

Draft Compatibility Determination

Title

Draft Compatibility Determination for Right-of-Way Permit Nome to Homer Express Project, Yukon Delta National Wildlife Refuge.

Refuge Use Category

Rights-of-way and Rights to Access

Refuge Use Type(s)

Rights-of-way (utility)

Refuge

Yukon Delta National Wildlife Refuge

Refuge Purpose(s) and Establishing and Acquisition Authority(ies)

Section 303(7)(B) of ANILCA sets forth purposes for which the Yukon Delta Refuge was established and shall be managed to include:

“(i) to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to, shorebirds, seabirds, migratory birds, salmon, muskox, and marine mammals;

(ii) to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;

(iii) to provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents; and

(iv) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in subparagraph (i), water quality and necessary water quantity within the refuge.”

The Yukon Delta National Wildlife Refuge encompasses more than 19.5 million acres of federal land on the Yukon-Kuskokwim Delta and was established by the Alaska National Interest Lands Conservation Act (ANILCA) (Public Law 96-487 Stat.2371) on December 2, 1980. Former Clarence Rhode Refuge, Hazen Bay Refuge, and Nunivak Refuge were incorporated into the present Yukon Delta National Wildlife Refuge in 1980.

Section 702(2) of ANILCA designated approximately 1.3 million acres of Yukon Delta Refuge as the Andreafsky Wilderness and Section 702(9) designated approximately 600,000 acres as the Nunivak Wilderness under the Wilderness Act as amended (16

U.S.C. 1131-1136). The purposes for these lands as Wilderness are supplemental to the other purposes of Yukon Delta Refuge.

Section 606(a) (1) of ANILCA designated the Andreafsky as a Wild River under the Wild and Scenic Rivers Act (Public Law 90-542).

Presidential Proclamation 2416 (1940), which renamed Nunivak Island Reservation as Nunivak National Wildlife Refuge, established that certain areas of land and water in the United States, its Territories, and its insular possessions have been reserved and set aside from time to time as refuges and breeding grounds for native birds, migratory waterfowl, wild animals, and other forms of wildlife, on which it is unlawful for any person to hunt, trap, capture, willfully disturb, or kill any bird or wild animal of any kind whatsoever, to take or destroy the nests or eggs of any wild bird, or to occupy or use any part of such reservations or to enter thereon for any purpose, except as permitted by law or by rules and regulations of the Secretary of the Interior, in order that the conservation and development of the natural wildlife resources may contribute to the economic welfare of the Nation and provide opportunities for wholesome recreation to the citizens of the United States.

Executive Order 5095 (1929) created the Nunivak Island Reservation and ordered it be reserved from settlement, location, sale, or entry, and from classification and lease under the provisions of the Act approved March 4, 1927 (44 Stat. 1452), entitled "An Act to provide for the protection, development, and utilization of public lands in Alaska by establishing an adequate system of grazing livestock thereon," and set apart for the use of the Department of Agriculture in conducting experiments in the crossing and propagation of reindeer and native caribou, for contemplated experiments in reestablishing the musk ox as a native animal of Alaska, and also as a preserve and breeding ground for native birds and wild game and fur-bearing animals for carrying out the purposes of the Alaska game law of January 13, 1925 (43 Stat. 739, U. S. C., Title 48).

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System (Refuge System) is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (Pub. L. 105-57; 111 Stat. 1252).

Description of Use

Is this an existing use?

No

What is the use?

The proposed use includes installation, operation and maintenance of a submarine fiberoptic cable (FOC).

Is the use a priority public use?

No

This is not a use of a national wildlife refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation. The NWRS Administration Act of 1966 (16 U.S.C. 668dd-668ee) specifies that these are the six priority general public uses of the NWRS.

Where would the use be conducted?

The use would occur on Yukon Delta National Wildlife Refuge (Refuge) in Etolin Strait totaling 74.13 miles of submerged Refuge lands (Figure 1). Water depths range from 4 to 30 meters within the Strait.

When would the use be conducted?

Installation would occur in July through August of 2026.

The cables are expected to have a 25-year life span, although cables can operate for longer periods. The use could potentially involve repairs utilizing a cable repair vessel and would likely occur during the summer months when the area is free of ice. The applicant intends on leaving the cable in-place after the useful period of project life.

How would the use be conducted?

Marine Installation

The FOC would be installed during the summer by using a cable-laying vessel equipped with lightweight submarine cable.

To better protect the cable, all marine segments of the Nome to Homer Express (NTHE) would be buried targeting approximately 3 feet (ft.) depth. Burial at water depths greater than 40 ft. would be conducted using a cable plow. The cable plow would be pulled along the seafloor by a tow wire connected to the cable-laying vessel. The cable would be guided through the share blade of the plow, which creates a trench up to 5 ft. deep and approximately 1 ft. wide in the seafloor sediments. As the

cable exits the lower rear of the plow, the surrounding sediments naturally collapse back into the trench, covering the cable.

In shallower waters, trenching would protect the FOC from environmental conditions such as surf action and ice scour. At these depths, trenching would be conducted by a jet sled, which is a self-propelled machine that uses water pressure to bury the cable. The pressurized water liquifies the seabed and turns it into a slurry, allowing the cable to sink into the temporary trench. The water used for jetting is supplied from the surface by high pressure hoses. The jet sled would be accompanied by divers to monitor trenching performance and assist in operations.

Prior to cable plow operations on the seabed, a pre-lay grapnel run (PLGR) may be deployed along segments of the cable-laying route. The objective of the PLGR operation would be to clear any identified seabed debris (e.g., wires, rope, fishing gear) existing along the route. PLGR is conducted by pulling a grapnel device across the seabed. Any debris recovered by the grapnel would be safely disposed of ashore upon completion of the operations. If debris cannot be recovered, then a local re-route would be planned to avoid it.

When the installation is complete, a post-lay inspection would be conducted using a remotely operated vehicle (ROV). The inspection reviews areas where cable-laying activities may have experienced challenges, such as plow failure, cable repairs, placing a branching unit or joint, or unforeseen events. If burial corrections are necessary, the ROV would perform jet burial, like the method used by the jet sled. The ROV would be remotely operated by crew aboard the cable-laying ship.

Operations and Maintenance - Throughout operations, no routine discharges, fuels, or emissions would occur during service. The FOC operation would be monitored remotely following compliance with federal and state maintenance stipulations to ensure long-term service.

The marine and segments of the cable would be continuously monitored via a Network Operations Center. Routine maintenance is primarily preventive and condition based. FOC outages that could occur during that period may necessitate emergency repairs and field visits, including helicopter access. If an outage occurs, marine faults use a cable repair vessel. In summer, targeted overflights using helicopters could be as needed to access the cable segment needing repaired.

Cable Decommissioning - The most common method—particularly for cables installed in stable seabed environments—is in-place decommissioning, where the retired cable is left buried and inert under regulatory oversight. For in-place decommissioning of the marine segments, the cable would be isolated, and the system would be secured physically at the BMHs by cutting and capping the ends to avoid any exposure

hazards. A survey of the remaining FOC would be conducted to confirm burial integrity and verify no sections are exposed, creating potential navigation or fishing hazards.

Why is this use being proposed or reevaluated?

Quintillion applied for a ROW permit to lay FOC for a transportation and utility system (TUS) across the Refuge. The Service has a statutory obligation to evaluate and to authorize or deny TUS applications in accordance with Title XI of the Alaska National Interest Lands Conservation Act (ANILCA) (16 USC §§3161-3173) and the National Wildlife Refuge System Administration Act as amended by the National Wildlife Refuge System Improvement Act (16 USC 3101, 664, 668dd and 668ee and 43 USC 666). The applicant has received a federal grant to fulfill the need to connect Alaskans to high-speed internet service, enabling access to distance learning, telehealth, public safety communications, and providing opportunities for economic development. Alternate routes avoiding refuge lands were considered but found to be infeasible.

Availability of Resources

To comply with the Refuge Recreation Act (Public Law 87-714), the Project Leader must determine whether sufficient resources—financial, staffing, facilities, or other infrastructure—are available to support the proposed use without materially interfering with the refuge purposes or the mission of the National Wildlife Refuge System. This determination should be informed by a review of current capacity and, where applicable, the refuge’s Comprehensive Conservation Plan (CCP).

Assessment of current resources and capacity

In general, the Refuge will incur no expenses except administrative costs for review of the application, issuance of a ROW Permit, and staff time to conduct supplemental environmental analysis and complete a finding of appropriateness (FOA) and compatibility determination (CD). Enforcement measures may be required if terms of the ROW are violated, but minimal resources will be needed for compliance. Once the pre-approval analysis and administrative responsibilities are complete, there will likely be few resources needed for this proposed use. Expenditures for equipment, facilities, improvements, maintenance, and other materials and supplies are not anticipated for this project. Staff resources are deemed adequate to manage this use at anticipated use levels.

The Permittee will oversee the landing of the submarine cable and will be responsible for maintenance of the cable. Administrative Costs: Review request, coordination, and process ROW Permit: 2 staff: 40 hours: \$3,497. Review environmental analysis, prepare FOA and CD: 4 staff: 70 hours: \$7,734. Review and approval of all

documentation: 5 staff: \$1,126. Total \$12,357. The Refuge does not anticipate any additional costs after issuance of the permit.

Impacts of changes to resources and capacity

The availability of resources is subject to change and the level of use provided may vary based on current staffing, partner support, funding, or infrastructure conditions. Costs may increase over time, in relation to changes in the costs for equipment, maintaining facilities, etc. A substantial increase to the number of requests may also create the need for additional resources to administer the use. The Project Leader will use sound professional judgment in evaluating whether the refuge or its partners can develop, operate, and maintain the use in a compatible manner.

Anticipated Impacts of the Use

Potential impacts of a proposed use on the refuge's purpose(s) and the Refuge System mission.

The effects and impacts of the proposed use to refuge resources, whether adverse or beneficial, are those that are reasonably foreseeable and have a reasonably close causal relationship to the proposed use. This CD includes the written analyses of the environmental consequences on a resource only when the impacts on that resource could be more than negligible and therefore considered an “affected resource.” visitor use and experience, cultural resources, refuge management and operations will not be more than negligibly impacted by the action and have been dismissed from further analyses.

Short-term impacts

The Kuskokwim Shoals is a key sea duck habitat site that extends southeast from Etolin Strait into Kuskokwim Bay, offshore from the village of Kipnuk and Cape Avinof. Although the fiber optic cable avoids this area, it is important to note the key staging site for so many birds and its relation to the area of the fiber optic cable as birds traveling to the key staging area travel through the Etolin Strait.

Migratory Birds: The Etolin Strait is an important spring and fall migration corridor from mid-April through late October, with multiple species migrating through the area to access the Kuskokwim Shoals. The Kuskokwim Shoals represents an important staging location for thousands of Pacific Common Eiders (*Somateria mollissima v-nigra*), tens of thousands of King Eiders (*Somateria spectabilis*), and fall-staging Black Scoters (*Melanitta americana*) and Long-tailed Ducks (*Clangula hyemalis*; Larned and Tiplady 1996, Larned 2012, J. Schamber, Alaska Department Fish and Game unpublished data). While this is not a primary migration corridor for the

following species, a smaller number of Spectacled Eiders (*Somateria fischeri*), Surf Scoters (*Melanitta perspicillata*), and White-winged Scoters (*Melanitta deglandi*) occupy this offshore habitat and migrate through Etolin Strait during migration (Larned and Tiplady 1996, Rosenberg et al. 2006a, 2006b). In addition, Emperor geese (*Anser canagicus*) migrate through the strait but tend to stay near shore, but large numbers of Black Brant (*Branta bernicla nigricans*) migrate through the strait in the spring (April/May) and the fall (September- November; C. Overton pers comm).

The installation or maintenance of the Quintillion fiber optic cable is predicted to cause only minor disturbance or displacement, with chance of a bird strike possible but low during summer months. No significant decrease in sea duck forage (clams and mussels) is anticipated from the installation of fiber optic cable.

Sea Birds: On either side of Etolin Strait, both Nunivak Island and Nelson Island provide nesting habitat for cliff nesting sea birds (Ritchie 1978, A. Moses pers. comm). Due to the number of nesting sea birds, the Etolin Strait is frequently used as a foraging area by Common murres (*Uria aalge*), Pelagic Cormorant (*Phalacrocorax pelagicus*), Glaucous-winged gulls (*Larus glaucescens*), Black-legged Kittiwake (*Rissa tridactyla*), Horned puffins (*Fratercula corniculata*), Parakeet auklets (*Aethia psittacula*), and Crested Auklets (*Aethia cristatella*).

In addition, the Etolin Strait is an important remigial molt location for red-throated loons from late August through December (McKloskey et al. 2018, Rizzolo et al. 2020, B. Uher-Koch pers comm). Red-throated loons rely on deep water upwellings which create an abundance of food for seabirds (McKloskey et al. 2018).

Expected disturbance would be temporary displacement and disturbance with no lasting effects to seabirds utilizing the Etolin Strait. Installation or maintenance of the Quintillion fiber optic cable are not anticipated to reduce food resources (primarily fish species) for sea bird species.

Steller's Eiders and Spectacled Eiders

ESA-listed eiders are at risk of colliding with moving or stationary marine vessels around Alaska. Eiders typically fly in groups, low over the water (approximately 32 feet or lower) and at relatively high speeds (up to approximately 45 miles per hour). Although we expect most migrating eiders to respond to vessel presence by moving away from the vessel, impaired visibility and vessel lighting configurations may disorient and/or attract birds to vessels. Additionally, molting birds are not able to fly and may have trouble moving quickly away from vessels.

Impaired visibility - When visibility is impaired, such as at night or during periods of

increased fog or cloud cover, eiders may be more likely to collide with vessels. Additionally, during high wind or rain/snow, eiders may attempt to land on vessels to seek refuge from bad weather.

Vessel lighting - Certain vessel lighting configurations may increase attraction, disorientation, and collision risk for eiders and other birds. There is also evidence that red steady-state lights are particularly attractive and disorienting to birds. During hours of darkness when vessels are lit, eiders may be particularly vulnerable to collision risk.

Spectacled Eider: Spectacled eiders are listed as threatened under the ESA and are a state species of special concern. Pairs arrive at breeding sites on the Yukon Delta in early May, but Spectacled eider presence in the proposed Project Area is primarily limited to migration pathway for a low proportion of the population and should only experience temporary disturbance.

Steller's Eider: The AK-breeding population is listed as threatened under the ESA and is a state species of special concern. Nearly the entire Pacific population of Steller's Eiders (>80,000 birds) passes through the Etolin Strait area in the spring after wintering in areas of southwestern and southcentral Alaska (Larned 2012, Rosenberg et al. 2014, Martin et al. 2015); and use the Kuskokwim Shoals with some dispersed flocks in the Etolin Strait for three to five weeks from July- September before dispersing to wintering grounds (Rosenberg et al. 2014, Martin et al. 2015). Steller's eider presence in the proposed project area would include migration pathways and molting areas. Steller's Eiders should only experience temporary displacement or disturbance while migrating through Etolin Strait.

Benthic habitat: Implemented in 2008, new measures to prohibit bottom trawling in a habitat conservation area encompassing Nunivak Island-Etolin Strait-Kuskokwim Bay were enacted. Ocean habitat is essential for maintaining productivity of fishery resources and is a key component of an ecosystem-oriented management approach. Habitat that provides structural relief on an otherwise featureless bottom can be particularly important to fish for food, reproduction, and shelter from predators.

Structural habitat includes boulders, corals, anemones, kelp, and other living organisms attached to the ocean bottom. Because the installation of fiber optic cable with the cable plow will disturb approximately 90-acres of structural habitat, we must consider the damage to the benthic substrate with installation of a fiber optic cable.

Butter clams (*Saxidomus gigantea*) are a common food source for humans, walrus, and sea ducks, and are found in the area, and commonly in walrus stomachs.

The one-time disturbance and minimal width of dredging and laying the fiber optic cable is anticipated to have short-term impacts on individual benthic resources, but not at a population level. The laying of the cable over rocks and above ground may provide more structure and habitat for organisms to attach to.

Marine Fishes: Important fish species documented in the Etolin Strait are Herring (*Clupea pallasii*), Pacific cod (*Gadus macrocephalus*), Alaska pollock (*Gadus chalcogrammus*), rockfish spp (*Sebastes*), flatfish spp (*Pleuronectidae*), pacific halibut (*Hippoglossus stenolepis*), 5 salmon spp (*Oncorhynchus spp*), Arctic Char (*Salvelinus alpinus*), and king crabs (*Paralithodes spp.*)(NPFMC 2020). Big Skate (*Beringraja binoculata*) are also reported to be in the area (Huntington et al. 2017).

The one-time disturbance and minimal width of dredging and laying the fiber optic cable is expected to have short-term impacts on individual fish, but not at a population level. Impacts expected to be disturbance and temporary displacement.

Marine Mammals: Etolin Strait is used by many marine mammals for foraging and migrating. This includes bearded seal (*Erignathus barbatus*), spotted seal (*Phoca largha*), ringed seal (*Pusa hispida*), ribbon seal (*Histiophoca fasciata*), Pacific walrus (*Odobenus rosmarus*), Steller sea lion (*Eumetopias jubatus*), beluga whale (*Delphinapterus leucas*), Northern fur seal (*Callorhinus ursinus*), harbor porpoise (*Phocoena phocoena*), and Dall's porpoise (*Phocoenoides dalli*) (Huntington et al. 2017).

Walrus (*Odobenus rosmarus*) are present around Nunivak Island year-round but primarily use Etolin Strait in the spring (March and April) during migration (Huntington et al. 2017).

Seals and other marine mammals may be present during installation of the fiber optic cable but are not expected to experience more than temporary disturbance or displacement.

Subsistence Resources: Etolin Strait is a marine passage in southeastern Alaska, characterized by its rich biodiversity and importance to local subsistence activities. The strait supports various fish and shellfish populations, marine mammals, and aquatic plants that are integral to the diet and culture of nearby communities. Many subsistence users from the villages of Mekoryuk, Tununak, Toksook Bay, Nightmute and Chefornek rely on fishing, shellfish harvesting, and hunting for food security and cultural practices.

The proposed action is not likely to alter the availability, distribution, migration, or location of subsistence resources to a significant degree. Any change in migration or

distribution would be limited to site specific areas and short in duration, nor will access to subsistence resources be limited by the proposed action.

Long-term impacts

No long-term impacts are anticipated from installation of the fiber optic cable (FOC).

If correctly laid, submarine cables have thus far not been shown to have a significant adverse effect on the surrounding marine environment since they are generally immobile once placed. The cable would remain buried in areas where it is stable and non-reactive in the marine environment. FOCs are made of materials such as polyethylene, steel, and glass, which degrade and leach contaminants very slowly and therefore pose much lower risk to the surrounding environment (Collins 2007; Andradý 2000). No long-term effects of the cable are anticipated for the refuge or wildlife therein.

Public Review and Comment

The draft compatibility determination will be available for public review and comment for 15 days from the posting date for this compatibility determination. Legal notice of the draft compatibility determination will be published in the Delta Discovery. Additionally, the public will be made aware of this comment opportunity through the Refuge Facebook page and will be made available electronically on the refuge website <https://www.fws.gov/refuge/yukon-delta>. A hard copy of this document will be posted at the Yukon Delta National Wildlife Refuge Headquarters office at 807 Chief Eddie Hoffman Highway in Bethel, Alaska. Please let us know if you need the documents in an alternative format. Concerns expressed during the public comment period will be addressed in the final determination.

Determination

Is the use compatible?

Yes

Justification

The effects from the proposed Quintillion submarine fiber optic cable project would not materially detract from the NWRS mission or Refuge purposes. Effects on Refuge resources are anticipated to be minor and short term. The project would not conflict with the requirements of ANILCA to conserve fish and wildlife populations and habitats in their natural diversity or the NWRS Administration Act, as amended, to maintain the biological integrity, biological diversity, and environmental health of the Refuge. Therefore, the proposed use has been determined to be compatible.

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date

2051

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Figure

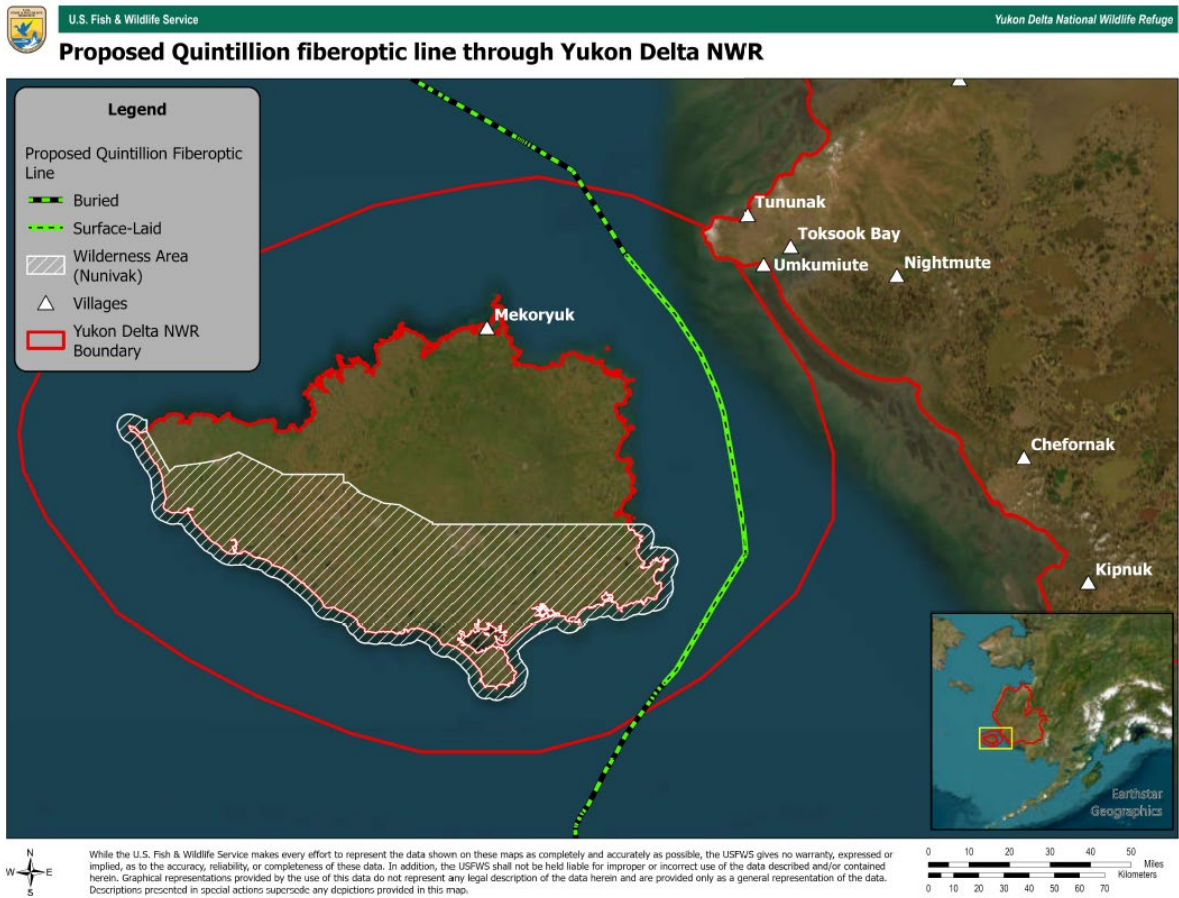


Figure 1. Proposed Fiber Optic Cable Route through the Yukon Delta National Wildlife Refuge.