384/ NFHWY00162

Thomas Gamza
Department of Transportation & Public Facilities
2301 Peger Road
Fairbanks, AK 99709-5316

Dear Mr. Gamza,

The Alaska State Historic Preservation Office (AK SHPO) received your letter (dated September 19, 2017) and reports, titled *Kivalina Evacuation and School Site Access Road Cultural Resources Assessment Report* and the *Archaeological Assessment Update for the Kivalina Evacuation and School Site Access Road,* on September 24, 2017. Following our review of the documentation provided, pursuant to Section 106 of the National Historic Preservation Act, we concur with your finding of **no historic properties adversely affected** for the subject project. Furthermore, we concur that the project will not adversely affect NOA-00042 Cape Krusenstern Archaeological District National Monument National Historic Landmark (NHL). This concurrence is conditional to include archaeological monitoring and an Inadvertent Discovery Plan for the subject project. We look forward to receiving the final draft of the Inadvertent Discovery Plan for our records.

Please note that 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 comment letter does not end the 30-day review period provided to other consulting parties. Should unidentified cultural 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.

The AK SHPO appreciates your consultation efforts for the subject project and for including a staff member in a site visit on August 16, 2017. Please contact Mark Rollins at 269-8722 or mark.rollins@alaska.gov if you have any questions or if we can be of further assistance.

Sincerely,

Joan M. Antonsson

Judith E. Bittner
Deputy State Historic Preservation Officer

JEB:mwr

Cc: Rhea Hood, National Park Service, rhea_hood@nps.gov

From:	Sumner, Amy L (DOT)
To:	Nelson, Brett D (DOT)
Cc:	Karczmarczyk, Paul F (DOT)
Subject:	SEO Sect. 4(f) No Use Determination FW: Kivalina Evac Road Sec 4f Applicability - AK Maritime NWR -updated
Date:	Tuesday, December 19, 2017 3:20:50 PM
Attachments:	image001.png Kivalina Evac Rd Sec 4f app AK MNWR.PDF

Brett,

4(f) Applicability Determination

Based on the information provided in the attached, I agree that the **Kivalina Evacuation and School Site Access Road (NFHWY00162)** project will not use/affect the Alaska Maritime National Wildlife Refuge, a Section 4(f) protected resource.

"The proposed project will not use this Section 4(f) property. DOT&PF has determined that Section 4(f) does not apply."

Please ensure a copy of this email is placed in the project file.

Thank you,

Amy L. Sumner
NEPA Program Manager
Statewide Environmental Office
Dept. of Transportation and Public Facilities
907-465-2985

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by DOT&PF pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated November 3, 2017 and executed by FHWA and DOT&PF

From: Nelson, Brett D (DOT)
Sent: Monday, December 18, 2017 4:10 PM
To: Sumner, Amy L (DOT) <amy.sumner@alaska.gov>
Cc: Karczmarczyk, Paul F (DOT) <paul.karczmarczyk@alaska.gov>
Subject: Kivalina Evac Road Sec 4f Applicability - AK Maritime NWR -updated

Hi Amy,

Please review the attached updated applicability.

Thanks,
Brett

From: Nelson, Brett D (DOT)
Sent: Monday, December 18, 2017 3:52 PM
To: Sumner, Amy L (DOT) <amy.sumner@alaska.gov>
Cc: Karczmarczyk, Paul F (DOT) <paul.karczmarczyk@alaska.gov>
Subject: Kivalina Evac Road Sec 4f Applicability - AK Maritime NWR

Hi Amy,

Can you please review the attached project Section 4(f) applicability for the AK Maritime NWR. Let me know if you have questions or need additional information.

Thanks,
Brett

Brett Nelson
Northern Region Environmental Manager
Alaska Dept. of Transportation & Public Facilities
Office (907)451-2238
Fax (907)451-5126

Kivalina Evacuation and School Site Access Road

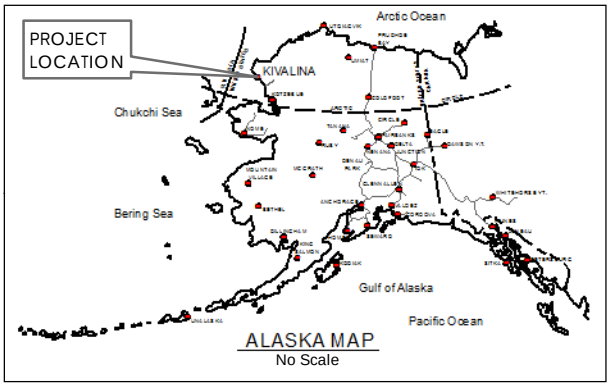
Project Number: 0002384/NFHWY00162
Section 4(f) Applicability

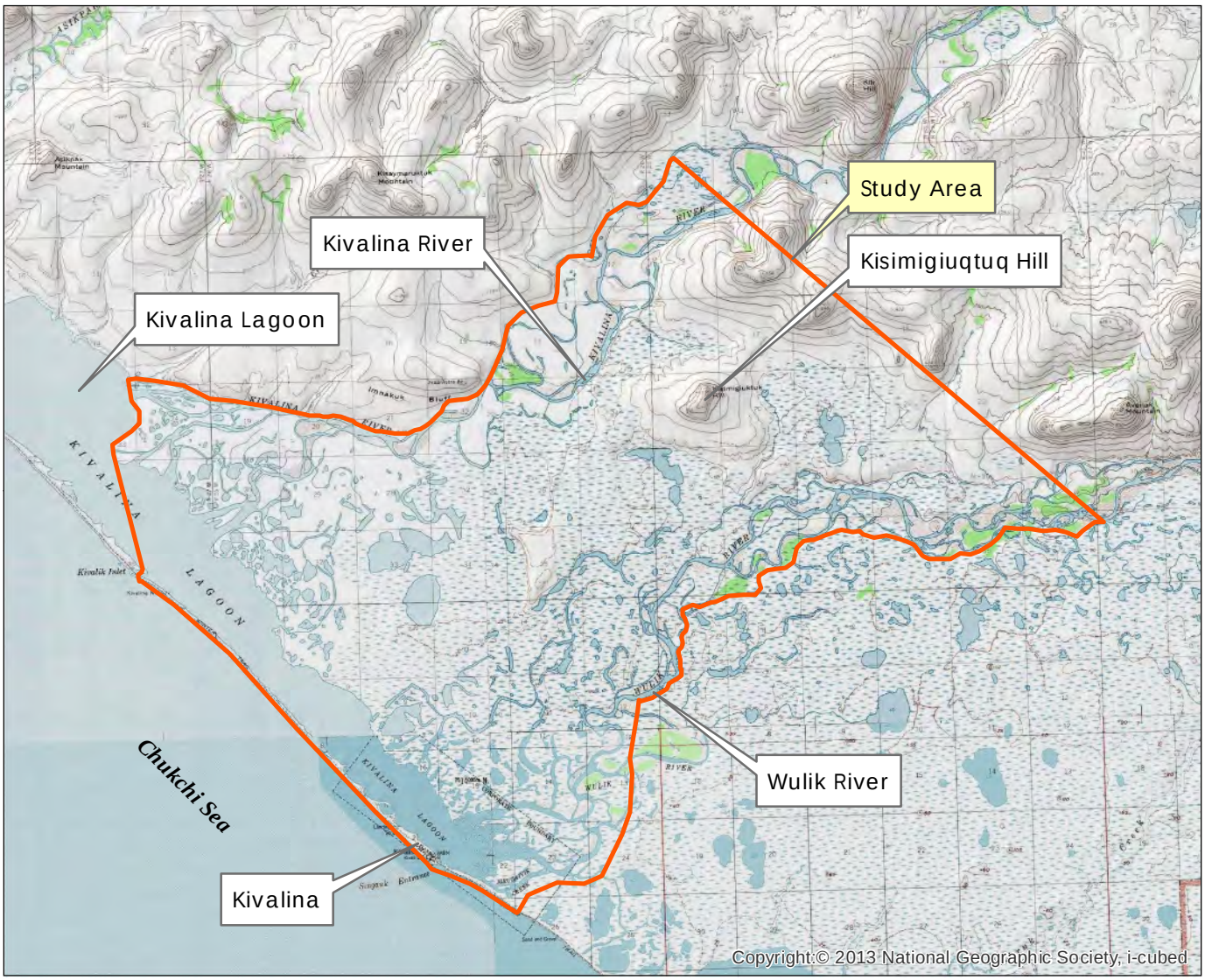
The Alaska Department of Transportation and Public Facilities (DOT&PF) has assumed the responsibilities of the Federal Highway Administration under 23 U.S.C. 327, and is proposing to construct an approximately 6-10 mile long evacuation and school site access road from the City of Kivalina, Alaska (Figure 1) to Kisimigiuqtuq Hill (K-Hill). The proposed route would originate at the City of Kivalina, cross Kivalina Lagoon with a causeway including a bridge section and culverts, route alternatives would then continue through areas of tidally-influenced lowland and tundra wetlands before meeting up again and terminating at a lower southwest slope of K-Hill located NNE of the community (Figure 2). In the project vicinity are a couple small island components of the Alaska Maritime National Wildlife Refuge (Refuge), a Section 4(f) property. The closest project route alternative is approximately 0.4 miles from the Refuge (Figure 3), which is located across the Wulik River and on the east end of the Kivalina Lagoon.

Description/Function: The Refuge was established in 1980 as part of ANILCA to conserve marine mammals, seabirds and other migratory birds, and the marine resources upon which they rely.

Ownership/Access: The Refuge is managed by the United States Fish and Wildlife Service. Overall, the Refuge covers 3.4 million acres and includes units in the Chukchi Sea, Bering Sea, Gulf of Alaska, Aleutian Islands, and the Alaska Peninsula. The Refuge islands in the project vicinity are approximately 75 acres in size and owned by the NANA Regional Corporation.

Effects: The project scope is limited to work within the proposed route alternatives, and as such, no work will occur within the Section 4(f) property. As a result this project will not cause any direct effects to the Refuge. Proposed project alternatives are not anticipated to result in noise or vibration impacts to the Refuge as construction work would be temporary and the community of Kivalina is about the same distance from the Refuge with existing noise generated from vehicular and aircraft traffic. There would be a change in the aesthetic nature of land where the proposed project alternative would be constructed, but the nearest distance to the refuge would be 0.4 miles away. No ecological intrusions would result from proposed project alternatives as the alternatives are not within the Refuge itself. Migratory bird impacts would be reduced by scheduling construction and vegetation clearing activities to occur outside of important nesting periods. The proposed project alternatives would not have a permanent incorporation, adverse temporary occupancy, or constructive use of the Refuge; therefore, the Kivalina Evacuation and School Site Access Road project would not result in a use of the Alaska Maritime National Wildlife Refuge.





Graphics developed by Stantec Consulting Services, Inc.

DRAFT

Project Origin: City of Kivalina,
Kotzebue Recording District,
Section 21, Township 27N, Range 26W,
Kateel River Meridian

Project Terminus: Kisimigiuqtuq Hill,
Section 19, Township 28N, Range 25W
Kateel River Meridian

0 1.25 2.5 5 Miles

1:142,961 (at original document size of 8.5x11)

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

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Location & Vicinity Map

DATE: September, 2017

FIGURE **1**

U:\204705102\GIS\mxd\41\204705102_41_Fig-1_Loc-Vic_Map.mxd Revised: 2017-09-05 By: cpannone

DRAFT

Kivalina River

Kisimigiuqtuq Hill

K-Hill Site 100 Acres

Relic Channel Source 1 50 Acres

Relic Channel Source 2 40 Acres

Wulik River

Wulik River Bar Source 1 40 Acres

Kivalina Lagoon

Chukchi Sea

Kivalina Barrier Island

Lagoon Crossing

Lagoon Crossing

Kivalina

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Community Proposed Alternatives
- Community Combined Route A
- Northern Route - 9.5 miles*
- Southern Route - 7.7 miles*
- Combined Route B - 8.9 miles*
- Dismissed Material Sites
- Potential Material Source Areas**
- Water Crossings

* Proposed Routes are centered within ~1000 ft corridor.

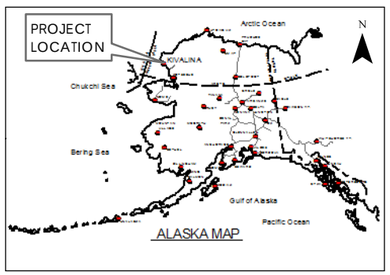
** Material sources would be developed within identified areas.

0 0.6 1.2 Miles

1:75,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016



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

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Alternatives Considered

DATE: September, 2017

FIGURE **2**

U:\204785102\GIS\mxd\alt\20470951102_4F_Fig-2_Road-Mat-Site-Alts.mxd Revised: 2017-08-05 By: cpannone

Alaska Maritime NWR - Chukchi Sea Unit parcel near Kivalina

Figure 3

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Transportation and Public Facilities

Northern Region
Design and Engineering Services
Preliminary Design and Environmental Section

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2237
Toll free: 800-451-2363
Fax: 907-451-5126

In Reply Refer To:
Kivalina Evacuation and School Site Access Road
Federal/State Project No. 0002384/NFHWY00162
Addendum: NOA-00325 & NOA-00327

December 29, 2017

Ms. Judith E. 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) has assumed the responsibilities of the Federal Highway Administration (FHWA) under 23 U.S.C. 327, and is proposing to construct a safe, reliable, all-season evacuation road between the community of Kivalina and a site on Kisimigiuqtuq Hill (K-Hill) (Figure 1). The Kivalina Evacuation and School Site Access Road (the Project) location is legally described in Table 1 below:

Table 1: Project Location

Section(s)	Township	Range	Meridian	USGS Quad
1, 2, 10, 11, 15, 16, 21	027N	026W	Kateel River	Noatak C-5
19. 20, 29, 30, 31	028N	026W	Kateel River	Noatak C-5
25, 26, 35, 36	029N	025W	Kateel River	Noatak C-5

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by DOT&PF pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated November 3, 2017, and executed by FHWA and DOT&PF.

The proposed project origin is at the City of Kivalina, located on the southeast tip of the barrier island located between the Chukchi Sea (Arctic Ocean) and Kivalina Lagoon (Figure 1). The project terminus is located on the mainland across the Kivalina Lagoon approximately six miles northeast at a community selected evacuation site on K-Hill.

Background

On September 19, 2017 DOT&PF made a finding of No Historic Properties Adversely Affected (Findings Letter) for the proposed project. The National Park Service (NPS) responded on October 6, 2017 (Attachment 1); their response included the detail that two Alaska Heritage Resources Survey (AHRS) sites, NOA-00325 and NOA-00327, appear to be within the proposed project's Area of Potential Effect (APE) but that they would not be affected by the project's activities. These two sites did not appear in the Findings Letter or in the SHPO concurrence to those Findings on October 9, 2017 (Attachment 2). This informational update addresses those two sites. DOT&PF's original finding of effect has not changed.

NOA-00325 and NOA-00327

Both NOA-00325 and NOA-00327 were assigned AHRS numbers in the 2005 *Cultural Resources Survey of Proposed Sewage and Water Systems Improvements in Kivalina, Alaska* report by Northern Land Use Research, Inc.

Table 2. Site Details from AHRS Database

Site Number	Site Name	Site Description	Determination of Eligibility?
NOA-00325	KIV-HR-05	Informant reported to cultural resource investigators in 2005 that human remains discovered during construction of house in 1990s. No information regarding their handling.	No Determination of Eligibility
NOA-00327	NOA-00327	Local informant reported to other cultural resource investigators in 2004 that artifacts had been found near location when they were a child.	No Determination of Eligibility

The site numbers were assigned based on information from local residents who recalled that in one location (NOA-00325) human remains had been found during the construction of a house foundation in the 1970s. It was not determined at the time of the 2005 interview if the remains were left in place or re-interred in the current cemetery. Another local resident noted that at the other location (NOA-00327) artifacts had been found and he played with them when he was a child. Based on these interviews, AHRS numbers were assigned for the general locations. As of 2017, no extant physical materials have been identified in relation to either of these two sites.

This letter is being sent to acknowledge that the AHRS-reported locations for NOA-00325 and NOA-00327 are within the APE for this project. Their omission from the Findings Letter (September 19, 2017) was a clerical error and DOT&PF does not anticipate ground disturbing activities in the reported site locations that would require a re-evaluation of the finding of effect for this project. The APE for the project was drawn broadly to evaluate potential visual effects as well as any ground disturbing effects the project may have on the surrounding land and community. The AHRS-reported locations for these two sites are on the periphery of the APE where visual effects were the greatest concern due to the presence of standing structures. No ground-disturbing activity is planned for the portions of the APE containing these sites.

Section 4(f)
As stated in in September 19, 2017 Findings Letter it is the DOT&PF's intent to make a Section 4(f) *de minimis* impact finding for this project and NOA-00042, the Cape Krusenstern National Historic Landmark. Section 4(f) findings have not changed with the inclusion of NOA-00325 and NOA-00327 within the project APE as there will be no use of these sites.

Inadvertent Discovery Plan
Additionally, please find attached the finalized Inadvertent Discovery Plan (Attachment 3), as stipulated and required, for this project as presented in the DOT&PF Findings Letters of September 19, 2017 and a full set of the figures for the entire project APE (Figures 1-8).

Consultation Summary
On July 10, 2017 a meeting among Agency cultural resource staff was held in Anchorage. The DOT&PF Northern Region Cultural Resource Specialist-Archaeologist PQI, Office of History and Archaeology staff, the Alaska SHPO, and the NPS Archaeologist for the NRHP Program, Alaska Region were in attendance. Initiation of Consultation letters were sent out to the identified consulting parties on August 7, 2017. A response was received from the SHPO office on August 22, 2017 stating there was no objection to the proposed Study Area or level of identification. No other responses to the Section 106 Initiation of Consultation letters were received. A response to the September 19, 2017 Findings Letter was received from the NPS on October 6, 2017 and SHPO concurrence with the DOT&PF findings was received on October 9, 2017. No responses were received from the other consulting parties.

In addition to the Alaska State Historic Preservation Officer (SHPO), other parties being contacted with this informational update and Inadvertent Discovery Plan for this project are: the National Park Service (NPS); the Native Village of Kivalina; the City of Kivalina; the Native Village of Noatak; NANA Regional Corporation; the Northwest Arctic Borough; NPS-Western Arctic National Parklands; and the Bureau of Indian Affairs (BIA).

Please direct your questions or comments to me at the address above, by telephone at 907-451-5293, or by e-mail at *thomas.gamza@alaska.gov*.

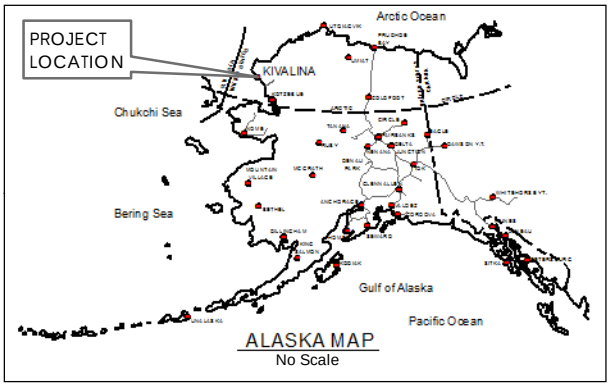
Sincerely,

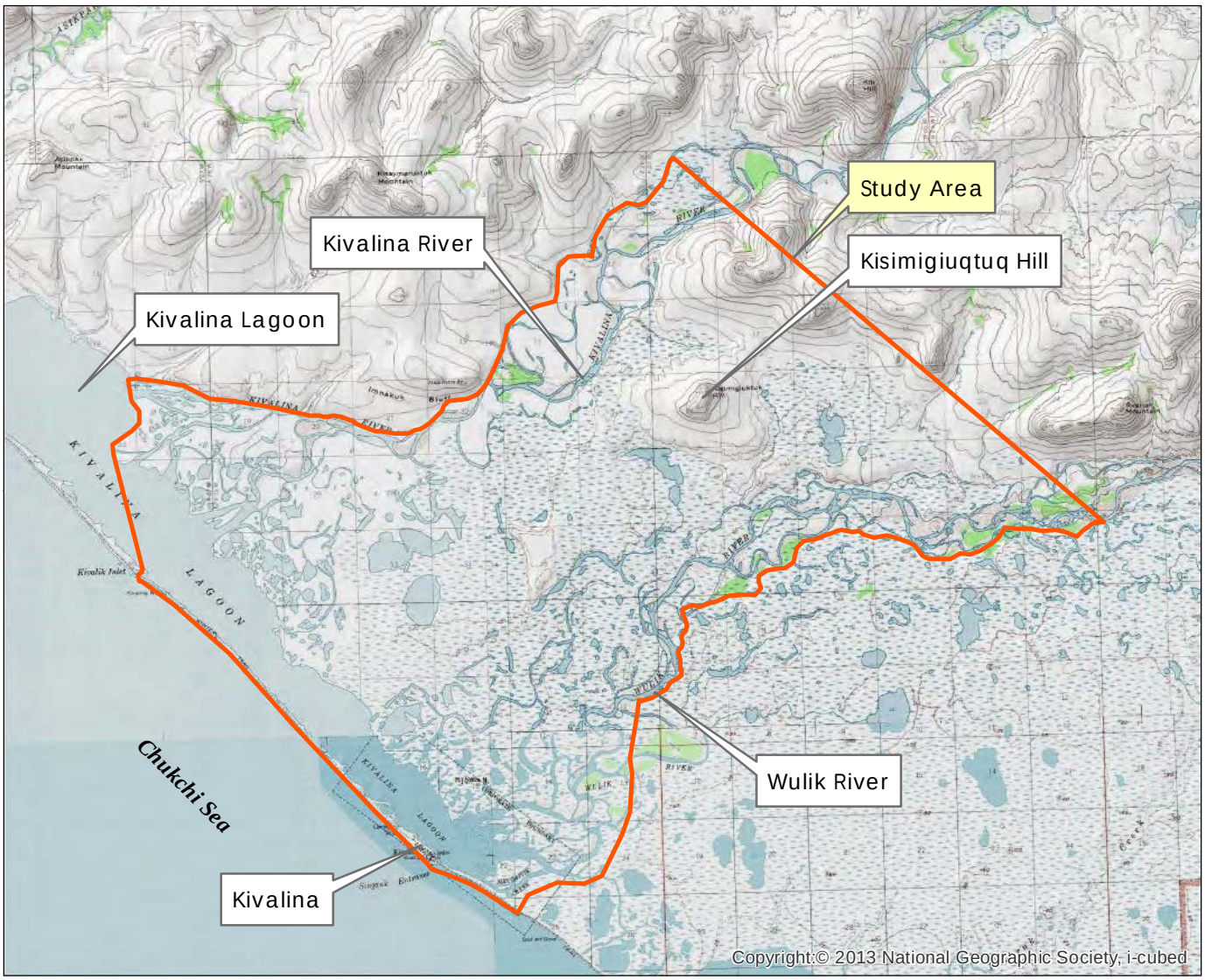
Thomas A. Gamza
Cultural Resource Specialist-Archaeologist (PQI)
State of Alaska DOT&PF, Northern Region

Figure 1: Location and Vicinity Map
Figures 2-7: Project APE Enlarged Sections
Figure 8: Locations of NOA-00325 and NOA-00327 in Western Terminus Enlarged Section

Attachment 1: National Park Service response to the DOT&PF Findings October 6, 2017
Attachment 2: SHPO concurrence with No Historic Properties Adversely Affected Determination October 9, 2017
Attachment 3: Final Inadvertent Discovery Plan – Kivalina Evacuation and School Site Access Road

Electronic cc w/ enclosures:
Jonathan Hutchinson, P.E., DOT&PF Northern Region, Project Manager
Paul Karczmarczyk, DOT&PF Northern Region, Environmental Impact Analyst
Brett Nelson, DOT&PF Northern Region, Regional Environmental Manager
Kathy Price, DOT&PF, Statewide Cultural Resources Manager
Amy Sumner, DOT&PF Statewide Environmental NEPA Manager





Graphics developed by Stantec Consulting Services, Inc.

Project Origin: City of Kivalina,
Kotzebue Recording District,
Section 21, Township 27N, Range 26W,
Kateel River Meridian

Project Terminus: Kisimigiuqtuq Hill,
Section 19, Township 28N, Range 25W
Kateel River Meridian

0 1.25 2.5 5 Miles

1:142,961 (at original document size of 8.5x11)

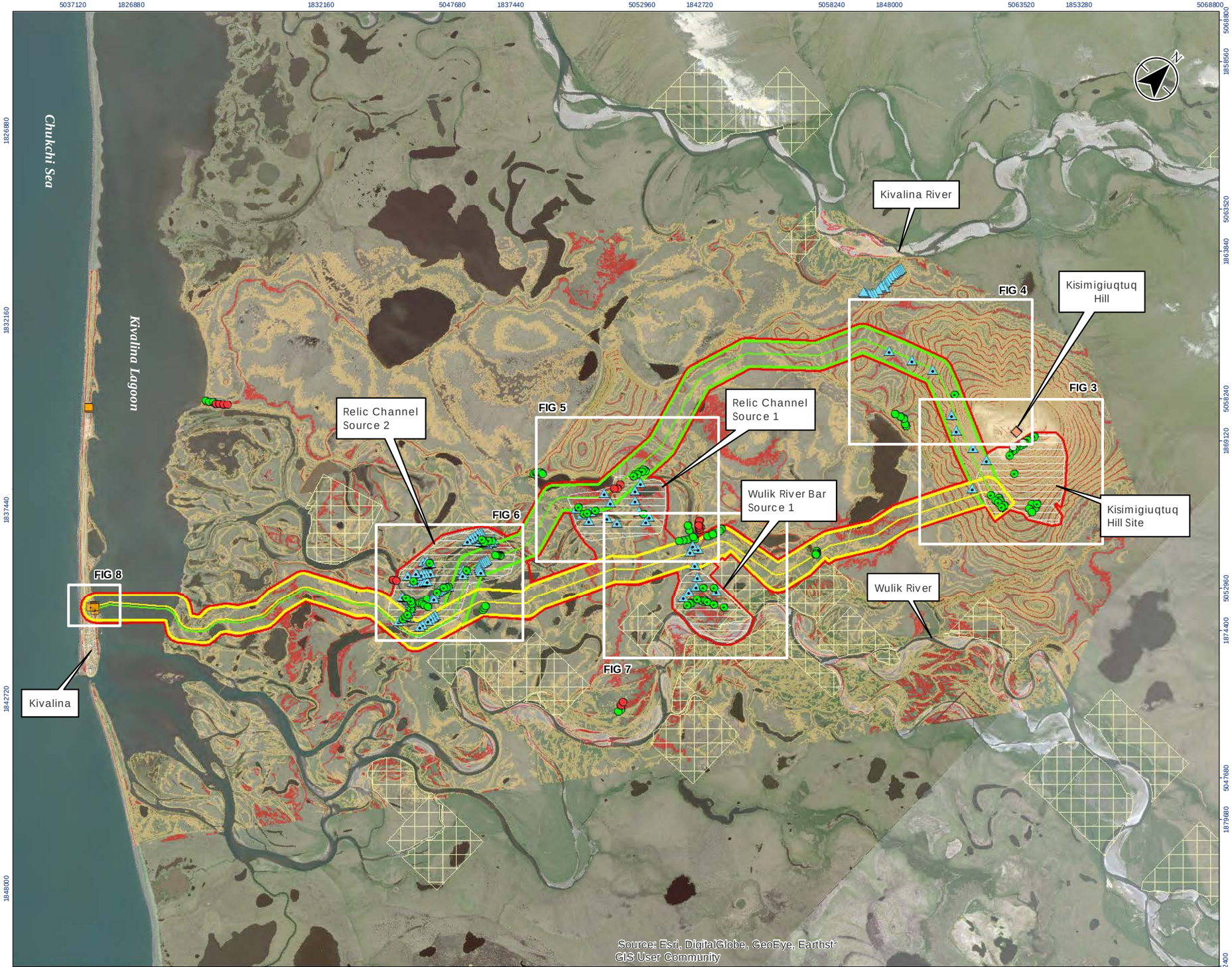
STATE OF ALASKA
Department of Transportation and Public Facilities
2301 Peger Road Fairbanks, AK 99709

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Location & Vicinity Map

DATE: September, 2017 | FIGURE 1

U:\20470551O2\ GIS\mxd\Arch Report Maps\20470551O2_Arch_Fig-1_Loc-Vic_Map.mxd Revised: 2017-09-06 By: cpannone



Legend

- Area of Potential Effect (APE)
- Southern Route - 7.7 miles
- Combined Route B - 8.9 Miles
- Potential Material Source
- Native Allotments

Data Points (2017)

- Bear Den
- Shovel Test Probe
- Soil Probes
- Test Unit

Data Points (2016)

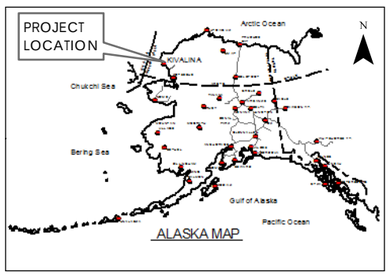
- Shovel Test Probe - Local
- Shovel Test Probe - Probability
- Assessed Feature
- Soil Probe
- Test Unit

0 0.4 0.8 Miles

1:47,520 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016



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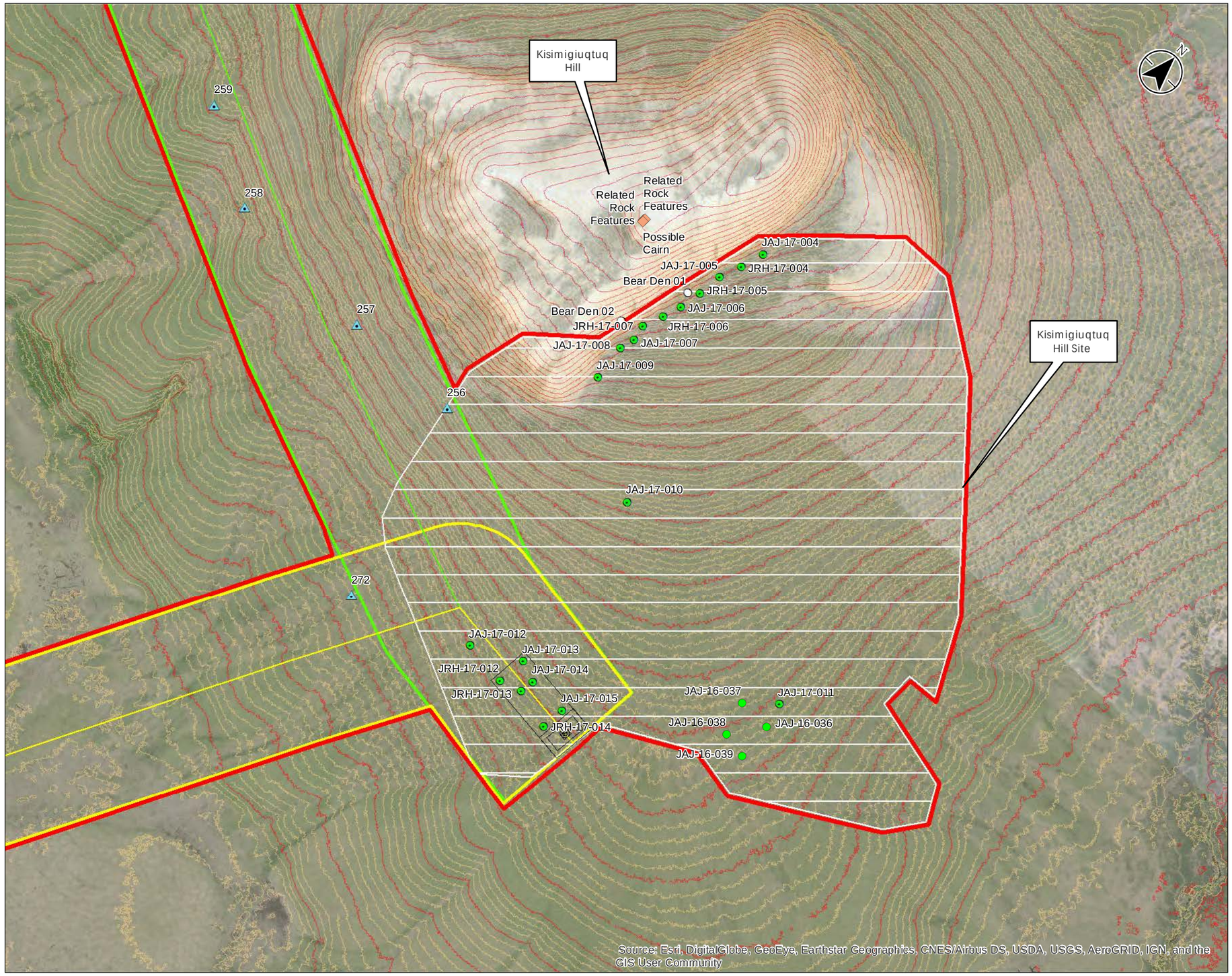
KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Area of Potential Effect - Overview

DATE: September, 2017 | FIGURE 2



Legend

- Area of Potential Effect (APE)
- Southern Route - 7.7 miles
- Combined Route B- 8.9 Miles
- Potential Material Source
- Native Allotments
- Gravel Mounds

Data Points (2017)

- Bear Den
- Shovel Test Probe
- Soil Probes
- Test Unit

Data Points (2016)

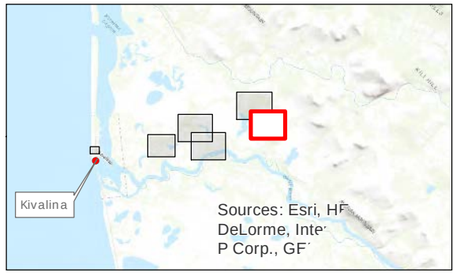
- Shovel Test Probe - Local
- Shovel Test Probe - Probability
- Assessed Feature
- Soil Probe
- Test Unit

0 500 1,000 Feet

1:7,200 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011;' ©AeroMetric Inc., 2013; Digital Globe 2016



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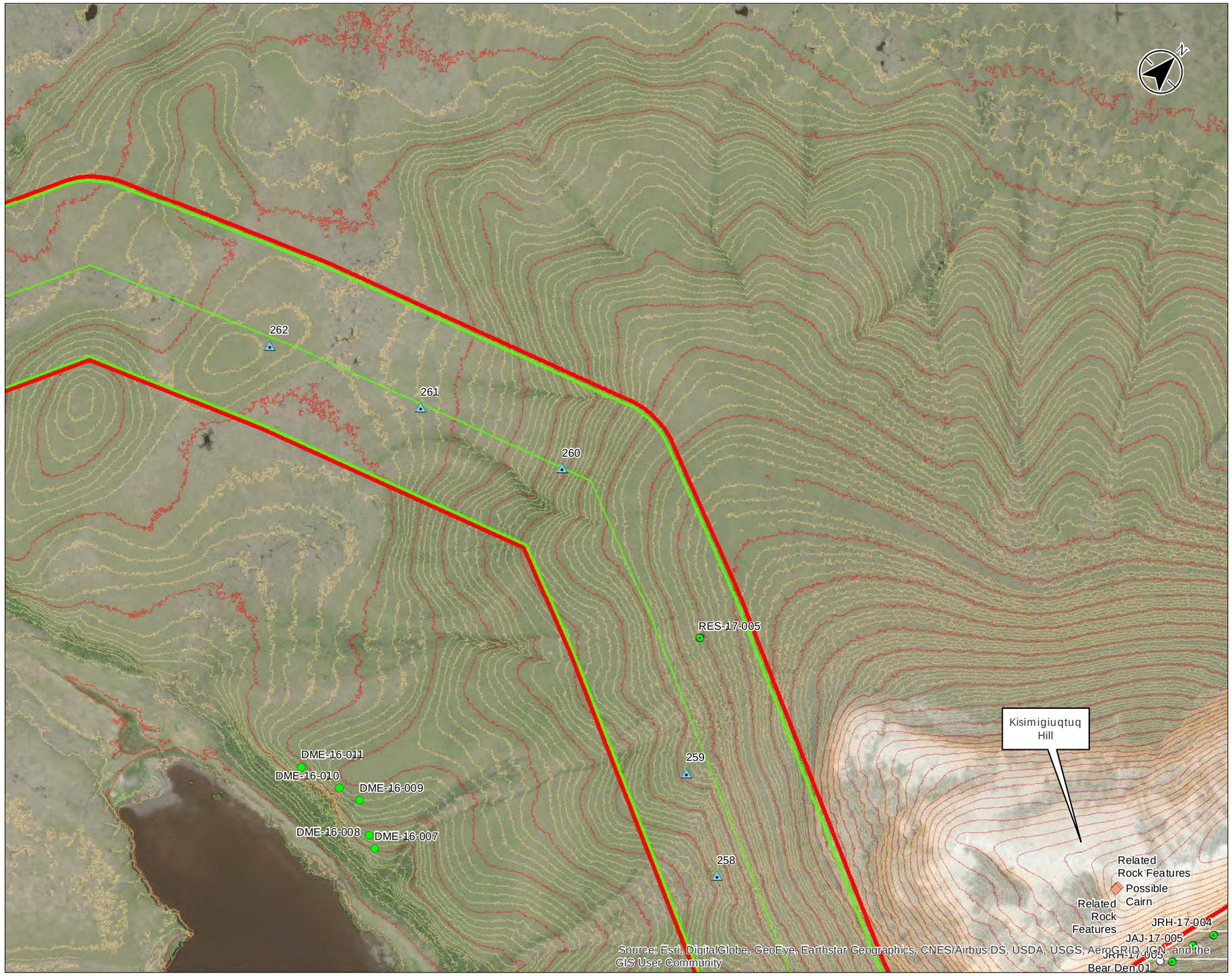
KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Kisimigiuqtuq Hill

DATE: September, 2017 | FIGURE 3

U:\20470505102\GIS\mxd\Arch Report Maps\20470505102_Arch_Fig3_Fig-8_Detail.mxd Revised: 2017-09-06 By: cpanmone



Legend

- Area of Potential Effect (APE)
- Southern Route - 7.7 miles
- Combined Route B- 8.9 Miles
- Potential Material Source
- Native Allotments
- Gravel Mounds

Data Points (2017)

- Bear Den
- Shovel Test Probe
- Soil Probes
- Test Unit

Data Points (2016)

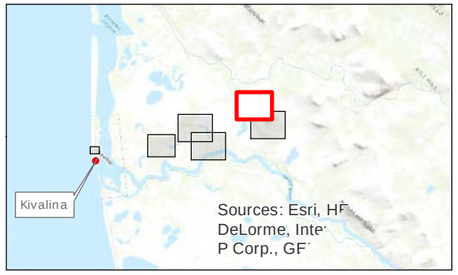
- Shovel Test Probe - Local
- Shovel Test Probe - Probability
- Assessed Feature
- Soil Probe
- Test Unit

0 500 1,000 Feet

1:7,200 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011; ©AeroMetric Inc., 2013; Digital Globe 2016



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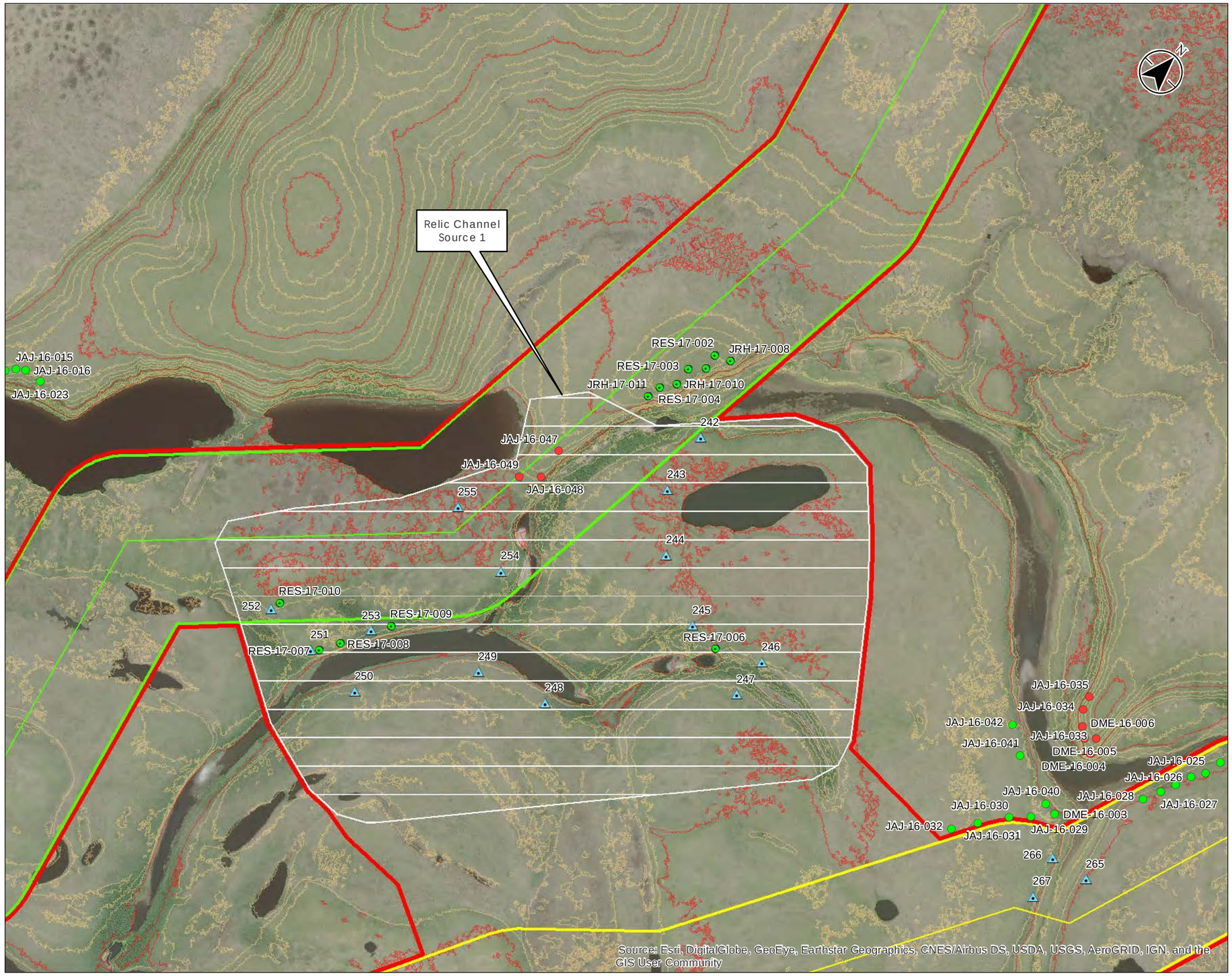
KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Revised Combined Route Alignment

DATE: September, 2017

FIGURE 4

U:\20470505102\GIS\mxd\Arch Report Maps\20470505102_Arch_Fig3_Fig4_Detail.mxd Revised: 2017-09-06 By: cpanmore



Legend

- Area of Potential Effect (APE)
- Southern Route - 7.7 miles
- Combined Route B- 8.9 Miles
- Potential Material Source
- Native Allotments
- Gravel Mounds

Data Points (2017)

- Bear Den
- Shovel Test Probe
- Soil Probes
- Test Unit

Data Points (2016)

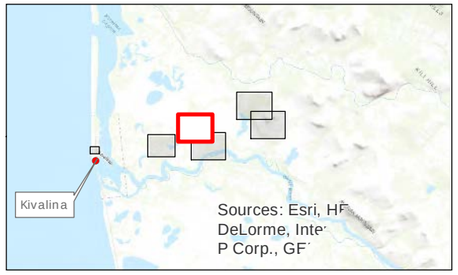
- Shovel Test Probe - Local
- Shovel Test Probe - Probability
- Assessed Feature
- Soil Probe
- Test Unit

0 500 1,000 Feet

1:7,200 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011;' ©AeroMetric Inc., 2013; Digital Globe 2016



Graphics developed by Stantec Consulting Services, Inc.

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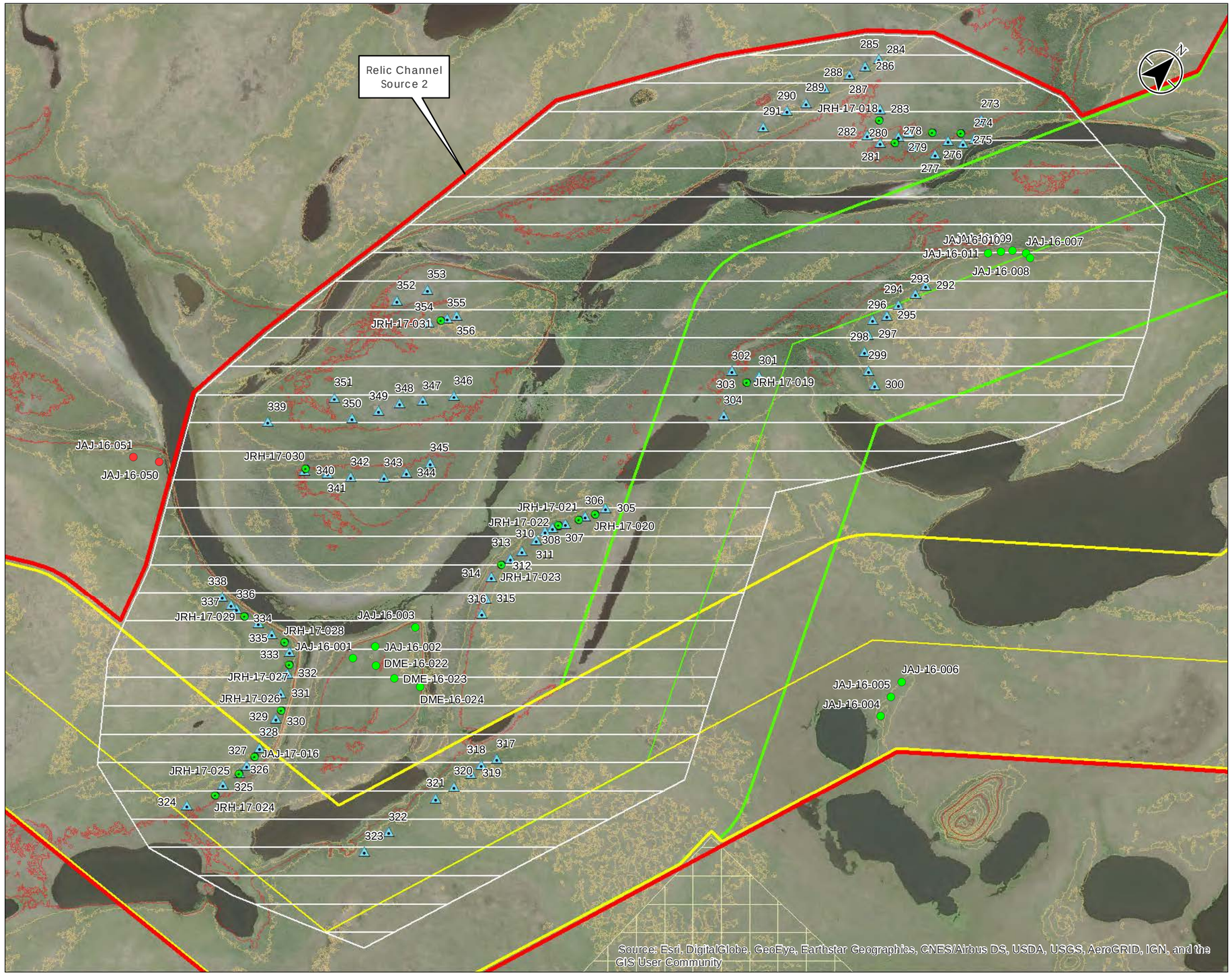
KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Relic Channel Source 1

DATE: September, 2017 | FIGURE 5

U:\20470505102\GIS\mxd\Arch Report Maps\20470505102_Arch_Fig3_Fig4_Detail.mxd Revised: 2017-09-06 By: cpanmone



Legend

- Area of Potential Effect (APE)
- Southern Route - 7.7 miles
- Combined Route B- 8.9 Miles
- Potential Material Source
- Native Allotments
- Gravel Mounds

Data Points (2017)

- Bear Den
- Shovel Test Probe
- Soil Probes
- Test Unit

Data Points (2016)

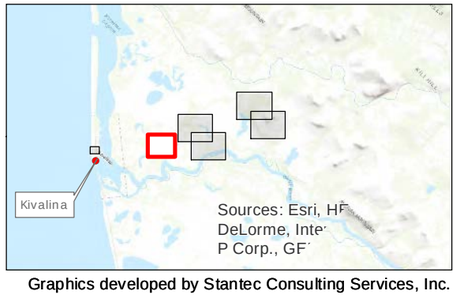
- Shovel Test Probe - Local
- Shovel Test Probe - Probability
- Assessed Feature
- Soil Probe
- Test Unit

0 400 800 Feet

1:5,760 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011;' ©AeroMetric Inc., 2013; Digital Globe 2016



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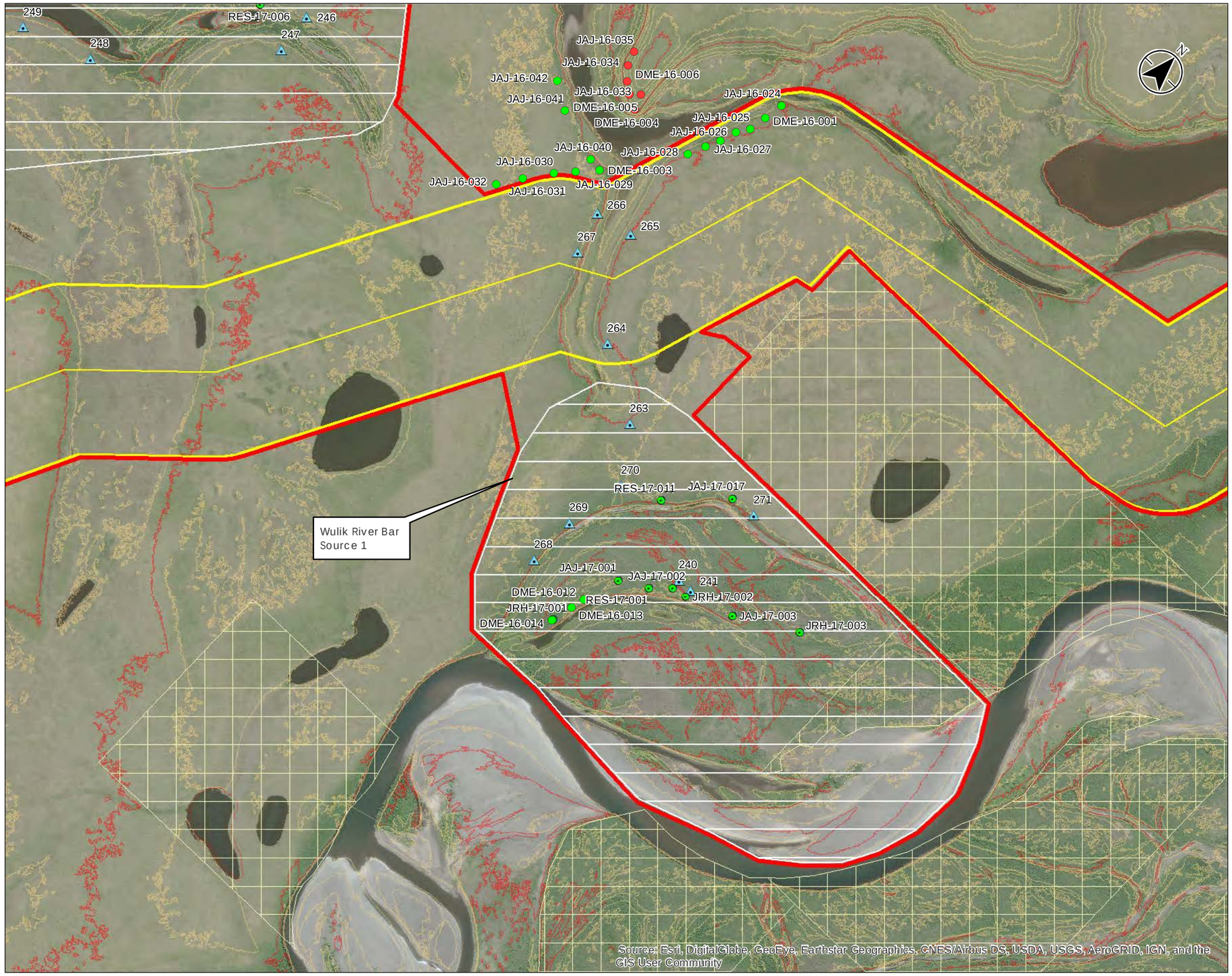
KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Relic Channel Source 2

DATE: September, 2017 | FIGURE 6

U:\2047858102\GIS\mxd\Arch Report Maps\20478581 02_Arch_Fig-3_Fig-8_Detail.mxd Revised: 2017-09-06 By: cpiamonte



Legend

- Area of Potential Effect (APE)
- Southern Route - 7.7 miles
- Combined Route B- 8.9 Miles
- Potential Material Source
- Native Allotments
- Gravel Mounds

Data Points (2017)

- Bear Den
- Shovel Test Probe
- Soil Probes
- Test Unit

Data Points (2016)

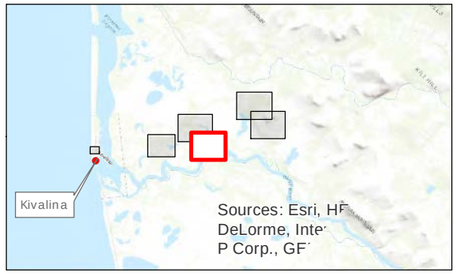
- Shovel Test Probe - Local
- Shovel Test Probe - Probability
- Assessed Feature
- Soil Probe
- Test Unit

0 500 1,000 Feet

1:7,200 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011;' ©AeroMetric Inc., 2013; Digital Globe 2016



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2301 Peger Road Fairbanks, AK 99709

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Wulik River Bar Source 1

DATE: September, 2017

FIGURE 7

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Legend

- Area of Potential Effect (APE)
- Southern Route - 7.7 miles
- Combined Route B- 8.9 Miles
- Potential Material Source
- Native Allotments
- Gravel Mounds

Data Points (2017)

- Bear Den
- Shovel Test Probe
- Soil Probes
- Test Unit

Data Points (2016)

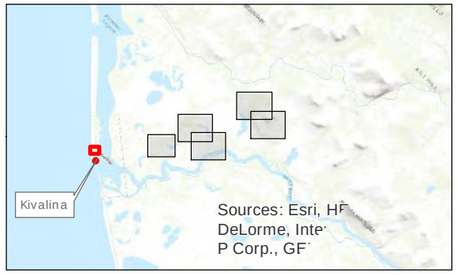
- Shovel Test Probe - Local
- Shovel Test Probe - Probability
- Assessed Feature
- Soil Probe
- Test Unit

0 140 280 Feet

1:2,030 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 2011 StatePlane Alaska 8 FIPS 5008 Feet
2. Orthoimagery: Combination ©Kodiak Mapping Inc., 2011;" ©AeroMetric Inc., 2013; Digital Globe 2016



Graphics developed by Stantec Consulting Services, Inc.

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

KIVALINA EVACUATION AND SCHOOL SITE ACCESS ROAD

Western Causeway Terminus

DATE: September, 2017

FIGURE 8

U:\2047805102\GIS\mxd\Arch Report Maps\2047805102_Arch_Fig3_Fig4_Detail.mxd Revised: 2017-09-06 By: cpanmore

United States Department of the Interior

NATIONAL PARK SERVICE
Alaska Region
240 West 5th Avenue, Room 114
Anchorage, Alaska 99501

IN REPLY REFER TO:
8.A.4 (AKRO-CR)20171002

OCT 0 6 2017

Thomas A. Gamza
State of Alaska DOT&PF, Northern Region
2301 Peger Road
Fairbanks, AK 99709-5316

Subject: Kivalina Evacuation and School Site Access Road. Federal/State Project No. 0002384/NFHWY00162, Section 106 Determination

Dear Mr. Gamza:

Thank you for providing project information for the proposed Kivalina Evacuation and School Site Access Road, Federal/State Project No. 0002384/NFHWY00162. The National Park Service has served 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).

We appreciate the Alaska Department of Transportation and Public Facilities (DOT&PF) providing NPS with the results of the cultural resource assessment survey, accommodating a site visit by NPS archeologist Rhea Hood on August 16, 2017, answering follow-up questions, as well as consulting with other interested parties including the Native Village of Kivalina.

As described, the project consists of building a causeway spanning approximately 0.6 miles across Kivalina Lagoon, constructing a 7.7 to 8.9 mile evacuation road east of Kivalina, and development of up to four different material sites in the same project area. The causeway construction will include pile driving at each abutment and the final bridge design and construction could cause additional ground disturbance near previously recorded sites that are within the Area of Potential Effect (APE). We understand that the two AHRS sites, NOA-00325 and NOA-00327, are documented for human burials and archaeological artifacts respectively and that these sites are within the APE but are over 100 meters away from the western end of the causeway abutment, and therefore the proposed project activity will not harm these sites.

Based on the *Kivalina Evacuation and School Site Access Road Cultural Resources Assessment Report* and the following September 2017 update, and the August 2017 project site visit, we understand that the cultural resources investigations did not reveal any new significant

archeological resources. Since Kivalina was included in the NHL for encompassing "sites evidencing prehistoric occupation," we recognize that there is still the potential for discovery as the project is implemented.

We concur with DOT&PF's finding of "no historic properties adversely affected" (36 CFR 800.5 (b)(1)) conditional to include archaeological monitoring and an Inadvertent Discovery Plan that allows for "reasonable efforts to avoid, minimize or mitigate adverse effects" and that covers post-Section 106 review discoveries of cultural resources.

Given that there is some potential for finding cultural resources and human remains within the NHL, we would appreciate receiving a copy of the Inadvertent Discovery Plan with the specific archaeological monitoring plan, as well as any 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,

Herbert C. Frost, Ph.D.
Regional Director

cc: Rhea Hood, Archeologist, NPS Alaska Region
Jennifer Pederson Weinberger, Cultural Resources Program Manager, NPS Alaska Region
Maija Lukin, Superintendent, Western Arctic Parklands
Mark Rollins, Review and Compliance, Alaska State Historic Preservation Office

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Natural Resources
DIVISION OF PARKS & OUTDOOR RECREATION
Office of History & Archaeology
550 West 7th Ave., Suite 1310
Anchorage, Alaska 99501-3565
Main: 907.269.8721
http://dnr.alaska.gov/parks/oha

SENT BY E-MAIL
DATE 10/9/17

October 9, 2017

File No.: 3130-1R FHWA/ 2016-01460

Subject: Kivalina Evacuation and School Site Access Road, 0002384/ NFHWY00162

Thomas Gamza
Department of Transportation & Public Facilities
2301 Peger Road
Fairbanks, AK 99709-5316

Dear Mr. Gamza,

The Alaska State Historic Preservation Office (AK SHPO) received your letter (dated September 19, 2017) and reports, titled *Kivalina Evacuation and School Site Access Road Cultural Resources Assessment Report* and the *Archaeological Assessment Update for the Kivalina Evacuation and School Site Access Road,* on September 24, 2017. Following our review of the documentation provided, pursuant to Section 106 of the National Historic Preservation Act, we concur with your finding of **no historic properties adversely affected** for the subject project. Furthermore, we concur that the project will not adversely affect NOA-00042 Cape Krusenstern Archaeological District National Monument National Historic Landmark (NHL). This concurrence is conditional to include archaeological monitoring and an Inadvertent Discovery Plan for the subject project. We look forward to receiving the final draft of the Inadvertent Discovery Plan for our records.

Please note that 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 comment letter does not end the 30-day review period provided to other consulting parties. Should unidentified cultural 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.

The AK SHPO appreciates your consultation efforts for the subject project and for including a staff member in a site visit on August 16, 2017. Please contact Mark Rollins at 269-8722 or mark.rollins@alaska.gov if you have any questions or if we can be of further assistance.

Sincerely,

Joan M. Antonsson

Judith E. Bittner
Deputy State Historic Preservation Officer

JEB:mwr

Cc: Rhea Hood, National Park Service, rhea_hood@nps.gov

Archaeological Monitoring Procedures and Inadvertent Discovery Plan – Kivalina Evacuation and School Site Access Road

I. Introduction

These procedures will be followed if cultural resources, including human remains, are encountered during ground disturbing activities at the Kivalina Evacuation and School Site Access Road in Kivalina, Alaska. This plan also includes procedures for archaeological monitoring at selected locations within the project area. Monitoring and discovery protocols contained herein are derived from Appendix F, "Archaeological Monitoring and Discovery Plan," of the *First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the Alaska State Historic Preservation Officer, and the Alaska Department of Transportation and Public Facilities Regarding Implementation of Section 106 of the National Historic Preservation Act for the Federal-Aid Highway Program in Alaska.*

Project Background

The proposed project origin is at the City of Kivalina, located on the southeast tip of the barrier island located between the Chukchi Sea (Arctic Ocean) and Kivalina Lagoon (Figure 1). The project terminus is located on the mainland across the Kivalina Lagoon approximately six miles northeast of the city at a community selected evacuation site on Kisimigiuqtuq Hill (K-Hill). The proposed project includes part of the Kivalina barrier island, the southern portion of Kivalina Lagoon, and the lower Wulik and Kivalina River drainages.

The Proposed Action would construct a safe, reliable, all-season evacuation road between the community of Kivalina and K-Hill. A range of route alternatives are being considered (Figure 2), but common to all are the following actions:

- **Establishment of a safe, reliable, all-season Kivalina Lagoon crossing.** All alternatives include construction of a causeway across the lagoon that variously incorporate different configurations of hydrological openings including bridge(s), culvert(s), or both.

- **Construction of an all-season access road connecting the Kivalina Lagoon crossing to the K-Hill evacuation site**. The road would be designed to accommodate a wide variety of motorized vehicles over a two-way road with shoulders, multiple turnouts, and side slopes that may include guard rails and other safety features where determined to be necessary and prudent.

- **Development of up to four material sites including the K-Hill Site, Wulik River Source 1, Relic Channel Source 1, and Relic Channel Source 2.** These material sites are anticipated to be suitable local sources of select material to supply the project. Selection and development of viable material sources and haul routes are considered as part of the Proposed Action.

Potential construction methodology may vary depending on timing of construction, contractor methods, locations of staging areas, camps, haul routes, and sequencing of activities.

Construction of the lagoon crossing may include in-water placement of fill, bridge support pile driving, and placement of culvert(s). Placement of fill is generally done during ice-free conditions, but several construction components associated with the lagoon crossing could be completed in the winter.

Grounded ice in shallow depths of the lagoon could be removed allowing placement of the base causeway embankment layer and rock protection with no, or minimal water present, thereby minimizing disturbance of fine sediments. Pile driving would take place on both sides of the bridge opening, and consist of driving piles at each abutment. The final design of the bridge foundation would establish the specific number, size, and depth of the pilings.

II. Archaeological Monitoring

Background

Archaeological monitoring is the stationing of an archaeologist on a construction site to watch for evidence of archaeological remains as the construction proceeds. Archaeological monitoring for the Kivalina project is planned for select activities in defined geographic areas. Monitoring requirements will be implemented during subsurface, ground disturbing activities. Archaeological monitoring was a condition of the SHPO's concurrence with DOT&PF's Finding of No Adverse Effect (SHPO Concurrence Letter, October 9, 2017).

Archaeological monitoring is to be carried out by or under the direct supervision of a person or persons meeting at a minimum the *Secretary of the Interior's Professional Qualifications Standards for Archaeologists* (48 FR 44738-44739). The Archaeological Monitor(s) will conduct on-site monitoring of ground-disturbing activities that extend into cultural resource sensitive areas identified through Section 106 consultation for the project.

Areas Planned for Monitoring

Archaeological monitoring is planned for the west side of the Lagoon Crossing/Causeway construction area (in the city of Kivalina), the evacuation road terminus at K-Hill, and the proposed material site locations DOT&PF will ensure a Secretary of the Interior (SOI) qualified professional archaeologist will be present to monitor for potential cultural resources during all ground disturbing activities in the above monitoring locations.

Monitoring Procedures

Before work begins on the project, the DOT&PF Project Engineer, the DOT&PF Professionally Qualified Individual (PQI), and the Archaeological Monitor(s) will conduct a pre-construction meeting with the Construction Contractor to explain any Section 106 terms or conditions for the project and the procedures to follow if archaeological materials or human remains are found, as well as the role of the Archaeological Monitor. The PQI will provide copies of the contact list contained in this document (Appendix 1) to be used in the event of a cultural resource discovery.

The on-site supervising Archaeological Monitor is authorized to halt construction in a specific location if any previously unidentified cultural resources are encountered during earth-moving activities.

Monitoring Reporting

The Archaeological Monitor will provide a summary construction monitoring memo on a weekly basis to the DOT&PF Project Engineer and the PQI. When the construction monitoring is complete, the Archaeological Monitor will provide to the Project Engineer and PQI draft and final summary reports detailing the construction monitoring activities. The report is to meet contemporary professional standards and the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (FR Vol. 48, No. 190, pp. 44734-44737). The PQI will provide the summary report to SHPO and other consulting parties

III. Protocols for Discovery of Cultural Resources

Cultural resources may include evidence of pre-contact or historic activities, artifacts such as formed stone or bone tools, tool-making debris, fire-modified rock, organic materials such as charcoal and faunal remains, historic debris scatters, and features such as hearths, pits, privies, post-holes or post- molds, foundations, and other evidence of structural remains. The following procedures must be adhered to in the event of a discovery of cultural resources during any project activities.

These procedures will be followed for a discovery during archaeological monitoring at the required monitoring locations *and* must also be followed if an unexpected discovery is made during project activities which were not required to have a monitor.

On-Site Procedures at the Time of Discovery

In the unlikely event that archaeological materials, features, and other potentially sensitive cultural resources are encountered during construction activities or the material site development in association with the project, all work at and adjacent to the discovery must stop. If an Archaeological Monitor is present, they will examine the discovery to determine if it is a cultural resource. If it is determined to not be a cultural resource, work may proceed with no further delay. If it is determined to be a cultural resource, the discovery site is to be secured by the Contractor. If no Archaeological Monitor is present, the discovery site is to be secured by the Contractor until such time as a qualified professional archaeologist can examine the discovery. The discovery area and a surrounding buffer zone shall be delineated with flags tied to stakes that will be driven into the ground. These stakes shall not be removed except by the PQI or Archaeological Monitor(s) at the conclusion of the cultural resource work. The buffer zone established around the discovery zone shall be large enough to allow ground disturbance activities to resume outside the buffer. If human remains are encountered, treat them with dignity and respect, and follow the protocols outlined below in Protocol for Discovery of Human Remains.

The Project Engineer may direct construction away from cultural resources to work in other areas prior to contacting the discovery notification consulting parties. The Project Engineer will coordinate with the Archaeological Monitor (if one is present) to contact the PQI or Regional Environmental Manager (REM).

The PQI or REM will notify the DOT&PF Statewide Environmental Office NEPA Program Manager, the SHPO, the National Park Service (NPS), the Native Village of Kivalina, City of Kivalina, NANA Regional Corporation, and the Native Village of Noatak; contact information for these parties is listed in Appendix 1. The PQI (or REM) must contact these parties within 48 hours of the discovery in accordance with 36 CFR 800.13.

Evaluation of Cultural Resource Materials

The PQI will be the DOT&PF point of contact for consultation with the FHWA, the SHPO, Tribes, and other consulting parties as appropriate to ensure that the previously unidentified resource or unanticipated effect is evaluated, and an appropriate treatment plan is developed.

For evaluating the resource: If the discovery occurs during archaeological monitoring the monitor will perform the following steps in collaboration with the PQI. If the discovery occurs during project activities not subject to monitoring, the Project Engineer, the PQI, and the Contractor will coordinate to procure archaeological services.

- As a streamlining measure, after a qualified archaeologist confirms that the find is cultural and establishes the boundaries of the discovery site, the PQI may assume an archaeological resource

is eligible for inclusion in the National Register of Historic Places (National Register) under Criterion D.

- Alternatively, if the find is confirmed as cultural, the PQI may opt to have the cultural resource formally assessed for eligibility to the National Register using established National Register criteria (36 CFR 800.4(c)) and will provide the National Register evaluation report to the SHPO, Tribes, and other consulting parties as appropriate. The PQI will determine National Register eligibility in consultation with the SHPO and Tribes.

For properties deemed to be eligible for the National Register, the PQI will apply the criteria of adverse effect (36 CFR 800.5) in consultation with the SHPO and the Tribes.
Any treatment plan resulting from the discovery will be developed in consultation with the PQI, SHPO, NPS, and other consulting parties. The PQI will coordinate with the Project Engineer and the Construction Contractor to ensure that the treatment plan is implemented.

Curation and Documentation

If any pre-contact or historic archaeological materials are recovered from lands managed by the State of Alaska, these materials and any associated documentation will be curated at the University of Alaska Museum of the North (UAMN) in accordance with the provisions of an existing Memorandum of Understanding between the DOT&PF and UAMN (Appendix 2). Archaeological resources recovered from City of Kivalina lands will be remanded to the City of Kivalina. Archaeological resources recovered from NANA Regional Corporation, Inc. lands will be transferred to the Assistant Director of Lands, who will coordinate with the Native Village of Kivalina and the Native Village of Noatak regarding the final disposition of the recovered materials.

All documentation, testing and treatment plan, evaluation, data recovery, and reporting of cultural resource materials as described for these procedures will follow and meet the contemporary professional standards and the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716).

Proceeding with Construction

Project construction outside the discovery site may continue as directed by the Project Engineer and the Construction Contractor while documentation and assessment of the cultural resources at the discovery site proceeds. When the PQI ensures that recovery of cultural resource materials as outlined above is satisfied and complete, and the PQI determines that compliance with State and federal laws is complete, the Project Engineer may allow construction at the discovery site to resume.

IV. Protocol for Discovery of Human Remains

If human remains are identified at any time during this project, any excavation or other project activities in the area of the discovery will cease and the location will be secured, and protected from further disturbance. The Project Engineer on Site will immediately initiate the notification process established by the OHA (see Appendix 1: Guidelines Laws and Protocols Pertaining to the Discovery of Human Remains in Alaska), and notify the designated representatives of the DOT&PF, the SHPO, the NPS, and NANA Regional Corporation, Inc., the City of Kivalina, the Native Village of Kivalina, and the Native Village of Noatak.

GUIDELINES

Laws and Protocols Pertaining to the Discovery of Human Remains in Alaska

The treatment of human remains following inadvertent discovery is governed by state and federal laws, land status, postmortem interval (time since death), and biological/cultural affiliation. First and foremost, the site of discovered remains should be regarded a potential "crime scene" until a person with appropriate expertise and authority determines otherwise.

State Laws:

Several State laws are applicable to the discovery of human remains in Alaska. The State Medical Examiner (SME) has jurisdiction over all human remains in the state (with rare exceptions, such as military aircraft deaths), regardless of age.

AS 12.65.5 requires immediate notification of a peace officer of the state (police, Village Public Safety Officer, or Alaska State Trooper [AST]) and the State Medical Examiner when death has "been caused by unknown or criminal means, during the commission of a crime, or by suicide, accident, or poisoning."

In this regard, contact the Alaska State Trooper/Missing Persons Bureau first. (See list of contacts on following page.) The AST has interpreted notification procedures as applicable to all remains, including ancient remains.

AS 11.46.482(a)(3), which applies to all lands in Alaska, makes the "intentional and unauthorized destruction or removal of any human remains or the intentional disturbance of a grave" a class C felony.

AS 41.35.200, which applies only to State lands, makes the disturbance of "historic, prehistoric and archeological resources" (including graves, per definition) a class A misdemeanor.

AS 18.50.250, which applies to all lands in Alaska, requires permits for the disinterment, transport, and reinterment of human remains. Guidance and permits are available from the Bureau of Vital Statistics (see attached list of contacts).

Federal Laws:

On Federal lands and Federal trust lands, the unauthorized destruction or removal of archaeological human remains (i.e., more than 100 years old) is a violation of **16 USC 470ee** (Archeological Resources Protection Act). If human remains on federal or federal trust lands are determined to be Native American, their treatment and disposition are also governed by the Native American Graves and Repatriation Act (NAGPRA) of 1990 (**PL 101-601; 25 USC 3001-30013**; 104 Stat. 3048-3058; 43 CFR 10). NAGPRA also applies to Native American human remains from any lands if the remains are curated in any institution that receives federal funds.

General Guidance:

Your first contacts should be the AST/Missing Persons Bureau, the Alaska State Medical Examiner's Office, local law enforcement, the Alaska Office of History and Archaeology, and the landowner.

In many instances, the field archaeologist must make a judgement call regarding the age of the remains, his/her level of confidence in the evaluation, and whether further investigation by a specialist is warranted. While notification under State Law is required, peace officers and the SME generally regard archaeologists competent to make these type determinations and welcome input that may assist with the investigation. With regard to ancient remains (> 100 years old), the SME and AST will generally defer to the opinion of the field archaeologist and require no further criminal investigation. However, the remains and a surrounding buffer area should not be disturbed until appropriate reporting and consultation have occurred.

Dr. Richard VanderHoek, State Archaeologist
Alaska Office of History and Archaeology
550 W. 7th Avenue, Suite 1310
Anchorage, AK 99501
(907) 269-8728 or richard.vanderhoek@alaska.gov

Department of Transportation & Public Facilities
Brett Nelson
DOT&PF Environmental Coordinator
2301 Peger Road
Fairbanks, AK 99701
Phone: (907) 451-2238
Email: brett.nelson@alaska.gov

State Medical Examiner's Office
5455 Dr. Martin Luther King Jr. Ave Q
Anchorage, AK 99507
Reporting Hotline (Death Hotline):
Phone: (907) 334-2356
1-888-332-3273 (Outside Anchorage)
Stephen Hoage, Operations Administrator Phone: (907) 334-2202
Fax: (907) 334-2216
Email: stephen.hoage@alaska.gov
Dr. Gary Zientek, Chief Medical Examiner Phone: (907) 334-2200
Fax: (907) 334-2216
Email: gary.zientek@alaska.gov

State Bureau of Vital Statistics
Heidi Lengdorfer, Chief
5441 Commercial Blvd.
P.O. Box 110675
Juneau, AK 99801
Phone: (907) 465-8643
Email: heidi.lengdorfer@alaska.gov
For questions regarding burial transit permits
Margo Meyer:
Phone: (907) 465-8610
Email: margo.meyer@alaska.gov

State Troopers
Missing Persons Bureau
Phone: (909) 269-5477
Fax: (907) 338-7243
Sgt. Kid Chan
Phone: (907) 269-5058
Email: choong.chan@alaska.gov
Stephanie Johnson
Phone: (907) 269-5497
Email: stephanie.johnson2@alaska.gov
(Please send email to Sgt. Chan w/cc to Stephanie, with relevant information and photos)

DNR Office of History and Archaeology
Judith E. Bittner
State Historic Preservation Officer (SHPO) Phone: (907) 269-8721
Fax: (907) 269-8908
Email: judy.bittner@alaska.gov
Dr. Richard VanderHoek
State Archaeologist/Deputy SHPO
Phone: (907) 329-8728
Fax: (907) 269-8908
Email: richard.vanderhoek@alaska.gov

Native Village of Kivalina
Millie Hawley, President
PO Box 50051
Kivalina, AK 99750
Phone: (907) 645-2153
Email: tribeadmin@kivaliniq.org

City of Kivalina
Austin Swan Sr., Mayor
PO Box 50079
Kivalina, AK 99750
Phone: (907) 645-2137
Email: atchugunnaq@gmail.com

NANA Regional Corporation, Inc.
Jeffrey Nelson, Assistant Director of Lands
909 West 9th Avenue
Anchorage, AK 99501
Phone: (907) 442-3301
Email: Jeffrey.Nelson@nana.com

National Park Service- Alaska Regional Office
Rhea Hood, Archeologist
240 West 5th Avenue
Anchorage, AK 99501
Phone: (907) 644-3460
Email: rhea_hood@nps.gov

Native Village of Noatak
Vernon Adams, Sr., President
PO Box 89
Noatak, AK 99761
Phone: (907) 485-2173
Email: tribaladmin@nautaaq.org

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
AND
THE UNIVERSITY OF ALASKA MUSEUM OF THE NORTH
FAIRBANKS, ALASKA

THIS MEMORANDUM OF UNDERSTANDING (Agreement) is hereby entered into by and between the Alaska Department of Transportation and Public Facilities (DOT&PF) Statewide Environmental Office, representing the three DOT&PF regions (i.e., Central, Northern, and Southeast), and the University of Alaska Museum of the North, Fairbanks, Alaska, herein referred to as the Museum.

WHEREAS, the purpose of this Agreement is to provide the framework for the effective museum curation and storage of cultural material collected or excavated during the development of DOT&PF sponsored projects in accordance with the stipulations outlined below.

WHEREAS, the DOT&PF administers federally funded projects that are subject to Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800 Protection of Historic Properties) and State funded projects subject to the Alaska Historic Preservation Act of 1970 (specifically AS 41.35.070 Preservation of Historic, Prehistoric, and Archaeological Resources Threatened by Public Construction); and

WHEREAS, the development of said projects can result in certain cultural material recovered during archaeological survey, excavation, and data recovery, and the creation of associated field records (herein called Collections); and

WHEREAS, DOT&PF as the sponsor for federal and State funded projects has the responsibility under federal and State law to ensure proper care of Collections; and

WHEREAS, the Museum is an accredited institution that has requisite facilities that meet and operate in accordance with the federal standards published in 36 CFR 79 to provide physical security and a controlled environment for Collections, has an established Collection Management Policy that provides procedures and requirements to curate archaeological collections for future research, exhibit, and instruction, and has qualified Museum professionals with the expertise for the curation of Collections; and

WHEREAS, the Parties hereto recognize the mutual benefits to be derived by having Collections from DOT&PF suitably housed and maintained by the Museum; and

WHEREAS, the Parties hereto recognize the continued State legal title to Collections from lands owned or controlled by the State (pursuant to AS 41.35.020 and 11 AAC 16.020) and the responsibility to ensure that the Collections are suitably managed and preserved for the public good; and

WHEREAS, the Parties hereto recognize that DOT&PF sponsored surveys and archaeological excavations on properties not owned or controlled by the State require a separate Right-of-Entry agreement with the land owner or managing entity; and

WHEREAS, Right-of Entry agreements will identify the party holding legal title to the cultural materials, and contain terms and conditions to ensure proper care and curation of any recovered Collections; and

NOW THEREFORE, the DOT&PF and the Museum as signatories to this Agreement mutually agree to promote a unified approach to preservation and protection of cultural materials in accordance with the following stipulations until this Agreement expires or is terminated.

STIPULATIONS

I. RESPONSIBILITIES

A. The Museum
   1. In accordance with the Museum's Collections Management Policy, the Museum agrees to act as repository for appropriately accessioned and cataloged cultural material, and to provide proper space, facilities and personnel for curation, storage and maintenance of the materials.
   2. Collections made on State lands remain the property of the State, while the Right-of-Entry agreements will contain the terms and conditions of Collections from properties not owned or controlled by the State. The Museum shall not transfer or discard a State Collection without written permission of the State. The Museum may not sell any State Collection.
   3. The Museum assumes no responsibility for cultural specimens from DOT&PF sponsored projects that have not been accessioned and cataloged according to the Museum's Curation Guidelines accession system and that have not been physically deposited in the Museum. The Museum reserves the right to refuse to accept a Collection.

B. The DOT&PF
   1. In accordance with the Museum's Curation Guidelines, the DOT&PF will be responsible to coordinate with the Museum for the proper accessioning and cataloging and processing for long-term museum storage of Collections from DOT&PF sponsored projects that are to be deposited with the Museum. This will be accomplished by a qualified consultant(s) under contract to the DOT&PF.
   2. All associated records will be deposited at the Museum at the same time as the Collection(s). These records will include (but not necessarily be limited to) catalog ledgers and copies of all reports, papers, field notes, photographs, profiles, etc. In accordance with applicable federal and State laws, the Museum will restrict access to information about the location of heritage resource sites from which DOT&PF Collections are obtained.

II. ADMINISTRATION

A. Duration of Agreement: The Agreement shall remain in effect for a period of ten (10) years after the date it takes effect. The Museum and the DOT&PF will review this Agreement in five (5) years and make any necessary adjustments unless it is terminated prior to that time. If there are no objections from the parties, the term of the Agreement will automatically be extended for an additional ten (10) years. The procedures, terms and conditions of this Agreement may be modified at any time by joint written consent of the parties.

B. Fees: The DOT&PF and the Museum recognize that fees will be required for the DOT&PF sponsored Collections when they are transferred for deposition and organization at the Museum. The fees for these services will be in accordance with the Museum's Curation Guidelines.

C. Amendment: Parties to this Agreement may at any time propose amendments, whereupon the parties will consult to consider such amendment. This Agreement may be amended only upon written concurrence of the signatory parties. Amendments go into effect on the date of the last signature.

D. Termination: This Agreement becomes effective when final signature is received. A party may terminate this Agreement at any time by giving written notice to the other parties not less than one hundred twenty (120) days in advance of the effective date of termination. If any party proposes termination of this Agreement, the party proposing termination will consult with the other parties to seek alternatives to termination. Should such consultation result in an agreement on an alternative to termination, the parties will proceed in accordance with that agreement.

THE PARTIES HERETO have executed this Memorandum of Understanding.

UNIVERSITY OF ALASKA MUSEUM, FAIRBANKS

By: _____ Date: 1/27/14
Josh Reuther, Ph.D., Curator of Archaeology

By: _____ Date: 1/27/14
Aldona Jonaitis, Ph.D., Museum Director

By: _____ Date: 1/31/14
Rosemary Madnick, Grant and Contract Services Director

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

By: _____ Date: 12/12/13
Roger Healy, P.E., Chief Engineer

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Transportation and Public Facilities

Northern Region
Design and Engineering Services
Preliminary Design and Environmental Section

2301 Peger Road
Fairbanks, Alaska 99709-5316
Main: 907-451-2237
Toll free: 800-451-2363
Fax: 907-451-5126

In Reply Refer To:
Kivalina Evacuation and School Site Access Road
Federal/State Project No. 0002384/NFHWY00162
Addendum: NOA-00325 & NOA-00327

December 29, 2017

Bert Frost, Regional Director
Alaska Regional Office
National Park Service
240 West 5th Avenue
Anchorage, AK 99501

Dear Mr. Frost:

The Alaska Department of Transportation and Public Facilities (DOT&PF) has assumed the responsibilities of the Federal Highway Administration (FHWA) under 23 U.S.C. 327, and is proposing to construct a safe, reliable, all-season evacuation road between the community of Kivalina and a site on Kisimigiuqtuq Hill (K-Hill) (Figure 1). The Kivalina Evacuation and School Site Access Road (the Project) location is legally described in Table 1 below:

Table 1: Project Location

Section(s)	Township	Range	Meridian	USGS Quad
1, 2, 10, 11, 15, 16, 21	027N	026W	Kateel River	Noatak C-5
19. 20, 29, 30, 31	028N	026W	Kateel River	Noatak C-5
25, 26, 35, 36	029N	025W	Kateel River	Noatak C-5

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by DOT&PF pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated November 3, 2017, and executed by FHWA and DOT&PF.

The proposed project origin is at the City of Kivalina, located on the southeast tip of the barrier island located between the Chukchi Sea (Arctic Ocean) and Kivalina Lagoon (Figure 1). The project terminus is located on the mainland across the Kivalina Lagoon approximately six miles northeast at a community selected evacuation site on K-Hill.

Background

On September 19, 2017 DOT&PF made a finding of No Historic Properties Adversely Affected (Findings Letter) for the proposed project. The National Park Service (NPS) responded on October 6, 2017 (Attachment 1); their response included the detail that two Alaska Heritage Resources Survey (AHRS) sites, NOA-00325 and NOA-00327, appear to be within the proposed project's Area of Potential Effect (APE) but that they would not be affected by the project's activities. These two sites did not appear in the Findings Letter or in the SHPO concurrence to those Findings on October 9, 2017 (Attachment 2). This informational update addresses those two sites. DOT&PF's original finding of effect has not changed.

NOA-00325 and NOA-00327

Both NOA-00325 and NOA-00327 were assigned AHRS numbers in the 2005 *Cultural Resources Survey of Proposed Sewage and Water Systems Improvements in Kivalina, Alaska* report by Northern Land Use Research, Inc.

Table 2. Site Details from AHRS Database

Site Number	Site Name	Site Description	Determination of Eligibility?
NOA-00325	KIV-HR-05	Informant reported to cultural resource investigators in 2005 that human remains discovered during construction of house in 1990s. No information regarding their handling.	No Determination of Eligibility
NOA-00327	NOA-00327	Local informant reported to other cultural resource investigators in 2004 that artifacts had been found near location when they were a child.	No Determination of Eligibility

The site numbers were assigned based on information from local residents who recalled that in one location (NOA-00325) human remains had been found during the construction of a house foundation in the 1970s. It was not determined at the time of the 2005 interview if the remains were left in place or re-interred in the current cemetery. Another local resident noted that at the other location (NOA-00327) artifacts had been found and he played with them when he was a child. Based on these interviews, AHRS numbers were assigned for the general locations. As of 2017, no extant physical materials have been identified in relation to either of these two sites.

This letter is being sent to acknowledge that the AHRS-reported locations for NOA-00325 and NOA-00327 are within the APE for this project. Their omission from the Findings Letter (September 19, 2017) was a clerical error and DOT&PF does not anticipate ground disturbing activities in the reported site locations that would require a re-evaluation of the finding of effect for this project. The APE for the project was drawn broadly to evaluate potential visual effects as well as any ground disturbing effects the project may have on the surrounding land and community. The AHRS-reported locations for these two sites are on the periphery of the APE where visual effects were the greatest concern due to the presence of standing structures. No ground-disturbing activity is planned for the portions of the APE containing these sites.

Section 4(f)
As stated in in September 19, 2017 Findings Letter it is the DOT&PF's intent to make a Section 4(f) *de minimis* impact finding for this project and NOA-00042, the Cape Krusenstern National Historic Landmark. Section 4(f) findings have not changed with the inclusion of NOA-00325 and NOA-00327 within the project APE as there will be no use of these sites.

Inadvertent Discovery Plan
Additionally, please find attached the finalized Inadvertent Discovery Plan (Attachment 3), as stipulated and required, for this project as presented in the DOT&PF Findings Letters of September 19, 2017 and a full set of the figures for the entire project APE (Figures 1-8).

Consultation Summary
On July 10, 2017 a meeting among Agency cultural resource staff was held in Anchorage. The DOT&PF Northern Region Cultural Resource Specialist-Archaeologist PQI, Office of History and Archaeology staff, the Alaska SHPO, and the NPS Archaeologist for the NRHP Program, Alaska Region were in attendance. Initiation of Consultation letters were sent out to the identified consulting parties on August 7, 2017. A response was received from the SHPO office on August 22, 2017 stating there was no objection to the proposed Study Area or level of identification. No other responses to the Section 106 Initiation of Consultation letters were received. A response to the September 19, 2017 Findings Letter was received from the NPS on October 6, 2017 and SHPO concurrence with the DOT&PF findings was received on October 9, 2017. No responses were received from the other consulting parties.

In addition to the Alaska State Historic Preservation Officer (SHPO), other parties being contacted with this informational update and Inadvertent Discovery Plan for this project are: the National Park Service (NPS); the Native Village of Kivalina; the City of Kivalina; the Native Village of Noatak; NANA Regional Corporation; the Northwest Arctic Borough; NPS-Western Arctic National Parklands; and the Bureau of Indian Affairs (BIA).

Please direct your questions or comments to me at the address above, by telephone at 907-451-5293, or by e-mail at *thomas.gamza@alaska.gov*.

Sincerely,

Thomas A. Gamza
Cultural Resource Specialist-Archaeologist (PQI)
State of Alaska DOT&PF, Northern Region

Figure 1: Location and Vicinity Map
Figures 2-7: Project APE Enlarged Sections
Figure 8: Locations of NOA-00325 and NOA-00327 in Western Terminus Enlarged Section

Attachment 1: National Park Service response to the DOT&PF Findings October 6, 2017
Attachment 2: SHPO concurrence with No Historic Properties Adversely Affected Determination October 9, 2017
Attachment 3: Final Inadvertent Discovery Plan – Kivalina Evacuation and School Site Access Road

Electronic cc w/ enclosures:
Jonathan Hutchinson, P.E., DOT&PF Northern Region, Project Manager
Paul Karczmarczyk, DOT&PF Northern Region, Environmental Impact Analyst
Brett Nelson, DOT&PF Northern Region, Regional Environmental Manager
Kathy Price, DOT&PF, Statewide Cultural Resources Manager
Amy Sumner, DOT&PF Statewide Environmental NEPA Manager