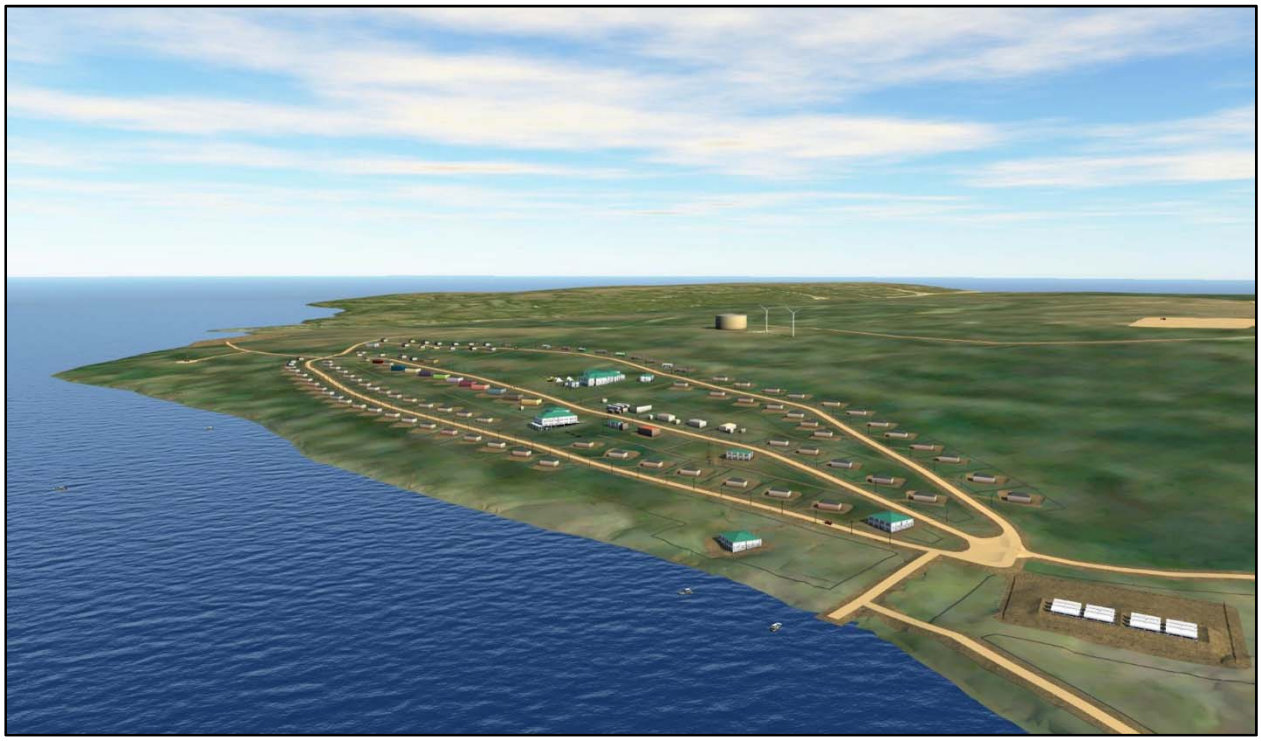
Record of Decision

Mertarvik Infrastructure Development
Nelson Island, Alaska



The Denali Commission
510 L Street, Suite 410
Anchorage, AK 99501

April 2018

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Record of Decision

Mertarvik Infrastructure Development
Nelson Island, Alaska

SUMMARY: This document constitutes The Denali Commission's Record of Decision (ROD) for the Mertarvik Infrastructure Development Project, in compliance with agency implementing regulations at 45 CFR 900 for the National Environmental Policy Act of 1969, as amended. The Final Environmental Impact Statement (FEIS) that informs this decision provided an in-depth analysis of the alternatives considered to achieve the purpose and need for the Federal action. This ROD documents the Denali Commission's decision and rationale for supporting construction of all critical infrastructure elements required to support the long-term occupation of a new 605-acre village site that will accommodate the residents of the Village of Newtok, Alaska, in accordance with the Newtok Village Council's (NVC) proposed action as described and analyzed in the accompanying FEIS. Specific infrastructure elements potentially funded and/or constructed, and the fiscal year in which they will be funded and/or constructed, will ultimately be dependent upon the availability of funding, and will likely employ a phased approach over several years.

The Commission is not proposing to fund or construct the new Mertarvik Airport. The Federal Aviation Administration (FAA) was a Cooperating Agency in the development of the FEIS and is expected to issue a separate Record of Decision related to potentially funding the construction of the new airport runway, taxiway, apron and appurtenant airport facilities.

AGENCY: The Denali Commission

ACTION: Record of Decision

PUBLIC INVOLVEMENT:

The Denali Commission published the notice of intent (NOI) to prepare an EIS in the *Federal Register* (*FR*) on March 3, 2017. The notice of availability (NOA) of the Draft EIS (DEIS) was published in the *FR* on December 29, 2017. The NOA of the Final EIS (FEIS) was published in the *FR* on March 9, 2018. No decision was made until the latter of the following dates: (1) 90 days after publication of the NOA for the DEIS: (2) 30 days after publication of the NOA for the FEIS (40 CFR 1506.10(b)).

ADDITIONAL COPIES: Copies of the FEIS and ROD are available at the Commission's web site (https://www.denali.gov/publications). Copies will also be available at The Denali Commission, 510 L Street, Suite 410, Anchorage, AK 99501.

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Acronyms and Abbreviations

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ADFG	Alaska Department of Fish and Game
ADOTPF	Alaska Department of Transportation and Public Facilities
ALP	Airport Layout Plan
ANTHC	Alaska Native Tribal Health Consortium
APDES	Alaska Pollutant Discharge Elimination System
ATV	All-Terrain Vehicle
BMP	Best Management Practice
CCHRC	Cold Climate Housing Research Center
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CLP	Community Layout Plan
CRA	Certificate of Reasonable Assurance
CVRF	Coastal Villages Region Fund
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FR	Federal Regulation
FRP	Facility Response Plan
GWR	Ground Water Rule
HUD	Department of Housing and Urban Development
MBTA	Migratory Bird Treaty Act
MEC	Mertarvik Evacuation Center
MHHW	Mean Higher High Water
MLLW	Mean Lower Low Water
MMPA	Marine Mammal Protection Act
MOA	Memorandum of Agreement
MSWLF	Municipal Solid Waste Landfill
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOA	Notice of Availability
NOI	Notice of Intent
NRHP	National Register of Historic Places
NTC	Newtok Traditional Council
NVC	Newtok Village Council
PSO	Protected Species Observers
ROD	Record of Decision

SCADA	Supervisory Control and Data Acquisition
SHPO	State Historic Preservation Officer
SPCC	Spill Prevention, Control and Countermeasures
SWPPP	Storm Water Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VPSO	Village Public Safety Officer
WOTUS	Waters of the United States

Record of Decision

Mertarvik Infrastructure Development
Nelson Island, Alaska

1. Introduction

This document constitutes The Denali Commission's (Commission) Record of Decision (ROD) for the Mertarvik Infrastructure Development Project. This ROD provides background on the selected alternative, summarizes the decision being made, summarizes the alternatives considered in reaching the decision, significant impacts (if any), discusses the mitigation measures to be implemented, summarizes the public participation process used in reaching the decision, and documents the Commission's decision.

2. Background

The Village of Newtok is an Alaska Native community of 374 residents (2016 Department of Labor estimate) located on the southwest coast of Alaska, on the banks of the tidally-influenced Ninglick River. A bend of the Ninglick River is rapidly eroding toward Newtok, with an average of nearly 70 feet of village land lost each year to a combination of river scour, permafrost thawing, and storm surge. The village has already lost its barge landing and landfill to erosion, will lose its drinking water source and begin to lose houses in 2018 and is expected to have its school and airport access threatened by 2020. Changes in local hydrology brought about by erosion have also increased vulnerability to flooding, limited boat and barge access in a community that is dependent on barge and air access for import of all supplies and materials, and impaired waste management practices at the village.

The Final Environmental Impact Statement (FEIS) assessed the potential environmental impacts of constructing critical infrastructure at a new community site at Mertarvik. Included in the analysis was a solid waste landfill; wastewater collection system and treatment lagoon; bulk fuel farm and fuel dispensing facility; power house and power distribution system; telecommunications building; water well field, treatment plant, storage tank, and distribution lines; housing; school; all associated connecting roads and trails; and a new airport runway, taxiway and apron.

2.1. Purpose and Need for the Proposed Action

The purpose of the Mertarvik Infrastructure Development project is to provide the people of Newtok with a place to live that allows them to keep their community and way of life within their traditional lands, while also providing the necessary infrastructure for a safe, sustainable, and healthy existence.

Few Alaska Native communities are as imminently threatened with displacement from coastal erosion as the village of Newtok. The rapidly advancing erosion of the Ninglick River shoreline

and increasingly severe flooding is expected to make Newtok's current location unsustainable for the community as early as 2020 and force the relocation of the village's residents.

3. Alternatives Considered

3.1. Selected Alternative & Environmentally Preferred Alternative

The selected alternative, also identified as the environmentally preferred alternative in accordance with 40 CFR 1505.2(b), involves funding and construction of critical infrastructure elements at Mertarvik in accordance with the Community Layout Plan (CLP) selected by the residents of the Village of Newtok and accepted by the Commission. The selected alternative is identified in the FEIS as CLP Alternative 2 and is discussed in Section 3.5 below.

3.2. No Action Alternative

Under the no action alternative, the comprehensive planned development of the new village infrastructure at Mertarvik would not occur, and the displaced residents would be left to determine their own individual course of action. It is likely that some portion of the Newtok community would settle at Mertarvik on their own and make use of the infrastructure already built. Non-Federal funding may be found for the piecemeal construction of additional homes and some utilities, but major infrastructure such as the airport and school would be difficult to fund in the absence of a comprehensive effort toward establishing a new community at Mertarvik.

At Newtok, the residents would gradually be displaced by the destruction of their homes, school, and other support facilities; by the increasing difficulty of life at Newtok; and would be forced to find new places to live as personal circumstances allowed. The Newtok community would be physically divided, and its goal of maintaining its strong identity and cultural foundation would become difficult or impossible.

As required by NEPA, the no action alternative was carried forward for analysis in the FEIS.

3.3. Alternatives Previously Considered but Not Carried Forward

The selected alternative has been shaped and constrained by a series of events, studies, and decisions occurring over the last four decades. The FEIS did not analyze previously eliminated alternatives because NEPA does not require the repetitive analysis of alternatives previously dismissed in a prior NEPA analysis unless they fall within the current scope of analysis and are "reasonable" alternatives. Therefore, many alternatives were dismissed at a lesser level of analysis than alternatives carried forward because they were clearly impractical, non-constructible, or did not provide valuable mitigation of potential impacts.

Alternatives that had been considered in the past, but fell outside the scope of analysis in the FEIS and were therefore not carried forward for further analysis include:

- Engineered solutions to stop or slow the erosion of the Ninglick River bank at Newtok, and allow the community to remain in place;
- The relocation of Newtok residents to other existing communities;

- Development of a new community site at a location other than Mertarvik;
- Community layout plans developed for Mertarvik prior to 2016.

Section 4.3 of the FEIS provided a comprehensive discussion of these alternatives, and since none of them were carried forward for analysis in the FEIS, they will not be further discussed here.

3.4. Alternatives Carried Forward

The three Mertarvik CLP alternatives developed in 2016-2017 by the Newtok Village Council (NVC) and the Commission were carried forward for analysis in the FEIS. All three of the CLP alternatives incorporated the Final Airport Layout Plan (ALP) conditionally approved by the FAA in 2014 as a major infrastructure element in the CLPs. The evaluation of airport location and layout alternatives was conducted by the FAA and Alaska Department of Transportation and Public Facilities (ADOTPF) prior to development of the CLPs, but was informed by the evolution of previous community layout plans (see section 4.5.2 of the FEIS for a detailed description of the ALP).

The three CLPs were developed in direct collaboration with the community of Newtok, over the course of 8 months in 2016-2017. The Commission and the Alaska Native Tribal Health Consortium (ANTHC) sought input from not only the NVC leadership, "…but also the elders, the hunters, the gatherers, and the future leaders studying at the Newtok Ayaprun School. The people that would serve the community of Mertarvik in the years to come were also represented: The Lower Kuskokwim School District, The Yukon Kuskokwim Health Corporation, the Association of Village Council Presidents, and many other partners. The layout further needed the technical guidance of the surveyors, architects, engineers, and builders that would be helping the community to design and construct the new community. And lastly, the layout required the consideration of the Federal and State agencies that would provide the funds needed to develop a healthy and sustainable Mertarvik" (ANTHC 2017a).

3.4.1. Goals

The Commission, working with the Newtok community, identified the following five goals for the CLP process (ANTHC 2017a):

> **1. Expedient Development.** The most commonly voiced goal of the community was to make the development of Mertarvik proceed as quickly as possible. The erosion and public health crises in Newtok require immediate action to develop a new community and cannot wait for an ideal set of resources, design, and construction conditions.
>
> **2. Pioneering Approach.** The residents of Newtok are committed to a "pioneering approach," a phased development in which community members would begin to move to and live in Mertarvik in advance of the complete build-out of the planned infrastructure.

3. Affordability of Construction. The cost of building an entire community is daunting; early estimates suggest that roughly $120 million will be needed for development of all community infrastructure. Minimizing each component cost of the relocation was an important factor for the community.

4. Affordability of Operation. Minimizing operations and maintenance costs was a critical goal in the development of the layout plan. This includes minimizing fuel and electricity use, reducing road maintenance needs, providing easy access to cover for the landfill, and reducing labor requirements.

5. Subsistence Lifestyle. The community's strong cultural foundation and traditional subsistence lifestyle needed to be represented in the CLP; access to subsistence resources and a focus on infrastructure development that minimizes impacts on the local habitat were important considerations.

To increase community ownership of the CLP process, it was critical for the community to have a formal choice in the selection of the final CLP. Surveys of the community found roughly equal numbers of people preferring to be located near the water, versus higher up on the slope. On the other hand, an analysis of the topography at the Mertarvik community site suggested that the CLP could be focused either around the existing development at the MEC and barge landing, where grades average 10 percent to 13 percent, or shifted farther to the east where grade is a flatter 5 to 7 percent.

ANTHC, as a Federal assistance award recipient and non-profit tribal health organization with the responsibility and authority to provide health services for Alaska Native and American Indian people living in Alaska, worked with the Commission to develop three alternative CLPs that attempted to balance these two divergent options, while adhering to the five CLP goals. CLP Alternative 1 was set relatively close to the water, to the east of the Mertarvik Evacuation Center (MEC). CLP Alternative 2 was centered on the MEC, with an option available for community development to be weighted more heavily either downslope or upslope from the MEC. CLP Alternative 3 was set much higher on the slope than either CLP Alternative 1 or CLP Alternative 2, and had a more elongated configuration than the other alternatives.

3.5. Description of Selected Alternative

The Mertarvik Infrastructure Development Project CLP alternative selected was Alternative 2, with some minor modifications made after selection by the people of Newtok. The selected alternative was accepted unanimously by a quorum of the NVC, in a resolution dated June 22, 2017.

3.5.1. Infrastructure Elements

The individual structures and features that make up the selected alternative, such as homes, community buildings, and utilities, are listed in Table 1. The selected alternative also includes nearly 28,000 linear feet of gravel roads and 14,350 linear feet of designed and maintained

gravel trails. The roads are assumed to have 40-foot wide beds; the width of the trails will vary according to their expected use and the local topography.

The selected alternative was designed using lot sizes assigned for each structure and facility. Many of the infrastructure elements have not yet been fully designed, so their structural footprint in Table 1 is estimated based on their planned use and on similar structures existing in other rural Alaska communities.

Design work on the infrastructure elements continues, particularly for essential utilities. Design plans and studies completed for Mertarvik as of November 2017 include:

- *Mertarvik Bulk Fuel & Rural Power System Conceptual Design Report*, August 2017 (Cooper *et al* 2017).
- *Newtok-Mertarvik Relocation Energy Master Plan, Final,* May 2017 (Cooper *et al* 2017).
- *Mertarvik Housing Master Plan*, February 2017 (CCHRC 2017).
- *Mertarvik Multi-Purpose Building Retrofit Feasibility Study*, January 2016 (CCHRC 2016).

These design documents and others are available on the Newtok Planning Group website, https://www.commerce.alaska.gov/web/dcra/PlanningLandManagement/NewtokPlanningGroup.aspx, and were incorporated by reference in the FEIS.

Table 1. List of CLP Infrastructure Elements, with Lot and Estimated Footprint Areas.

Number	Infrastructure Element	Lot Size Provided (acres)	Estimated Structure Footprint (acres)
1	Community Equipment Shop & Dry Storage	2.375	0.33
2	Bulk Fuel Storage	3.75	1.75
3	Lift Station	0.25	0.125
4	Barge Unloading area & Boat Storage Fisheries Support Center	3.50	0.33
5	Corporation Office	0.75	0.125
6	Store & Fuel Station	0.50	0.125
7	Power Facility	0.50	0.33
8	Coastal Villages Region Fund (CVRF) Shop	- [a]	0.25
9	Construction Camp & Water Storage Tank	0.75	0.125
10	Tom's Store	0.50	0.125
11	School	12.00	3.25
12	School Bulk Fuel Storage	- [a]	0.25
13	Washeteria	0.375	0.125
14	Church	0.375	0.10
15	Clinic	0.375	0.10
16	Elder Housing	0.375	0.125
17	Elder Housing	0.375	0.125
18	Tribal Office	0.375	0.125

19	Post Office	0.375	0.10
20	Fourplexes	0.375	0.125
21	Fourplexes	0.375	0.125
22	Teacher Housing	0.50	0.125
23	Village Public Safety Officer's (VPSO) Office, Garage, & Living Quarters	0.75	0.125
24	Telecommunications Building	1.25	0.25
25	Wastewater Treatment Lagoon	20.00	14.00
26	Water Treatment Plant & Water Storage Tank	14.00	1.25
27	Well Field	- [a]	0.10
28	Airport Runway, Taxiway, & Apron	495.00[b]	58.6[c,d]
29	Landfill	8	7
30	Single Family Homes, total (100 each new)	37.50	10.00
	Total Occupied Acreage	**605**	**127**

a. Infrastructure element not provided a separate lot.
b. 495-acre value refers to the total area that must be deeded to the State of Alaska for operation of the airport.
c. Acreage value for the airport footprint is from PDC Engineers 2017; other values from ANTHC 2017b.
d. This acreage does not include a crosswind runway.

The following sections provide descriptions of select infrastructure elements, with their likely characteristics, requirements, and construction considerations. These descriptions are based on geotechnical investigations, preliminary engineering reports, regulations, design standards, and/or typical design and construction practices with similar facilities constructed in other rural Alaska communities. While detailed design will continue, these efforts are unlikely to change the results of the analysis of impacts.

Solid Waste Landfill: The facility will be a Class III Municipal Solid Waste Landfill (MSWLF) designed and permitted in accordance with Alaska Department of Environmental Conservation (ADEC) Solid Waste Management regulations (18 AAC 60, as amended). The landfill will be sized for a 20-year design population of 518 people, based on a projected annual growth rate of approximately 6.5 percent; and a per capita waste generation rate of 7.5 lbs./day.

Wastewater Treatment Facility: The treatment facility will be a two-cell facultative wastewater lagoon, typical of wastewater treatment facilities used throughout rural Alaska. These lagoons are easy to operate and maintain, they handle a wide range of flows and provide for many years of accumulated sludge storage. The facility shall be designed, permitted, and constructed in accordance with ADEC Wastewater Disposal Regulations (18 AAC 72, as amended), and in accordance with ADEC "Lagoon Construction Guidelines."

Energy Systems: The *Mertarvik Bulk Fuel and Rural Power System Conceptual Design Report*, was written by Gray Stassel Engineering, Inc. and HDL Engineering Consultants and published in August 2017 (Cooper *et al* 2017). The following descriptions of bulk fuel and power generation systems have been excerpted from this report.

Bulk Fuel Storage and Dispensing Facilities: The new fuel storage tank farm will consist of two gravel containment cells lined with a fuel resistant liner. New single-wall, horizontal fuel tanks will be installed inside the containment including: (8) 27,000-gallon bulk tanks, (2) 20,000-gallon bulk tanks, (1) 12,000-gallon intermediate tank, and (1) 20,000/8,000-gallon dual compartment tank for a gross fuel capacity of 214,000 gallons of diesel fuel and 82,000 gallons of gasoline. The tank farm will also include two marine header fill points and associated piping; truck fill; retail sales dispensing tank and dispensers; and fuel conveyance piping between the tank farm, retail sale dispensing tank, and intermediate power plant tank.

Power House: The power plant will consist of a pre-fabricated module with a segregated generator room and control room/office. The module will include three new Tier-2 and Tier-3 marine diesel engine-generators, new automatic start/stop/paralleling switchgear, a new heat loop for generator heat recovery with community buildings, remote radiators with variable speed fan control, a fire suppression system, critical grade exhaust silencers and associated engine coolant piping and ventilation equipment. The power plant will connect to a new intermediate fuel storage tank via an automated fuel transfer pipeline; automated load balancing; new switchgear; and a supervisory control and data acquisition (SCADA) system.

Power Distribution System: The electrical distribution system will be 12.47/7.2 kV, 3-phase overhead construction to minimize line losses, and meet the long term needs of the community. Pole-mounted transformers will stepdown the 7200 V distribution voltage and provide 120/240 V single-phase power to residential services. For larger customers, 208 V and 480 V 3-phase power will be provided, as required.

Water Storage Tank: Based on a 20-year design population of 518 people, and daily per capita water consumption of 75 gallons, a conservatively sized water storage tank for Mertarvik will require a capacity of approximately 400,000 gallons. A tank of this size is estimated to have a 40 to 48-foot-diameter floor with a height of 32 to 40 feet. The water storage tank is expected to be an insulated, bolted steel ground tank, typical of water storage tanks throughout rural Alaska. The tank will be erected on a structural gravel pad adapted for the specific conditions at the Mertarvik site.

Water Distribution and Wastewater Collection Lines: Long-term development plans include installation of community water supply and wastewater collection systems. The water distribution system is expected to be a network of nominal 6 and 8-inch insulated and buried pressure pipes emanating from the water treatment plant site. Water distribution systems will be designed and permitted in accordance with ADEC Drinking Water regulations.

Community Roads: The selected alternative includes approximately 5.3 miles of roads, including town site subdivision roads (2.2 miles), the quarry/landfill road (1.8 miles), the airport road (1.0 mile), and the lagoon access road (0.3 mile).

Buildings and Foundations: Other structures included in the selected alternative are the school and teacher housing, water treatment plant, washeteria, clinic, post office, tribal and corporation offices, store, elder housing, and private residences.

3.5.2. Sequence of Construction

The Mertarvik Strategic Management Plan (Agnew::Beck Consulting 2012) envisioned the Mertarvik development and relocation of Newtok residents occurring in four phases:

- **Phase 1: *Uplluteng* (Getting Ready)**. This phase includes all planning activities and initial infrastructure construction to-date, prior to active habitation of the site.
- **Phase 2: *Upagluteng* (Pioneering)** - (2017-2018). Seasonal habitation by approximately 25 to 100 people, living with limited community infrastructure.
- **Phase 3: *Nass'paluteng* (Transition)** - (2019-2022). A steady increase in population from roughly 100 to 200 people, with services and community infrastructure added and scaled up to accommodate the growth.
- **Phase 4: *Piciurlluni* (Final Move)** - (2023-2027). The final relocation of all Newtok residents (approximately 350 people) into an essentially complete new community.

The stated goal was to have all Newtok residents relocated to the new site within 10 years. Certain population thresholds at Mertarvik may need to be demonstrated before some Federal and State agencies are able to provide key community services or invest in community facilities at Mertarvik, such as the airport, school, and Post Office. For example, the United States Postal Service (USPS) has a set threshold of 25 families or 75 persons before they will provide mail service to a community. Delay in the establishment of these facilities in Mertarvik may impact the beginning and duration of the transition period wherein residents make the move from Newtok to Mertarvik. The Mertarvik Strategic Management Plan recommended building roads and pads supporting individual pieces of infrastructure a year in advance of erecting those structures, where possible, and pacing critical service (power, water, sewer, etc.) development ahead of actual need. Implementation of the recommended construction sequence will be highly dependent on funding availability, and the sequence is likely to be subject to considerable adjustment.

The Newtok-Mertarvik Energy Master Plan (Cooper *et al*, 2017) presented a similar recommended construction timeline based on a phased buildup of energy infrastructure at Mertarvik paired with a draw-down of the Newtok power plant.

The two factors that have the greatest and as yet unknown potential to affect the schedule for the selected alternative are funding for each Federal agencies' required work and the effects of on-going and potentially accelerated erosion rates in Newtok.

3.6. Comments on the Draft EIS (40 CFR 1503.4)

Four letters/e-mails providing comments on the DEIS were received during the 45-day comment period (see Appendix A of the FEIS):

1. Alaska Native Tribal Health Consortium (ANTHC);
2. U.S. Department of the Interior, Office of Environmental Policy and Compliance;
3. U.S. Environmental Protection Agency, Region 10; and
4. Alaska State Historic Preservation Office, Office of History and Archaeology

The comments received consisted primarily of commendations, recommendations for minor corrections, or requests for clarifications. No errors in fact were identified, and no comments were received which modified the results of the environmental analyses undertaken or the conclusions reached. As a result, no revisions or clarifications were made to produce the FEIS beyond minor administrative clarifications.

4. Mitigation Measures (40 CFR 1505.2(c))

As required by the President's Council on Environmental Quality (CEQ) NEPA regulations, the Commission identified and adopted all practicable mitigation measures presented in the FEIS to avoid or minimize environmental harm accruing to construction of the infrastructure elements identified in the selected alternative.

From the earliest stages in the process of developing the selected alternative, environmental considerations were incorporated in order to avoid, minimize or compensate for anticipated environmental consequences. For example, each of the three alternate CLPs avoided all known cultural sites and provided watershed and wellhead protection for the Mertarvik spring. The new electrical generators to be installed will greatly reduce air emissions compared to the existing generators in use in the village of Newtok, and the wastewater collection, treatment and disposal system will greatly modernize the honey bucket collection system now in use at Newtok. As a result, no significant direct, indirect, or cumulative negative environmental impacts were identified as a result of the analyses performed in the FEIS. The complete language of the mitigation measures, as well as design modifications and terms and conditions, are provided in the FEIS.

Mitigation related to all construction activities analyzed in the EIS are comprised primarily of Best Management Practices (BMP) that are commonly utilized during construction in this area of Alaska. In addition, numerous permits will be required prior to construction and/or operation of various infrastructure elements of the selected alternative, each expected to identify conditions under which infrastructure element will be constructed and/or operated, as well as applicable monitoring and enforcement provisions (40 CFR 1505.2(c)).

Table 2 provides a list of recommended consultations and required permits and approvals from various regulatory agencies, and the anticipated time frames to complete each process. Also included are milestones when certain activities should be initiated. This table does not represent an exhaustive list of requirements but highlights the major milestones in the project implementation process.

Table 2. Permitting Considerations for Mertarvik Infrastructure Development Elements

Agency	Permit/Clearance/Consultation	When to Initiate	Approximate Timeline to Acquire Permit or Clearance
Federally Funded Actions			
NEPA	Environmental Assessment (EA)	Review need for NEPA compliance upon receipt of funding for a specific infrastructure element	90-160 days*
SHPO & Tribes	Initiation of Consultation	Once the planning of an infrastructure element has been initiated	30 days
	Finding of No Historic Properties Affected	Upon receiving concurrence of such from SHPO	30-120 days
State and Federally Funded Actions			
USFWS	Section 7 Consultation for Threatened and Endangered Species	Once the planning of an infrastructure element has been initiated	30-120 days**
	Consultation regarding clearing windows for nesting birds and emperor geese	For any proposed ground disturbing activities	14-30 days
NMFS	Consultation for Essential Fish Habitat (EFH)	For any in-water work in the Ninglick River	14-30 days
ADFG	Title 16 Fish Habitat Permit	For any work within Takikchak River	30-90 days
USACE	Clean Water Act Section 404 Permit	Once the planning of an infrastructure element has been initiated and fill in WOTUS is expected	120 days
ADEC	APDES Construction General Permit	1 month prior to construction, once 100% construction documents are complete	30 days***
Privately Funded Actions			
ADFG	Title 16 Fish Habitat Permit	For any work within Takikchak River	30-90 days
USACE	Clean Water Act Section 404 Permit (Individual or Nationwide)	Once the planning of an infrastructure element has been initiated and fill in WOTUS is expected	120 days
USFWS	Consultation regarding clearing windows for nesting birds and emperor geese	For any proposed ground disturbing activities	14-30 days
ADEC	APDES Construction General Permit	1 month prior to construction, once 100% construction documents are complete	30 days

* If required, initiation of the appropriate NEPA document will begin with informal agency scoping and data-gathering. The NEPA process will continue until a Categorical Exclusion, Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is finalized.

+ Length of consultation will depend on determination of affect by regulatory agency.

** Includes review and approval of SWPPP, pre-construction site visit, and submittal of notice of intent.

4.1. Soils

Direct impacts would consist of placement of fill for building pads and road prisms, creating minor and highly localized areas of altered topography and surface soil geology. Construction in the area, particularly of building foundations and roads, will need to be adapted to the presence of permafrost, and minimize the potential for degrading permafrost and causing subsidence. Long term changes to the area permafrost profile as a result of filling and construction is a potential indirect effect. Because of the discontinuous nature of the permafrost in the area, and the highly variable depth to bedrock, further geotechnical investigation may be necessary before deciding the final siting of some structures.

- Grading within the footprint of the selected alternative will be minimized to only those areas where necessary to meet the construction and operational requirements of the Selected Alternative.

4.2. Water Quality

4.2.1. Surface Water

Temporary surface water quality impacts associated with construction of the proposed Mertarvik infrastructure include construction-related turbidity at the barge landing site during the contractor's mobilization and demobilization, run-off from the construction of haul roads to/from construction sites, and runoff of exposed soils from construction surfaces (e.g., roads, building pads). If gravel must be imported for fill via barge (considered very unlikely), barge operations may increase turbidity around the barge landing. While construction of infrastructure is not expected to directly impact streams or ponds, erosion of fill during and immediately after construction of infrastructure elements may increase suspended sediment levels in surface waters (i.e. precipitation and snow melt runoff) at and around infrastructure footprints, specifically, haul routes, stockpile and staging areas, equipment access routes, roadways, and building pads.

Most construction activities at Mertarvik will take place under the Alaska Construction General Permit for Storm Water Discharges from Large and Small Construction Activities (CGP); the current CGP became effective in February 2016. The 2016 CGP, administered under the Alaska Pollutant Discharge Elimination System (APDES), authorizes storm water discharges from large and small construction-related activities that result in a total land disturbance of equal to or greater than 1 acre, and where those storm water discharges enter waters of the U.S. The goal of the CGP is to minimize erosion and reduce or eliminate the discharge of pollutants, such as sediment carried in storm water runoff from construction sites through implementation of appropriate control measures. In order to ensure protection of water quality and human health, the permit describes control measures that must be used to manage storm water runoff during construction activities. While many individual elements of the CLP will involve less than 1 acre of disturbed land or exposed fill, the overall plan for Mertarvik meets the definition of a "common plan of development," in which "multiple separate and distinct construction activities may be taking place simultaneously or on different schedules, but under one master plan."

Development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) is the key condition of the CGP. The SWPPP is generally prepared by the construction contractor; it is unclear at this time if multiple SWPPPs or one overarching SWPPP will be required for construction at Mertarvik. Other CGP requirements include submission of the SWPPP for review, filing of a Notice of Intent, regular site inspections, and revisions to the SWPPP whenever necessary to protect water quality, or to reflect changes in site conditions. SWPPP BMPs may include:

- Construction of infrastructure features will follow the approved infrastructure element design and will implement all required BMPs to minimize effects. Such sediment management BMPs could include silt fences, coir logs, and berms around areas of disturbed soil or soil stockpiles;
- If construction leads to noticeable ponding or changes to surface runoff patterns that may lead to erosion, culverts, French drains, and rock-lined swales may be used to redirect and reduce the velocity of surface flow; and
- Specific sediment management BMPs to be utilized during the construction of particular infrastructure elements will be identified in the SWPPPs.

Recommended Measures:

In addition to the mitigation measures identified above, additional recommendations for reducing impacts to surface waters are provided below:

- The Takikchak River will be buffered by its distance from direct construction impacts. However, its relative proximity to the proposed Mertarvik community site is likely to subject it to greater use by the residents of Mertarvik along a greater extent of its length than it currently receives. ATV access to and across the river channel has the potential to cause breakdown and erosion of the river bank, with subsequent harm to water quality and the aquatic environment. To avoid impacting the five salmon species that utilize the Takikchak River (as well as other fish species), the residents of Mertarvik should work with the ADFG to establish a minimally damaging ATV crossing point at the Takikchak River under a stream crossing General Permit in accordance with Alaska law (AS 16.05.871). An established stream crossing point could be “hardened” by laying a pavement of heavy cobbles across the streambed and protecting the streambank approaches with gravel and/or half-buried transverse timbers.

The USEPA requires two sets of regulatory submittals for fuel facilities from which a discharge could impact navigable water or adjoining shorelines. The Spill Prevention Control and Countermeasures (SPCC) Plan identifies requirements for facilities that have a minimum aggregate storage capacity of 1,320 gallons. The SPCC Plan must address every container 55 gallons and larger and must be certified by a Professional Engineer. Facility Response Plans (FRPs) are required for facilities that are filled by marine vessels and which have a storage capacity of more than 42,000 gallons.

The U.S. Coast Guard’s “Facilities Transferring Oil or Hazardous Material in Bulk” regulations apply to fuel facilities capable of transferring fuel to or from a vessel with a capacity of 10,500

gallons or more. This regulation also requires a Facility Response Plan and additionally an Operations Manual. The FRP is similar to the USEPA FRP and outlines spill planning requirements for the Coast Guard regulated portion of the facility. The Operations Manual addresses the procedures and equipment required for receiving fuel at the facility. Additionally, the Coast Guard requires that a Letter of Intent to Operate be submitted to the captain of the port for approval prior to delivery of fuel.

- Fuel storage at the barge landing will be consolidated, with secondary containment and spill response equipment made readily available; and
- A SPCC plan, a FRP, and Operations Manual will be developed and implemented during construction and prior to the operations phase of the selected alternative. Adequately-sized secondary spill containment will be incorporated to ensure proper capture and control measures for potential spills.

As part of community road and trail design, a hydrologic analysis will be completed involving an evaluation of surface water movement based on climatological data and watershed characteristics. The hydrologic analysis will be used to locate and size culverts in a manner that will maintain natural drainage patterns to the extent practicable.

Prior to the start of any construction activities, a written construction management plan shall be developed to include the following practices:

- designated roads, trails and pads shall be used to access project areas.
- project construction boundaries shall be clearly marked to avoid any inadvertent encroachment on wetlands.
- topsoil will be segregated and preserved during excavations to minimize disturbance to and facilitate restoration of wetlands. Topsoil will be replaced in the uppermost portion of the trench, and seeding with a native seed mix will occur immediately following construction of each section of line.
- process for removal of all spoils, debris and other construction wastes from the active construction site for disposal at previously disturbed areas are designate uplands sites.
- provisions for management of all petroleum products and hazardous material in accordance with the state and federal regulations.
- storage of spill response equipment in all construction vehicles and at various staging areas for rapid access in case of an accidental spill or leakage.
- stockpile of excavated material within disturbed areas such as roadways and on existing pads to the greatest extent practicable; and the replacement of fill in trenches as soon as possible after completion of the excavation.

4.2.2. Groundwater

Potential direct or indirect threats to groundwater include releases of fuel or other contaminants from fuel storage tanks and associated pipelines, and leachate from the landfill and wastewater treatment lagoon. The groundwater that feeds Mertarvik Spring is potentially vulnerable to contamination. Little of the currently planned development lies upgradient of the spring, but a

large release of fuel or other contaminants from the airport or along the quarry road could potentially impact the quality and usability of water drawn from it. The likelihood and route of contaminants migrating into area aquifers would be strongly influenced by the presence or absence of permafrost and the relationship of groundwater to the subsurface basalt layers at any particular release site.

- The siting of each potential pollutant source will be guided by a source water assessment and the development of a wellhead protection program as required by the Safe Drinking Water Act's Ground Water Rule (GWR) (40 CFR Part 141, Subpart S), as implemented by the Alaska Department of Conservation;
- Operation of the new Class III Municipal Solid Waste Landfill (MSWLF) will be subject to Alaska Department of Environmental Conservation (ADEC) approval of its final design, and implementation of permit conditions to avoid adverse effects. Additionally, a Class III Landfill Operations Plan will also be required; and
- Operation of the new wastewater treatment system will be subject to ADEC approval of its final design, and implementation of the National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit conditions governing the discharge of effluent into Baird Inlet in accordance with Section 402(b) of the Clean Water Act (33 USC 1342(b)). It is anticipated that the lagoon will be permitted under a general permit for small domestic lagoons that discharge to surface water. Effluent limits and monitoring requirements will be defined in the permit.

4.3. Air Quality

Air emissions sources at Mertarvik will include temporary construction-related emissions, emissions from completed stationary infrastructure sources (e.g., the power plant and heated structures), private mobile sources such ATVs and snow machines, and non-point sources such as roadways. Construction-related emissions are expected to consist primarily of exhaust from heavy construction equipment, vehicles, and electric generators. Airborne particulates will be generated from the transport and placement of gravel fill extracted from the quarry, and from the transport and management of excavated soils, especially during airport construction. Temporary air quality impacts off-site include any aircraft or barge-related emissions related to shipping infrastructure material via aircraft or barge, or fill material via barge to the proposed construction site. Construction-related emissions will be generated through the life of the CLP construction at Mertarvik (currently projected to be completed in 2017), but will vary greatly from year to year depending on the level of construction activity. The construction-related emissions will also be highly seasonal, as most construction work will occur in ice-free months.
Best management practices to reduce impacts to air quality during construction include:

- The area of grading and vegetation removal will be limited to only the area required for construction and subsequent use by the community;

- Construction activities will utilize dust control palliatives (e.g., water or approved chemical products) to minimize the lofting of particulates from gravel surfaces and gravel-generations activities during construction;
- Speed limits will be established to minimize dust from ATV and mobile construction equipment traffic on gravel roads;
- Contracts will specify that any and all equipment used meet emissions requirements at the time the equipment was manufactured; and
- Recommend that any tampering with engines be prohibited and continued adherence to manufacturer's recommendations be required.

The principle stationary sources of air emissions at Mertarvik will be the interim and permanent diesel-electric power plants. This equipment will be operated in accordance with State of Alaska air quality regulations; consultation with the State Air Permitting Division will be needed to establish air quality permit requirements for the power plant. Because the local and regional air quality environment is in "attainment" status under the CAA, meaning no criteria pollutant levels have been exceeded, and as no increase in total community or airport emissions (beyond temporary construction emissions) is expected, neither an emissions inventory nor modeling of air quality impacts is necessary.

Recommended Measures:

In addition to the construction mitigation measures identified above, additional recommendations for reducing impacts to air quality after occupation of Mertarvik are provided below:

- Recommend that air quality be maintained within the established Mertarvik community through regular inspection and maintenance of the power plant and oil-fired heaters, encouraging the proper care of small engines, and the replacement of obsolete models.

4.4. Natural Resources

4.4.1. Threatened and Endangered Species

The USFWS concurred with the Commission's determination that the proposed action may affect but is not likely to adversely affect spectacled eiders and Steller's eiders in a letter dated June 20, 2017. No conservation recommendations were proffered. General measures to minimize the degradation of area wetlands and waterways, through sediment management and thoughtful layout of roads and wastewater management, will serve to avoid impacts to these Endangered Species Act (ESA) listed species.

The Commission made the determination to the USFWS that the proposed action and associated vessel activity will have no effect on northern sea otters or the short-tailed albatross; the USFWS did not challenged this determination.

The NMFS recommended the following general measures to minimize the risk and harm to protected marine species (ESA and MMPA):

- To reduce the risk of collisions with protected species, proposed action-related vessels will be limited to a speed of 8 knots, or the slowest speed above 8 knots consistent with safe navigation:
    - when within 3 nautical miles of any of the Steller sea lion haul outs or rookeries shown on Figure 38 of the FEIS;
    - when transiting the North Pacific right whale critical habitat areas shown on Figure 38 of the FEIS; and
    - when transiting the Cook Inlet beluga whale critical habitat areas;
- Vessel operators will strive not to approach within 100 yards of a marine mammal to the extent practicable, given navigational and safety constraints; and
- The contractor performing the work will prepare an Oil Spill Prevention and Control Plan describing steps to avoid and mitigate releases of hazardous substances.

The NMFS recommended special conservation measures to minimize the impacts of vessel strikes on Cook Inlet beluga whales and North Pacific right whales within their respective critical habitat:

- Exercise special caution in the vicinity of the Susitna Delta to minimize the impacts of vessels within this seasonally vital Cook Inlet beluga whale habitat. The Susitna Delta Exclusion Zone (Figure 42 of the FEIS) is defined as the union of the areas defined by:

    - a 10-mile (16 km) buffer of the Beluga River thalweg seaward of the mean lower low water (MLLW) line, a 10-mile (16 km) buffer of the Little Susitna River thalweg seaward of the MLLW line, and a 10-mile (16 km) seaward buffer of the MLLW line between the Beluga River and Little Susitna River; and
    - The buffer extends landward along the thalweg buffers to include intertidal area up to mean higher high water (MHHW). The seaward boundary has been simplified so that it is defined by lines connecting readily discernable landmarks.

For vessels operating in the Susitna Delta Exclusion Zone, the following should be implemented:

- All vessels operating within the designated Susitna Delta area should maintain a speed below 4 knots. Crews must note the numbers, date, time, coordinates, and proximity to vessels of any belugas observed during operations, and report these observations to NMFS;
- Protected Species Observers (PSOs) must be in place to monitor for ESA-listed species prior to and during all vessel movements when vessels are under power (propellers spinning) within the Susitna Delta Exclusion Zone. PSOs are not required to be observing when vessels are not under power (in gear);
- PSOs must be located in a position that affords a view of all waters within a 100-meter radius of all vessels under power (in gear);
- Exercise special caution in the vicinity of the Susitna Delta to minimize the impacts of vessels within this seasonally vital Cook Inlet beluga whale habitat;

- Vessel operators must avoid moving their vessels when PSOs are unable to adequately observe the 100-meter zone around vessels under power (in gear) due to darkness, fog, or other conditions, unless necessary for ensuring human safety; and
- If any vessels enter the Susitna Delta Exclusion Zone at any time, PSOs must record and email to NMFS: date, time, number, and geographic coordinates of ESA listed marine mammals observed during vessel movements, and descriptions of any deferred vessel movements or vessel re-directions.

The vessel operator should avoid transits within designated North Pacific right whale critical habitat (Figure 38 of the FEIS). If transit within North Pacific right whale critical habitat cannot be avoided, NMFS recommends a route along the western boundary of the critical habitat where historic and contemporary observations indicate that North Pacific right whales are not as concentrated as other areas in the critical habitat. In addition, if transit within North Pacific right whale critical habitat cannot be avoided, NMFS recommends that transit in right whale critical habitat be limited to between September and March, a time of year right whales may be at lower numbers in the Bering Sea.

If transiting in North Pacific right whale critical habitat, vessel operators are requested to exercise extreme caution and observe the 10-knot (18.52 km/h) vessel speed restriction. Operators transiting through North Pacific right whale critical habitat should have trained PSOs actively engaged in sighting marine mammals. PSOs would increase vigilance and allow for reasonable and practicable actions to avoid collisions with North Pacific right whales. Operators will maneuver vessels to keep 800 meters away from any observed North Pacific right whales while within their designated critical habitat, and avoid approaching whales head-on consistent with vessel safety. Vessels should take reasonable steps to alert other vessels in the vicinity of whale(s), and report of any dead or injured listed whales or pinnipeds.

The restrictions noted above are NMFS recommendations made prior to the conclusion of final project consultations. Mitigation measures required by NMFS will be established in a final ESA determination completed during the USACE Department of the Army (DA) section 404 permitting process as delineated below.

On behalf of the Commission, the USACE submitted an ESA determination letter to the NMFS dated 24 May 2017, in which the USACE determined that the proposed action activities may affect, but not likely to adversely affect, the ESA-listed marine species under NMFS jurisdiction identified in the letter. The NMFS declined to concur, stating that the proposed actions were too prospective at this time, that a NEPA analysis (e.g., the preparation of the FEIS) alone was insufficient to trigger an ESA Section 7 consultation, and that the NMFS would wait until brought into consultation by the USACE Regulatory Division as it processes individual Department of the Army (DA) permit requests pursuant to Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act (RHA).

4.4.2. Migratory Birds

Development of new infrastructure at the Mertarvik site on Nelson Island would result in direct impacts to a very small proportion of the biological resources and habitat available in the area.

The risk of violations of the Migratory Bird Treaty Act (MBTA) will be minimized by the following:

- When practicable, vegetation clearing and ground-disturbing activities will be conducted outside the migratory bird nesting season (May 5 and July 25), to avoid destruction of active bird nests, eggs, or nestlings, thereby avoiding violations of the MBTA;
- Conduct fill-placement or ground-clearing activities prior to May 5 or after July 25, or performing preliminary vegetation-clearing outside the nesting period such that the future construction site no longer provides suitable nesting habitat;
- Excluding ground-nesting species from an imminent construction site, by laying tarps or other ground coverings at the site and/or placing deterrent devices (e.g., Mylar® flash-tape fastened to wooden stakes, etc.), prior to the start of and during the nesting season; and,
- Where the preemptive avoidance measures described above are not possible, the construction site will be surveyed for active nests prior to construction activities, and any nests found will be marked and protected until the young hatch and depart the nest. Additional consideration may be required in the fall to avoid impacts to emperor geese or other waterfowl that may feed on crowberry tundra habitat in the area. Consultation with USFWS will occur prior to construction to confirm construction windows.

Table 3 summarizes the migratory bird nesting periods, and type of construction that may be affected.

Table 3. Construction and Bird Nesting Windows for Mertarvik

Activity	Work Window											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Clearing, Site Preparation+												
Materials excavation, stockpiling within previously disturbed areas												
Construction of building pads, placement of fill*												
Utility installation, vertical construction												
Revegetation, restoration of disturbed areas												
Relocation of structures*												

Shaded areas depict time frames where no future work of that type should occur.

Orange indicates a work window to protect nesting birds

Gray indicates a potential work window to protect emperor geese during feeding

+Site preparation includes ground disturbing activities or disturbances.

*Construction of buildings pads/relocation of buildings could commence within no work window if site preparation has been previously completed and it is known that no nesting birds are present.

Recommended Measures:

All-terrain vehicle (ATV) traffic will increase in the community and will likely extend to areas well beyond the community, potentially leading to impacts to migratory birds ranging from severe (e.g. nest trampling) to moderate (e.g. habitat degradation) or minor (e.g. temporarily displacing from disturbance, noise or physical presence).

- Impacts from ATV's could be minimized by establishing designated trails in resilient habitat (i.e. firm level ground) from the community to popular locations such as subsistence sites or connections to other communities on Nelson Island.

4.4.3. Wetlands

Wetlands dominate the Mertarvik area, with uplands existing in fragments too small and discontinuous to be preferentially targeted for construction impacts. Impacts to wetlands were quantitated using the best available information, but the results provided in the FEIS were a rough order of magnitude and are subject to review during the Federal permitting process required under Section 404 of the CWA. The infrastructure elements that comprised the selected alternative have not yet been evaluated by the Regulatory Division of the USACE Alaska District, the enforcement agency for CWA Section 404 in Alaska, and the permitting authority for all placement of fill in wetlands. The USACE Regulatory Division has stated that it will not issue permits for the project as a whole as described in this FEIS because of the uncertain project timeline and insufficient details on construction methods and other potential site-specific impacts. The expectation is that entities involved in the proposed construction of various infrastructure elements that involve the placement of fill materials into waters of the U.S. (WOTUS) will apply for the DA permits required for their specific actions. The USACE Regulatory Division will then make its own independent evaluation of the environmental impacts and significance of the proposed discharge. The USACE permit review process includes the NEPA analysis process and includes public notice, consultations with resource agencies, consideration of comments received, written evaluation of environmental impacts, and compliance determinations with the CWA Section 404(b)(1) Guidelines. Once expected impacts to wetlands have been avoided and minimized to extent practicable, compensatory mitigation (restoration, creation, enhancement, preservation) may be developed and required by the USACE Regulatory Division. Under CWA Section 401, the ADEC will independently certify that the proposed construction of various components of the proposed infrastructure that involve the placement of fill materials into WOTUS complies with the State Water Quality Standards for actions within State waters and issue a Certificate of Reasonable Assurance (CRA).

The USACE Regulatory Division determined that it will evaluate impacts to wetlands and determine the appropriate level of mitigation as it receives permit applications for specific infrastructure element construction actions; therefore, the Commission did not attempt to prematurely propose wetland mitigation activities for infrastructure development within the FEIS given that further impact analysis will be conducted via more detailed future analysis. Mitigation proposals made at this time would be pre-decisional to the USACE Regulatory Division's permit evaluation process and its chosen approach to each permit application.

The USACE Regulatory Division may add special conditions to DA permits whenever such conditions are necessary to satisfy legal requirements or to otherwise satisfy the public interest requirement. These permit conditions will be directly related to the impacts of the proposal, appropriate to the scope and degree of those impacts, and reasonably enforceable. Unavoidable adverse impacts to waters of the United States that result from activities authorized under Section 404 of the Clean Water Act, and/or Sections 9 or 10 of the Rivers and Harbors Act may require compensatory mitigation

Special conditions will be identified during the subsequent NEPA reviews that will be undertaken prior to the issuance of individual DA permits by the USACE Regulatory Division in accordance with Section 404 of the Clean Water Act (CWA). The USACE Regulatory Division will utilize functional assessment methodologies fully consistent with the requirements of the USEPA's CWA Section 404(b)(1) Guidelines. All mitigation measures and conditions imposed through the issuance of individual permits will be fully implemented, thereby rendering impacts to wetlands as less than significant.

Typical permit conditions that may be incorporated into DA permits include the following:

- Requirement that temporary wetland impacts be restored to pre-existing contours, elevations, vegetation, habitat type and hydrology.
- Requirement for installation of silt curtain barriers with weighted skirts that extend to within a defined distance from the bottom around all in-water work areas. The turbidity barriers may be required to remain in place, monitored for effectiveness and maintained until the authorized work has been completed and all suspended and erodible materials have been stabilized.
- Requirement for installation of erosion control measures along the perimeter of all work areas to prevent displacement of fill material outside authorized work areas. Erosion control measures may be required to remain in place and be maintained until all authorized work is completed and the work areas is stabilized. Upon completion of the final grading of the land surface, slopes, land surfaces, and filled areas may have to be stabilized using sod, degradable mats, barriers, or a combination of similar stabilizing materials to prevent erosion.
- Requirement that only clean fill material be used, free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete blocks with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.
- Requirement that all excavated or dredged material being displaced be disposed of at a designated upland location.
- Requirement that all jurisdictional work in marine waters, including fills or structures, occur within a designated window of time, to prevent impacts to migrating salmon.
- Requirement that natural drainage patterns be maintained using appropriate ditching, culverts, storm drain systems, and other measures to ensure hydrology is not altered.
- Requirement that a project minimize alterations to water circulation patterns to the extent practicable. If it is determined by the USACE that the project negatively impacts the

hydrology within the wetland, there may be a requirement to take additional measures (i.e. install additional depressed road beds, culvert(s), or a similar water conduit) to re-establish the hydrology of the area to that of pre-construction conditions.
- Requirement that project boundaries be staked or flagged every 100 feet prior to construction to prevent inadvertent encroachment into adjacent wetlands.
- Requirement that all excavated material will be reused to the maximum extent possible. Fill will be placed as soon as possible after excavation to ensure that the substrate is not exposed for an extended period.

4.5. Cultural Resources

The Commission initiated Section 106 consultation in accordance with the National Historic Preservation Act (36 CFR 800.4(b)) in the spring of 2017. Development of the Mertarvik community will not result in any adverse effects on known historic properties or the Mertarvik Spring. The Mertarvik community layout plan purposefully avoided impacts to the clay pits (XBI-183) and the Mertarvik Spring.

- If future work at the Mertarvik community site cannot avoid XBI-183 or the Mertarvik Spring, consultation under Section 106 of the NHPA (36 CFR 800.2(a)(4)) will be reinitiated;
- If the community so desires, the Mertarvik Spring may require assessment as a potential Traditional Cultural Landscape (TCP) and a formal determination regarding its eligibility for listing on the National Register of Historic Places (NRHP). Per Appendix II of National Register Bulletin No. 38, a trained ethnographic specialist working in concert with the Newtok community could provide a recommendation on the status of Mertarvik Spring as a TCP and to evaluate it for eligibility for the NRHP;
- If future work encroaches on *Taqikcaq*, then XBI-156, XBI-157, and XBI-158 will require formal determinations regarding their eligibility for listing on the NRHP, and the project's effect on these sites will need to be assessed and consultation under Section 106 of the NHPA reinitiated;
- In accordance with 36 CFR 800.13(b), if, after conclusion of Section 106 consultation, should any unknown and/or additional cultural resources be discovered before or during construction, any act, action or activity that has the potential to affect the resource shall be stopped in order to evaluate the resource and reinitiate Section 106 consultation as required by law; and
- In accordance with 36 CFR 800.6, upon evaluation of the resource(s), mitigation may be required to resolve any adverse impacts.

5. Mitigations Measures Not Adopted (40 CFR 1505.2(c))

All mitigation measures identified in the FEIS and recommended by state and federal agencies have been adopted for the selected alternative.

6. Mitigation Compliance Monitoring and Reporting (40 CFR 1505.2(c))

No specific monitoring or reporting requirements were identified during the preparation of the FEIS, although it should be expected that monitoring and reporting requirements may be included as a permit condition as specific infrastructure elements are further designed and submitted for approval at state and federal levels. When applicable, those monitoring and reporting requirements will be incorporated into design, construction, operation and maintenance activities.

7. Public Involvement (40 CFR 1506.6)

Public participation was an integral component throughout the preparation of the EIS and it began early in the process of planning and developing the proposed action. The Commission facilitated public involvement to support the NEPA process according to CEQ Regulations (40 CFR 1506.6) and the Commission's codified procedures implementing CEQ's NEPA regulations (45 CFR 900). These regulations promote sound decision making by providing ample opportunities for the public to be involved in the NEPA process, and they formed the framework for public participation in development of the EIS.

7.1. Public Scoping Period

The Commission, in cooperation with the NVC, initiated preparation of the DEIS for the proposed action by publishing a notice of intent (NOI) to prepare an EIS in the *Federal Register* on March 3, 2017. The NOI invited individuals, organizations, and agencies to submit comments concerning the scope of the EIS. The comment period ended on April 3, 2017. In addition, two public scoping meetings were held for the proposed action. The first public meeting was held in the Village of Newtok on March 22, 2017 (see FEIS Section 3.2.2). Comments received were:

- Written Comment #1: "Thank you for being concerned about traditional sites."
- Written Comment #2: "Liked the things you guys thought and asked before making the place, thinking of the animals and the land resources. And asking about what the other people think."
- Transcribed Verbal Comment: "Question about contaminants from landfill reaching fish stream (Takichak River) to the east."

The other public scoping meeting was held at the Commission offices located in Anchorage, AK on March 29, 2017. Attendees at the meeting included representatives from the following state and federal agencies:

- Alaska ADOT&PF
- BIA, EDA, FAA, FEMA, IHS, HUD, USACE, USDA, and USEPA

The issues and concerns identified during public scoping helped determine the appropriate scope of environmental analysis to be addressed in the EIS.

One issue raised by several agencies regarded "connected actions." The Commission determined that, with the exception of some actions regarding the deactivation of Newtok airport, decommissioning activities at Newtok were not a connected action (as defined by NEPA) to proposed infrastructure development at Mertarvik. As discussed in Section 5.23.4 of the FEIS, potential decommissioning activities at Newtok are not being triggered by the proposed development and are wholly independent of the larger effort to provide a new community site for the people of Newtok. The Commission consulted with CEQ regarding this determination that decommissioning of Newtok is not a connected action. Although it is not the role of CEQ to approve or endorse the Commission's approach, the consultation did not identify any significant concerns or inherent conflicts with NEPA.

7.2. DEIS Preparation and Distribution

On December 29, 2017, the USEPA published the Notice of Availability (NOA) of the DEIS in the Federal Register. The NOA announced the public availability of the DEIS, with initiated the 45-day public review period in accordance with 40 CFR 1506.10(c). The DEIS was available on the Commission's web site (https://www.denali.gov/publications), with distribution to all Federal, State, and tribal agencies that have jurisdiction by law or special expertise with respect to any environmental impact involved, authorized to develop and enforce environmental standards, and to any person, organization or agency requesting the entire DEIS in accordance with 40 CFR 1502.19. In recognition of the difficulties of receiving electronic copies in remote areas of Alaska, hard copies were sent to the Newtok Village Council, Newtok Native Corporation, Native Village of Tununak, Native Village of Nightmute, City of Toksook Bay, Nunakauyarmiut Tribe, and the Chefornak Traditional Council.

7.3. FEIS Preparation and Distribution

On March 9, 2018, the USEPA published the NOA for the FEIS in the Federal Register. The NOA announced the public availability of the FEIS, which initiated the 30-day period before which any ROD could be signed in accordance with 40 CFR 1506.10. Comments on the FEIS were received from the USEPA, the Alaska State Historic Preservation Office (SHPO), and the Federal Emergency Management Agency (FEMA).

In a letter dated 9 April 2018, USEPA repeated concerns about a lack of specificity in the FEIS regarding proposed mitigation for impacts to wetlands and regarding the methodologies used to

evaluate expected impacts to wetlands for the purposes of preparing the EIS. Additional discussion regarding potential mitigation of wetlands impacts has been included in Section 4.4.3 of this ROD.

On 2 April 2018, the Commission received a letter from the Alaska State Historic Preservation Office (SHPO) in response to a 23 February 2018 letter requesting concurrence under Section 106 of the National Historic Preservation Act (NHPA). In the letter, the SHPO concurred with the Commission's determination that the proposed community layout plan (excluding the proposed runway and apron) would result in no adverse effect to historic properties. The SHPO letter has been added to Appendix A of the FEIS.

A final letter was received from the Federal Emergency Management Agency (FEMA) dated 3 April 2018. In the letter, it was noted that an earlier FEMA communication had been omitted from the EIS communication record. On 31 March 2017, FEMA submitted a letter in response to the Commission's invitation to participate in the Mertarvik EIS process. The FEMA correspondence included an enclosure of previously developed scoping comments associated with a FEMA scope of work to relocated houses from Newtok to Mertarvik. This enclosure was inadvertently omitted from the Draft and Final EIS. This omission has been corrected by appending the referenced enclosure to Appendix A of the FEIS.

No substantive issues identified in the FEMA scoping Summary would have resulted in additional changes to the Final EIS. The substantive comments provided in that letter were raised during the Commission's scoping process. It was considered in the DEIS and is included in the administrative record.

In the 3 April 2018 letter, FEMA also expressed concern about not being afforded an opportunity to participate as a Cooperating Agency as desired. In its 31 March 2017 response to the Commission's invitation, FEMA did request participation as a Cooperating Agency. Based on an understanding that the FEMA nexus to Mertarvik development may have changed due to a change in its potential scope of work, on 21 May 2017, the Commission rewrote asking if the desire to participate as a Cooperating Agency remained. The Commission subsequently believed, now known to be incorrectly, that a non-response to the 21 May 2017 letter was not a representation by FEMA that it was no longer interested in cooperating agency status. As a result, FEMA was not engaged as a Cooperating Agency.

8. Decision Rationale

The selected alternative will assist in fulfilling the Commission's statutory missions and responsibilities, given full consideration to economic, environmental, and technical factors. The selected alternative will minimize adverse environmental impacts and provide the residents of the Village of Newtok with a safe place to live that allows them to maintain their community and cultural identity within their traditional lands, while creating the necessary infrastructure for a safe, stable, and healthy existence. The selected alternative will avoid the potential loss of life and/or the indefinite displacement of village residents associated with the rapid migration of the Ninglick River which continues to threaten the existing village.

9. The Denali Commission Decision (40 CFR 1505.2(a))

A new village site will be constructed at Mertarvik, on lands granted to the Newtok Native Corporation in a land exchange approved by the U.S. Congress (Public Law 108-129, Nov. 17, 2003). The FEIS that informs this decision provided an in-depth analysis of the environmental consequences of the alternatives developed to achieve the purpose and need for the Federal action. The Commission, after careful consideration of these potential environmental consequences, combined with input received from the public on the DEIS and FEIS, and interagency and tribal coordination, has decided to support, either directly or indirectly, the funding and construction of all infrastructure elements included in the selected alternative and described in Table 1 above, and repeated as Table 3 on page 56 of the FEIS. Specific infrastructure elements to be funded and/or constructed, and the fiscal year in which they will be funded and/or constructed, will ultimately be dependent upon the availability of funding, and will likely employ a phased approach over several years.

The U.S. Department of Transportation's Federal Aviation Administration (FAA) was a Cooperating Agency in the development of the FEIS and will issue a separate Record of Decision related to potentially funding the construction of the new airport runway, taxiway, apron and appurtenant airport facilities at Mertarvik.

The mitigation measures and BMP's identified in the FEIS and described in this ROD will be incorporated into all applicable infrastructure element designs and construction activities. The selected alternative meets the Commission's identified purpose and need. Consistent with applicable requirements, issuance of this ROD does not in and of itself authorize construction of the selected alternative to commence. Prior to the initiation of those activities, other required applicable permits and authorizations must be executed. (see Table 2 above).

10. Agency Action

I hereby approve the decision to support, either directly or indirectly, the construction of critical infrastructure elements in accordance with the Newtok Village Council's selected Community Layout Plan (CLP) 2, as described in the accompanying FEIS, subject to the conditions identified in this ROD, and by reference, in the FEIS. My decision constitutes the final decision of the Commission and is not subject to appeal. Any challenge to the Commission's decision must be brought in Federal District court.

Approved By:

Joel Neimeyer
Federal Co-Chair
The Denali Commission

4/19/18
Date

11. References

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