

APPENDIX B
2021 AU Aleutian
FONSI and Environmental Assessment

FINDING OF NO SIGNIFICANT IMPACT

AU Aleutian Alaska

**Rural Development
U.S. Department of Agriculture**

Unicom, Inc.

**Prepared by:
DOWL**

August 2021

A. INTRODUCTION

Unicom, Inc. (Unicom) plans to submit a financing request to the U.S. Department of Agriculture, Rural Utilities Service (RUS) to construct the proposed AU Aleutian (Project) in Alaska. RUS is considering this financing request. Prior to taking a federal action (i.e., providing financial assistance), RUS is required to complete an environmental impact analysis in accordance with the National Environmental Policy Act of 1969 (NEPA) (U.S.C. 4231 et seq.), the Council on Environmental Quality's (CEQ) regulations for implementing NEPA (40 CFR Parts 1500-1508), and RD's NEPA implementing regulations, Environmental Policies and Procedures (7 CFR Part 1970).

After completing an independent analysis of an environmental report prepared by Unicom and its consultant, RUS concurred with its scope and content. In accordance with 7 CFR § 1970.102, RUS adopted the report and issued it as the Agency's Environmental Assessment (EA) for the proposed Project. RUS finds that the EA is consistent with federal regulations and meets the standards for an adequate assessment. Unicom published a newspaper notice, announcing the availability of the EA for public review, in accordance with 7 CFR § 1970.102.

In addition, RUS considers the proposed Project an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA), 16 USC 470(f), and its implementing regulation, "Protection of Historic Properties" (36 CFR Part 800).

B. PROJECT DESCRIPTION AND PURPOSE/NEED

The overall purpose of the Project is to deliver fast, reliable broadband service to six rural Alaska Native Aleut villages for the first time to support economic development and social services.

There is no terrestrial broadband service connection to Alaska's communities across the Aleutian Islands today; all existing communications rely on satellite service. The proposed project's six isolated Aleutian Islands communities are neither connected by road nor an intertied electrical grid. Unalaska, the proposed southwest termination point, is the largest of these communities and is located 800 miles from the nearest urban center (i.e., Anchorage).

Unalaska is home to approximately 4,700 year-round residents, with a seasonal influx of another 4,000 people who support the fishing industry in the largest fishing port in the United States by volume. Unalaska's fishing industry anchors local economies throughout the Aleutian Chain, including supporting several large fish processing plants, generating \$279 million in revenues annually. Unalaska is positioning itself as a gateway to the Arctic Ocean as its strategic location as a port will continue to increase as sea ice continues to recede.

Although Unalaska has a robust business community and significant population, its extreme remoteness, lack of existing infrastructure, harsh weather, and other factors have prevented a sustainable business case for broadband infrastructure investment. The lack of broadband access limits economic development and efficiency of services delivered by health care providers, schools, and tribal entities.

RUS has reviewed the purpose and need for the Project and determined that the proposal will meet the present and future needs of Unicom.

C. ALTERNATIVES EVALUATED

1. **No Action**

Under the No Action Alternative, RUS would not provide financial assistance to Unicom, and/or the proposed Project would not be constructed. This alternative would not assist Unicom in providing a terrestrial-based fiber optic connection to the project's six Aleutian communities.

2. **Action Alternative (Preferred Alternative)**

Under the Action Alternative, RUS would consider financing the proposed Project, and Unicom would construct AU Aleutian. The proposed project would install an approximately 793-mile-long submarine fiber optic cable connecting Larsen Bay, Chignik Bay, Sand Point, King Cove, Akutan, and Unalaska to an existing company-owned middle-mile fiber network. From Kodiak, the fiber optic cable would be laid down the Shelikof Strait and then parallel the Alaska Peninsula to the southwest until it reaches Unalaska. The cable would branch off to transmission regeneration sites located at Larsen Bay, Chignik Bay, Sand Point, and King Cove, with an additional branch (without signal regeneration) to Akutan. Services to end users are to be provided in these five communities and Unalaska.

Basic Project activities include the following:

- Buried broadband fiber cable (terrestrial)
 - o Construction by trenching would total approximately 50 miles; trenches would be no deeper than 3 feet in depth and 3 feet wide and be generally constructed within existing road rights-of-way (ROW) and within existing disturbance when feasible
- Buried broadband fiber cable (marine)
 - o Construction by trenching would total approximately 620 miles; trenches would be no deeper than 5 feet and 1 foot wide
 - o Installation by laying cable on seabed would total approximately 173 miles; no burial would occur
- Installation of vaults
 - o Construction of new vaults would total 268 placed at a depth no greater than 5 feet
- Prefabricated communications shelter on small gravel pads
 - o Placement of six prefabricated shelters (approximately 25 feet long, 15 feet wide, and 10 feet high) would be housed on 625-square-foot gravel pads

The project would occur in primarily remote communities and villages on private or municipal lands, and crosses federal waters, state-owned tidelands, and wetlands.

Table 1 summarizes project elements by community.

Table 1: Project Elements by Community

Community	Number of Vaults	Fiber placed between MLW and BMH (linear feet)	Fiber placed between BMH and Existing Facilities (linear feet)	Fiber placed between Existing Facilities and End Users (linear feet)
Mill Bay (Kodiak)	0	202.4	0	0
Larsen Bay	12	404.8	731.1	8,994.2
Chignik Bay	18	721.6	1,624.2	16,521.5
Sand Point	24	214.6	2,950.6	31,476.0
King Cove	20	68.8	1,919.4	19,549.0
Akutan	10	49.2	334.2	4,560.5
Unalaska	184	50.0	5,314.0	152,881.9
Total	268	1,711.4	12,873.5	233,983.1

Note: BMH (beach manhole); MLW (mean low water).

3. Alternatives Eliminated from Further Consideration

In addition to the No Action Alternative and Action Alternative, Unicom considered other technology and siting alternatives, which are documented in the Alternatives section of the EA.

D. SUMMARY OF ENVIRONMENTAL EFFECTS

The analyses in the EA documented that the proposed Project would have no adverse effects to wetlands, threatened or endangered species, critical habitat, essential fish habitat, or historic and cultural properties. A summary of anticipated impacts on the human environment is provided below, including any mitigation measures deemed necessary to avoid or minimize impacts. Unicom is responsible for implementing these measures.

Wetlands and Waters of the U.S. (WOUS)

United States Fish and Wildlife Service (USFWS) National Wetlands Inventory data is not available within the project area. Without field verification, wetlands are assumed to be present in all undisturbed, vegetated areas above mean high water (MHW). There is no indication that vegetation in the project footprint is unique or uncommon in the region. DOWL used existing drone imagery, published tidal elevations, and other information to determine the HTL and MHW for each site. Tidelands extend from low tide to MHW, and navigable waters include territorial seas.

Complete avoidance of impacts to wetlands and WOUS is not feasible; however, impacts have been minimized by siting project features in developed/disturbed areas to the greatest extent possible. Any trenching work conducted in vegetated areas would be assumed to result in temporary impacts to jurisdictional resources and all fill (e.g., beach manholes, shelter pads, vaults) would result in permanent impacts to jurisdictional resources.

The estimated area of temporary impacts to wetlands and WOUS is approximately 6.65 acres. Permanent impacts from the construction of project facilities would impact approximately 4,275 square feet (0.10 acre). Temporary impacts from trenching between

facilities and end users would be permitted along with the permanent impacts under a single U.S. Army Corps of Engineers Nation Wide Permit 57, with one permit for each affected community.

Essential Fish Habitat

Essential Fish Habitat (EFH) is present throughout the project area. An EFH Assessment identified approximately 37 species of fish with designated EFH within 1 mile of the proposed cable route. The project may temporarily adversely affect EFH during construction due to temporary habitat alteration in the trench path; temporary localized turbidity increase in the trench path; and short-term entrainment or mortality of individuals in the trench path. Although EFH in the project area would be adversely affected, the project would not impact EFH to the point of causing major adverse impacts to fish populations. Individuals of a variety of species are expected to move successfully into similar habitats, since the impacted habitats are not unique or rare. All effects would be temporary and conservation measures would be used to avoid and minimize impacts to the extent possible. The EFH Assessment was submitted to the National Marine Fisheries Service (NMFS) for review and NMFS concurred on May 12, 2021 with a finding that the project may adversely affect EFH.

Threatened and Endangered Species

Ten threatened and endangered (T&E) species that occur within the project area. The project consulted with the NMFS and U.S. Fish and Wildlife Service (USFWS) for marine portions of the project area for species under their respective jurisdictions. The terrestrial project areas are adjacent to, but do not include marine foraging habitat for Steller's eider and short-tailed albatross. There is no designated critical habitat for either bird in the project area, and the presence of either bird in the project area would be incidental to flyover.

Section 7 consultation under the Endangered Species Act (ESA) was completed with USFWS and NMFS. Biological Assessments were prepared, and consultation resulted in a formal determination that the project may affect, but would not likely adversely affect or jeopardize the continued existence of any species listed under the ESA or result in the destruction or adverse modification of its critical habitat.

Critical Habitat

Additional consultation was conducted for the Mexico and Western North Pacific humpback whales distinct population segments critical habitat, which was designated on April 20, 2021. USFWS concurred on April 2, 2021 that terrestrial project elements would not likely adversely affect listed species. NMFS concurred on June 11, 2021 that marine project elements would not likely adversely affect critical habitat.

Historic and cultural properties

The area of potential effects (APE) for terrestrial operations would be approximately 30 feet on either side of all ground-disturbing work. The APE for marine activities would be 150 feet on either side of the cable laying route. The Alaska Heritage Resource Survey (AHRs) database was reviewed for previously recorded terrestrial sites in the APE; a total of 79 AHRs sites were identified that intersect or are located within the APE. Of these 79 sites: 7 sites were determined to be eligible for the National Register of Historic Places (NRHP); 1 is

a National Historic Landmark; 3 are contributing properties to the National Historic Landmark; 2 have been determined not eligible for listing in the NRHP, and the remaining 66 have not been evaluated for NRHP eligibility.

A review of the AHRS database for the marine APE indicated the project would pass through 1 AHRS site. However, there are no known or identified submerged components associated with this property. Additionally, a review of the National Oceanic and Atmospheric Administration's Wrecks and Obstructions database was conducted, and it did not identify any documented features intersecting the marine APE.

A Programmatic Agreement (PA) was developed between RUS and the Alaska State Historic Preservation Office (SHPO) to allow for a phased process to identify, evaluate, assess, and avoid, minimize, and/or mitigate project effects on historic properties. The PA contains the following key agreements which must be completed by Unicom:

- A subsea sonar survey of the marine APE was completed in June 2021. Following the survey, the data will be reviewed by a marine archaeologist to identify potential anthropogenic or cultural remains within the marine APE. This review will include interpretation of remote-sensing geophysical and geotechnical data acquired in support of the project, as well as historic and archival database inventory records. The review will be submitted to RUS along with any recommended alignment changes based on the archaeological review. RUS and SHPO must approve the report prior to Unicom commencing installation of the project in the marine APE.
- For the terrestrial APE, the base requirement of the PA is for the applicant to provide an archaeological monitor in all areas of ground disturbing activity in all communities for the project. However, if Unicom elects, the PA allows for Unicom to conduct cultural resource surveys within the communities to further refine the known locations and/or distribution of cultural resources within the communities. In these cases, Unicom must submit a proposed plan and research design to RUS and SHPO for approval prior to conducting fieldwork, and a report describing the results and recommendations for monitoring revisions based on the fieldwork to RUS and SHPO. RUS and SHPO must approve the report prior to Unicom commencing any modified construction in any community.

The PA was approved and signed by RUS, SHPO, the US Army Corps of Engineers, the Aleutiq Museum, and Oonalashka Corporation on July 13, 2021.

E. PUBLIC AND AGENCY INVOLVEMENT

A local newspaper advertisement and legal notice, announcing the availability of the EA and participation under Section 106 of the National Historic Preservation Act, was/were published on

- July 31 through August 2, 2021 in Anchorage Daily News (Alaska)
- August 2 through August 4, 2021, in Kodiak Daily Mirror
- August 2, 2021, on KSDP and KUCB radio

A copy of the EA was available for public review at

- Unalaska Public Library (64 Eleanor Street, Unalaska, AK 99685)
- Aleutians East Borough Anchorage Office (3380 C Street #205, Anchorage AK 99503)
- Anchorage (UAA Consortium Library, 3211 Providence Drive, Anchorage, AK 99508)

The 14-day comment period ended on August 14, 2021. RUS received no comments.

F. FINDING OF NO SIGNIFICANT IMPACT

Based on its EA, RUS has concluded that the proposed Project would have no significant effects to wetlands, threatened or endangered species, critical habitat, essential fish habitat, or historic and cultural properties. The proposed Project would not disproportionately affect minority or low-income populations.

In accordance with the National Environmental Policy Act, as amended (42 U.S.C. 4321 et seq.), the Council on Environmental Quality Regulations (40 CFR 1500–1508), and RD's Environmental Policies and Procedures (7 CFR Part 1970), RUS has determined that the environmental impacts of the proposed Project have been adequately addressed and that no significant impacts to the quality of the human environment would result from construction and operation of the proposed Project. Any final action by RUS related to the proposed Project will be subject to, and contingent upon, compliance with all relevant federal and state environmental laws and regulations. Because the RUS action will not result in significant impacts to the quality of the human environment, RUS will not prepare an Environmental Impact Statement for its potential federal action associated with the proposed Project.

G. LOAN REVIEW AND RIGHT OF ADMINISTRATIVE REVIEW

This FONSI is not a decision on a loan application and therefore not an approval of the expenditure of federal funds. Issuance of the FONSI and its notices concludes RUS' environmental review process. The ultimate decision on loan approval depends upon conclusion of this environmental review process in addition to financial and engineering reviews. Issuance of the FONSI and publication of notices will allow for these reviews to proceed. The decision to provide financial assistance also is subject to the availability of loan funds for the designated purpose in RUS' budget. There are no provisions to appeal this decision (i.e., issuance of a FONSI). Legal challenges to the FONSI may be filed in Federal District Court under the Administrative Procedures Act.

H. **APPROVAL**

This Finding of No Significant Impact is effective upon signature.

Dated:

Laurel Leverrier
Assistant Administrator
Rural Utilities Service
Telecommunications Program

Contact Person

For additional information on this FONSI and EA, please contact Mr. Peter Steinour, Environmental Protection Specialist at USDA, Rural Utilities Service, Engineering and Environmental Staff, 1400 Independence Avenue, SW, Washington DC 20250, e-mail: peter.steinour@usda.gov.

AU ALEUTIAN

Environmental Assessment

Prepared for:

Unicom, Inc.
5450 A Street
Anchorage, Alaska 99518

Prepared on behalf of:

U.S. Department of Agriculture
Rural Development



Committed to the future of rural communities.

Prepared by:

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July 2021

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ACRONYMS

AAC	Alaska Administrative Code
AHRS	Alaska Heritage Resource Survey
AKEPIC	Alaska Exotic Plants Information Clearinghouse
ANVCA	Alaska Native Village Corporation CEO Association
APE	Area of Potential Effect
BA	Biological Assessment
BMH	beach manhole
BMP	best management practice
BOEM	Bureau of Ocean and Energy Management
DEC	Alaska Department of Environmental Conservation
DNR	Alaska Department of Natural Resources
EFH	essential fish habitat
EJ	environmental justice
E.O.	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
ft ²	square feet
FUDS	Formerly Used Defense Sites
GCI	GCI Communication Corp.
HTL	high tide line
IC	Institutional Controls
IPaC	Information, Planning, and Conservation System
MBTA	Migratory Bird Treaty Act
MHW	mean high water
MLW	mean low water
MMPA	Marine Mammal Protection Act
NMFS	National Marine Fisheries Service
NWP	Nationwide Permit
OHA	Office of History and Archaeology
PSO	Protected Species Observer
RD	Rural Development
RFFA	reasonably foreseeable future action
ROV	remotely operated vehicle
ROW	right-of-way
RUS	Rural Utilities Service
SHPO	Alaska State Historic Preservation Office
SWAMC	Southeast Alaska Municipal Conference
SWPPP	Stormwater Pollution Prevention Plan
Unicom	Unicom, Inc.
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USDA	U.S. Department of Agriculture
WOUS	Waters of the U.S.

1 INTRODUCTION

Unicom, Inc. (Unicom), a wholly owned subsidiary of GCI Communications Corp. (GCI), with support from the United States Department of Agriculture (USDA) Rural Development (RD), proposes to bring fast internet service to over 9,000 people in six remote Alaska Native villages for the first time.

USDA RD includes three federal agencies—Rural Business-Cooperative Service, Rural Housing Service, and Rural Utilities Service (RUS). The project would use federal financial assistance from the RUS ReConnect program, which aims to facilitate broadband deployment in areas of rural America that do not have sufficient access to broadband.

The only populated region of Alaska that lacks any form of terrestrial broadband service today is the Alaska Peninsula and Aleutian Islands. These communities currently are connected only via satellite. While satellite service remains an important technology in rural Alaska, it is expensive and cannot provide the bandwidth required to keep up with the applications that are fast becoming a required part of doing business in the fast-paced global economy. Low latency and high capacity broadband service is required to support the innovation and economic growth that will make rural American communities viable long into the future.

With support from USDA's ReConnect Program, Unicom proposes to deliver 1 Gig internet service to this most remote region of Alaska. Specifically, Unicom's AU-Aleutian Fiber Project (the Project) will involve deploying approximately 793 miles of subsea fiber optic cable from Kodiak to Unalaska. The subsea cable will begin in Mill Bay (Kodiak) and will connect Larsen Bay, Chignik Bay, Sand Point, King Cove, Akutan, and Unalaska (Appendix A; Figure 1). Unicom proposes to build fiber-to-the-premises local access networks in each of these newly connected communities and villages.

The project will bring transformational change to an entire region of Alaska. As described below, Unalaska is the largest community in the Aleutian Islands and supports one of the largest fisheries in the U.S. The lack of access to adequate broadband service limits economic development as well as the efficiency of services by health care providers, schools, tribal entities, businesses, and residents. The other five communities to be served by the project suffer from the same quality of life impediments created by a lack of fast and reliable communications networks.

This Environmental Assessment was prepared in accordance with guidelines outlined in 7 CFR Part 1970.

1.1 Summary of Project Description

The project would install a new, approximately 793-mile-long submarine fiber connecting Larsen Bay, Chignik Bay, Sand Point, King Cove, Akutan, and Unalaska to an existing company-owned middle-mile fiber network. From Kodiak, the fiber optic cable would be laid down the Shelikof Strait and then parallel the Alaska Peninsula to the southwest until it reaches Unalaska. The cable would branch off to transmission regeneration sites located at Larsen Bay, Chignik Bay, Sand Point, and King Cove, with an additional branch (without signal regeneration) to Akutan. Services to end users are to be provided in these five communities and Unalaska. The estimated project cost is \$60 million.

Basic Project activities include the following (see Section 2.1 for a more detailed description):

- Buried broadband fiber cable (terrestrial)
 - o Construction by trenching would total approximately 50 miles; trenches would be no deeper than 3 feet in depth and 3 feet wide and be generally constructed within existing road rights-of-way (ROW) and within existing disturbance when feasible
- Buried broadband fiber cable (marine)
 - o Construction by trenching would total approximately 620 miles; trenches would be no deeper than 5 feet and 1 foot wide
 - o Installation by laying cable on seabed would total approximately 173 miles; no burial would occur
- Installation of vaults
 - o Construction of new vaults would total 268 placed at a depth of no more than 5 feet
- Prefabricated communications shelter on small gravel pads
 - o Placement of six prefabricated shelters (approximately 25 feet long, 15 feet wide, and 10 feet high) would be housed on 625-square foot (ft²) gravel pads

The project occurs in primarily remote communities and villages on private or municipal lands, and crosses federal waters, state-owned tidelands, and wetlands.

1.2 Purpose and Need

The purpose of the proposed project is to deliver fast, reliable broadband service to six rural Alaska Native Aleut villages for the first time to support economic development and social services.

There is no terrestrial broadband service connection to Alaska's communities across the Aleutian Islands today; all existing communications rely on satellite service. The proposed project's six isolated Aleutian Islands communities are neither connected by road nor an intertied electrical grid. Unalaska, the proposed southwest termination point, is the largest of these communities and is located 800 miles from the nearest urban center (i.e., Anchorage). Unalaska is home to approximately 4,700 year-round residents, with a seasonal influx of another 4,000 people who support the fishing industry in the largest fishing port in the United States by volume (NOAA 2020). Unalaska's fishing industry anchors local economies throughout the Aleutian Chain, including supporting several large fish processing plants, generating \$279 million in revenues annually. Unalaska is positioning itself as a gateway to the Arctic Ocean as its strategic location as a port will continue to increase as sea ice continues to recede.

Although Unalaska has a robust business community and significant population, its extreme remoteness, lack of existing infrastructure, harsh weather, and other factors have prevented a sustainable business case for broadband infrastructure investment. The lack of broadband access limits economic development and efficiency of services delivered by health care providers, schools, and tribal entities.

2 ALTERNATIVES EVALUATED INCLUDING THE PROPOSED ACTION

Various alternatives were considered and analyzed during project development, as described in Section 2.2, *Other Alternatives Evaluated*. The following action is proposed.

2.1 Proposed Action

2.1.1 Terrestrial and Intertidal Project Elements

Project elements that would occur above the high tide line (HTL) are defined as terrestrial and project elements that would occur between mean low water (MLW) and HTL are defined as intertidal areas.

The fiber optic cable would be installed in a trench excavated to a maximum 3-foot width and 1.5-foot depth between mean high water (MHW) and MLW. In areas above MHW, trenching would have a maximum 3-foot width and 3-foot depth.

For each landfall location, the following construction methods would apply:

- Prefabricated communications shelter (approximately 25 feet long, 15 feet wide, and 10 feet high) would be installed adjacent to existing facilities (comprised of a fenced, gravel pad and communication equipment) in all locations except Larsen Bay and Chignik Bay where new sites will be developed; shelters would require gravel pads that would measure approximately 625 ft² and 2-feet deep. Each shelter would have self-contained, outdoor rated, and diesel fuel powered generator installed adjacent to it on the gravel pad (Photograph 1).
- The fiber optic cable would be installed into a new beach manhole (BMH), setback from the adjacent waterbody MHW with a conduit stub. The BMH would measure 3 feet by 4 feet (12 ft²) and 4 feet deep (Photograph 2). The conduit stub would be placed above MLW.
- The shore route consists of a buried conduit system and fiber optic cable from the BMH to a communications shelter. The conduit system would contain up to 3 conduits (each 2 inches in diameter) buried 36 inches below ground surface.
- BMH excavation would not exceed 5 feet by 5 feet (25 ft²) and 5 feet deep; each BMH excavation would vary based on shoreline/bank contours and substrate.
- From the BMH, the fiber optic cable would be routed to new Cable Landing Stations (referred to herein as 'shelters') co-located with existing facilities in all communities except Chignik Bay and Larsen Bay where it is to be a fully new facility. The fiber optic cable would then be routed to end users. The fiber optic cable between the BMH and communication shelter will be terrestrial cable placed in a trench, approximately 1.5 feet wide and 3 feet deep; the trench width would be less if a cable plow or chain trencher is available. The fiber extension to end users will be a standard terrestrial cable placed in a 2-foot deep trench. If existing suitable utility poles are available, the fiber optic cable's local distribution may use overhead construction as well.
- Vaults would be similar to BMHs, except are only 3 feet in depth, and would require no more than a 5-foot by 5-foot (25 ft²) excavation and would be used to provide slack loops

and splicing points along the route and at the communications shelter termination point (Photograph 3).

- The fiber optic cable between the BMH, existing facilities, and end users would be trenched adjacent to existing roads and remain within existing utility ROW and easements to the extent possible; this may include trenching in areas near the toe of slope. The fiber optic cable trenching would generally follow the utility distribution system in each community.

Photograph 1: Typical Communications Shelter and Existing Facility



- Installation crews would use backhoes and standard trenching techniques to set BMHs and vaults flush with the original ground grade (Photograph 4).
- Any work below MHW would occur during low tide.
- Heavy equipment needing to operate in intertidal areas and wetlands would be placed on mats, with the exception of beaches with firm sediments, such as large cobbles or boulders (e.g., Unalaska, Akutan).
- All areas would be returned to pre-construction elevations; all trenched areas would be re-graded to original conditions.
- Unicom does not intend to re-enter BMHs for 25 years, unless required to address a service or maintenance issue.
- Excavated material would be side-cast next to trenches during excavation and the spoils would be used as backfill to bury the cable and BMH.
- No excess material requiring disposal is anticipated to be produced.

- Alterations to shorelines would be temporary and trenches would be constructed and backfilled to prevent them from acting as a drain (i.e., not backfilled).

Photograph 2: Typical Beach Manhole with Conduit Stubs and Pull Rope



Photograph 3: Typical Vault with a Fiber Optic Cable Slack Loop



Photograph 4: Typical Vault Buried Flush Following Construction



In general, equipment used at each landfall location may include:

- Rubber wheel backhoe
- Tracked excavator or backhoe (medium to large excavator would be required at Unalaska)
- Utility truck and trailer to deliver materials
- Chain trencher or cable plow (optional)
- Hand tools (e.g., shovels, rakes, pry bars, wrenches)
- Survey equipment
- Winch or turning sheave
- Splicing equipment, small genset, and splicing tent

2.1.2 Marine Project Elements

The following describe project elements that would occur in the marine environment, outside of intertidal areas. The fiber optic cable would either be surface laid on the sea floor or buried via plow (maximum 1-foot width and 5-foot depth) in waters deeper than 50 feet. While it is expected that the temporary cable trench created by the plow would collapse, post-lay inspection and burial would be conducted using the ROVJET 207 (Photograph 5) series or similar remotely operated vehicle (ROV). In waters less than 50 feet deep, the cable may be buried using either a towed sled or tracked ROV, or use of a hand jet and water lift operated by a diver resulting in an excavation no more than 3 feet deep. In general, equipment in the near shore marine environment may include:

- Small utility boat to run pull line to beach
- Dive boat with hand jetting tools

Photograph 5: ROVJET 207 (Manufactured by International Telecom)



2.1.3 Community-Specific Operations

Dimensions of fiber optic cable and other project elements within each community are described in Table 1 and shown in Appendix A; Figure Set 2 and Figure Set 3.

Table 1: Project Elements by Community

Community	Number of Vaults	Fiber placed between MLW and BMH (linear feet)	Fiber placed between BMH and Existing Facilities (linear feet)	Fiber placed between Existing Facilities and End Users (linear feet)
Mill Bay (Kodiak)	0	202.4	0	0
Larsen Bay	12	404.8	731.1	8,994.2
Chignik Bay	18	721.6	1,624.2	16,521.5
Sand Point	24	214.6	2,950.6	31,476.0
King Cove	20	68.8	1,919.4	19,549.0
Akutan	10	49.2	334.2	4,560.5
Unalaska	184	50.0	5,314.0	152,881.9
Total	268	1,711.4	12,873.5	233,983.1

Note: BMH (beach manhole); MLW (mean low water).

The anticipated construction schedule is as follows (contingent upon receipt of permits and environmental authorizations):

- June 2021 – Completed subsea geophysical survey.
- August/September 2021 - Complete subsea geotechnical survey.
- Fall 2021/Summer 2022 – Install terrestrial fiber optic cable between existing shelters and end users in Unalaska.
- Fall 2021/Spring 2022 – Install terrestrial fiber optic cable between BMHs to existing shelter in all communities.
- Late Summer 2022 – Install terrestrial fiber optic cable between existing facilities and end users in Akutan; install subsea fiber cable from Mill Bay (Kodiak) to Unalaska including making the needed stops in the other 5 communities and powering up the undersea fiber optic system.
- Summer 2023 – Install terrestrial fiber optic cable between existing facilities and end users King Cove and Sand Point.
- Summer 2024 – Install terrestrial fiber optic cable between existing facilities and end users in Chignik Bay and Larsen Bay.
- Anticipated service dates for the communities:
 - Unalaska – Q1 2023
 - Akutan – Q1 2023
 - King Cove – Q3 2023
 - Sand Point – Q3 2023
 - Chignik Bay – Q3 2024
 - Larsen Bay – Q3 2024

2.2 Other Alternatives Evaluated

2.2.1 Alternatives Considered but Dismissed

Five alternatives were evaluated for their ability to meet the project's purpose and need and for economic, logistical, and technological feasibility, as summarized in Table 2.

Table 2: Alternatives Considered but Dismissed

Alternative	Reason Alternative Was Dismissed
Terrestrial Routed Fiber Optic Cable	The burial of terrestrial fiber optic cable would meet the project’s purpose, but it would be logistically infeasible and economically prohibitive to develop. Many of the communities are located on islands, which requires a substantial portion of the cable to be undersea.
Microwave Link Service	Would not meet the project’s purpose to provide fast, reliable, economically viable broadband service to the identified Aleutian Islands communities. Constructability and operations and maintenance including prime power remote sites requiring fueling by helicopter make microwave a poor choice for this reason. Sites would need to be located in National Parks and U.S. Fish and Wildlife Service lands and reliability in high latitude marine mountain environments is highly questionable.
Upgrade Satellite Service	Would not meet the project’s purpose to provide fast, reliable broadband service to the identified Aleutian Islands communities. Latency issues prohibit many uses of the latest technologies.
Fixed-Wireless Distribution Network	Would not meet the project’s purpose to provide fast, reliable broadband service to all subscribers in the identified Aleutian Islands communities, due to variable bandwidth delivery, potential interference, and system reliability due to the high winds and severe icing weather conditions in the region.
Utility Pole Distribution	Would not meet the project’s purpose to provide fast, reliable broadband service to the identified Aleutian Islands communities due to increased maintenance issues that would cause frequent outages. Several communities will not allow utility pole construction due to safety issues caused by the harsh environmental conditions in the area (e.g., falling poles and lines).

2.2.1.1 Terrestrial Routed Fiber Optic Cable

Description: The project’s six targeted communities are located on islands or in other isolated locations throughout the Alaska Peninsula and Aleutian Chain in southwest Alaska. Unicom considered alternative fiber optic cable routes that would provide a mix of subsea and terrestrial fiber optic transmission cable to reach the communities. The proposed alternative would reduce the linear length of subsea fiber optic cable by traversing land masses where possible when routing between communities; for example, the fiber optic cable’s starting location in Mill Bay and first terminus, Larsen Bay, are both located on Kodiak Island and a terrestrial route could be developed to connect the two communities.

Basis for Dismissal: The Terrestrial Routed Fiber Optic Cable Alternative would meet the project’s purpose but is logistically unfeasible and economically prohibitive. It would also increase overall environmental impacts. Due to the limited development and infrastructure throughout the project’s communities, there are no existing routes connecting communities located on the same landmass (e.g., Mill Bay and Larsen Bay on Kodiak Island), and the project would need to pioneer new routes between communities. A constructable alignment corridor is challenging to identify due to extreme landscape topography (e.g., mountains, wetlands, waterways) and mixed land ownership or management that may preclude construction in some areas (e.g., Kodiak National Wildlife Refuge). If a legally accepted route could be identified, completing a direct-bury cable operation across these remote areas would lead to larger disturbance footprints, prolonged construction timeframes, and significantly greater and prohibitive construction costs. In addition, by necessity, undersea fiber cable placement would be required to traverse the area between islands.

2.2.1.2 Microwave Link Service

Description: Microwave communication technology uses line-of-sight wireless communications and high-frequency radio waves to provide wireless connections for voice, data, and video. Microwave service is currently employed throughout Alaska to serve remote communities, private industry, and support other telecommunication services. Microwave service can eliminate the need to install copper or fiber optic cable between locations through the use of line-of-sight transmission and receiver stations. Under this alternative, a series of powered microwave link stations would be installed along the general proposed route to reach the six Aleutian Islands communities. These stations would have to be remote mountaintop facilities installed in coastal areas at the greatest elevation possible and employ large antennas to allow for the longest line-of-sight possible, which would minimize the number of required stations.

Basis for Dismissal: The Microwave Link Service Alternative would not meet the project's purpose to provide reliable broadband communications to the six Aleutian Islands communities due to technical limitations of the systems. Microwave communications systems technical limitations are mitigated to some degree through the use of more relay stations and taller towers with larger antennas, but these would result in additional environmental impacts. Some of the specific factors that contribute to this alternative being dismissed include:

- Microwave signals can be hampered by weather events (e.g., radio waves can be attenuated further during wet weather conditions) and other atmospheric conditions (e.g., atmospheric pressure differentials) that deteriorate the quality and reliability of the service.
- Line-of-sight transmission and receiver requirements would necessitate dozens of remote mountaintop microwave relay stations throughout the Aleutian Islands to extend service to the six project communities.
- Relay stations would likely require installation on protected lands (e.g., national parks and preserves).
- Remote sites would require frequent helicopter-accessed site visits, adding to long-term safety and cost concerns.
- Relay stations would require on-site power generation, resulting in the need for regular fueling and maintenance of generators.
- The required communications towers would need to be of suitable height and design to maintain the required system reliability within the adverse weather conditions found within the region. These structures and the potential Federal Aviation Administration-mandated tower lighting systems may increase the potential for bird strikes.
- High winds and severe icing weather conditions in the Aleutian region would likely unacceptably decrease the systems reliability.
- Microwave systems have relatively low bandwidth and higher price per bit delivered, as compared to fiber reducing the advantage of constructing a new telecommunications system for the project's six communities.

2.2.1.3 Upgrade Satellite Service

Description: The current system for this region is based on satellite service. The Satellite Service Alternative includes upgrades to this system. This alternative would increase the overall satellite service system's capacity through investments in upgraded infrastructure to each community, but

there would be no upgrades in the communications distribution system between each community's communications shelter and each end user.

Basis for Dismissal: The Satellite Service Alternative would not provide fast, reliable broadband service and would not meet the project's purpose. The project's six communities are currently served by satellite service and the communications connections are currently noted as being insufficient and do not adequately support contemporary communications needs such as telemedicine or remote learning. Satellite service at the community level has proven inadequate for modern communications of the communities because of its:

- Inadequate and unreliable bandwidth
- Significant latency (i.e., data transfer delay) issues

2.2.1.4 Fixed-Wireless Network Distribution

Description: This alternative would have the same marine elements as the Proposed Action but would distribute the telecommunications connection throughout the project's communities via fixed-wireless signal local distribution networks.

Basis for Dismissal: The Fixed-Wireless Access Alternative would meet the project's purpose to provide reliable broadband communications to the six Aleutian Islands communities but would result in a lower quality user experience and is logistically unfeasible and economically prohibitive. Some of the specific factors that contribute to this alternative being dismissed include:

- Some subscribers may experience variable delivery during busy hour conditions within certain areas of the community.
- Available radio spectrum may be subject to harmful interference decreasing overall system performance (i.e., vessel radars).
- System infrastructure exposed to the high winds and severe icing weather conditions in the Aleutian region would likely unacceptably decrease the systems reliability.
- Bandwidth expansion capability and overall technical life is less than fiber optic cable local access distribution alternatives.

While a fixed wireless local access system may be able to deliver acceptable speeds, due to unavoidable capacity constraints it would result in a lower quality experience for end-users than is possible over fiber. Fiber optic technology is the gold standard and likely eliminates the need for ground-disturbing construction in the future to upgrade the network to meet future technology needs. Also, Fixed Wireless Access relies on the construction of multiple towers throughout each community which would introduce new permitting and land use issues that are largely avoided with a local fiber optic network.

2.2.1.5 Utility Pole Distribution

Description: This alternative would have the same marine elements as the Proposed Action but would attach community distribution fiber optic cables to overhead utility poles.

Basis for Dismissal: This alternative would reduce the need to excavate cable trenches however, this alternative would require the installation of hundreds of utility poles and would ultimately not meet the project's purpose to provide reliable broadband communications to the six Aleutian Islands communities. Utilities in these communities are buried out of necessity, due to

high winds and severe weather that make pole lines too unreliable for utility grade services. This alternative would result in unacceptably frequent service outages.

2.2.2 No Action Alternative

Under the No Action Alternative, the project would not be constructed, and the project's six Aleutian Islands community's electronic communications would continue to be served by the existing satellite service. The No Action Alternative is included in the analysis for baseline comparison to compare the magnitude of the existing impacts against the proposed impacts. The current system is a traditional geo-synchronous satellite service with high latency and low bandwidth and capacity. Under the No Action Alternative, satellite services make telemedicine and distance learning extremely difficult, and reduce the types and quality of services that can be delivered. High latency and low bandwidth make the ever-growing capacity requirements for these services much too "heavy" for effective and efficient carriage over geo-synchronous satellite systems. As an example, schools schedule their activities that require telecommunications services so that no two activities are scheduled at the same time. Economic development is also slowed because businesses in the Aleutian Chain would not be employ the same technologies as their competitors due to the high latency and low bandwidth and capacity of satellite systems. In addition, satellite systems remain the highest cost alternative over time.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter addresses the affected environment and baseline conditions of the physical, biological, social, and economic resources potentially impacted as a result of the proposed project. Effects can be negative, or they can be beneficial (e.g., in the case of beneficial social or economic effects that projects may have on communities). Negative effects are determined by the level of impact and are discussed in terms of direct, indirect, or cumulative. Direct effects (impacts) are those which are caused by the project action and occur at the same time and place. Indirect effects are caused by a project action and are later in time or farther removed in distance but are still reasonably foreseeable. Cumulative effects are those resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (RFFAs). Table 3 summarizes the findings of this chapter.

Table 3: Comparison of Alternatives and Summary of Findings

Affected Resource Category	Proposed Action	No Action Alternative
Land Use	Compatible	Compatible
Floodplains	No effect	No effect
Wetlands and Waters of the U.S.	Temporary and permanent	No effect
Water Resources	No effect	No effect
Coastal Resources	Not applicable	Not applicable
Biological Resources	No adverse effect (mitigated)	No effect
Historic and Cultural Properties	No adverse effect (mitigated)	No effect
Aesthetics	No effect	No effect
Air Quality	Minor effect during construction	No effect
Socioeconomic Issues/ Environmental Justice	Beneficial effect	Negative impact
Miscellaneous Issues (Noise, Transportation)	Minor effect during construction	No effect
Human Health and Safety	Beneficial effect	Negative impact
Corridor Analysis	No effect	No effect

Past and Present Actions

Past and present actions are part of the existing conditions of the affected environment for all resources analyzed in Chapter 3.0. These actions are primarily existing infrastructure in the project's landfall communities, and may include marine infrastructure (e.g., docks, pilings, shoreline development, etc.), airstrips or airports, reservoirs, power plants, roads, and seafood processing facilities. Because the communities are not connected to a broader road system, there is minor ground traffic and slightly more air traffic. Other past and present actions in the Project area are subsistence and research, which contribute additional (though minor) vehicle, boat, air, foot, and off-road vehicle traffic. RFFAs in the Project area are described in Chapter 4, Cumulative Effects.

3.1 Land Use

Land ownership was determined using publicly available information to acquire parcel boundaries, legal descriptions, and ownership. Community land use in the project area was determined from the following documents:

- City of Akutan Community Plan, 2005
- City of King Cove Draft Comprehensive Community Plan, 2006
- Lake and Peninsula Borough Multi-Jurisdictional Hazard Mitigation Plan Update, 2005
- Community of Larsen Bay Community Comprehensive Plan, 2004
- City of Sand Point Comprehensive Community Development Plan, 2004
- Harbor Land Use Plan for Sand Point, Alaska, 2003
- City of Unalaska Hazard Mitigation Plan, 2013
- Chignik Bay Community Plan, 2009

3.1.1 Affected Environment

General Land Use

The project is sited on non-federal land and includes private property, municipal property and land owned or managed by the State of Alaska Department of Natural Resources (DNR) and State of Alaska Department of Transportation and Public Facilities. Subsea project elements outside of DNR limits (3 miles from shoreline) are regulated by the Bureau of Ocean Energy Management (BOEM), but BOEM does not require permits for subsea cable laying operations in federal waters. BOEM has interpreted its regulatory authority under the Energy Policy Act to extend to submarine cables laid in connection with exploration and production facilities under the Department of the Interior's purview¹. Zoning and land use are not classified in these communities and is general in nature. Community or land use plans identify utility improvements as a benefit to the community. Land use permitting restricts utility installations to public use easements and ROW permits.

Important Farmland

There are no farmlands of prime, unique, or statewide importance designated in Alaska and soils of local importance are confined to the Kenai Peninsula, Matanuska-Susitna Valley, and the Greater Fairbanks area. No national or state designations have been made in Alaska. Therefore, no farmlands of prime, unique, or statewide importance are present in the project area.

Formally Classified Lands

Formally classified lands are those administered by federal, state, or local agencies with special protection granted through formal legislative designation. No formally classified land or federal lands exist within the project limits.

¹ The Energy Policy Act of 2005, 43 U.S.C. § 1337(p) grants BOEM lead management authority for marine renewable energy projects on Federal offshore lands, and other projects that make alternative use of existing oil and natural gas platforms. BOEM's authority is limited to cables set down in "support [of the] production, transportation, or transmission of energy from sources other than oil and gas" on the U.S. outer continental shelf. Section 388 of the Energy Policy Act also gives BOEM authority over activities carried out in "support [of the] exploration, development, production, or storage of oil or natural gas" on the shelf, meaning that cable laid in connection with the construction and maintenance of structures such as oil or gas platforms also falls under BOEM's authority.

3.1.2 Environmental Consequences

3.1.2.1 *Proposed Action*

The proposed action would be constructed in existing and proposed easements between property parcels or within ROW to the extent possible. A Land Use/Tidelands Entry Authorization from the DNR has been obtained. All other necessary ROW, leases, and easement authorizations are either completed or in the process of being obtained from a variety of entities, as summarized in Table 4.

Table 4: Status of Land Use and Ownership

Land Ownership	Approval Process	Status
Federal (subsea only)	Bureau of Ocean Energy Management Authorization not required	Not applicable
State of Alaska (subsea only)	Public Utility Easement	Complete
Tribal (Unalaska, King Cove)	Land Entry Permit (pre-construction); easement (post-construction)	Complete
Private (Akutan)	Land Entry Permit (pre-construction); easement (post-construction)	Land entry permit is in process
Municipal (all communities)	Easement/ROW/leases	In process

3.1.2.2 *No Action Alternative*

The no action alternative would have no effect on land use.

3.2 Floodplains

Per Executive Order (E.O.) 11988, *Floodplain Management*, federal agencies are directed to avoid actions, to the extent practicable, which will result in the location of facilities in floodplains and/or affect floodplain values. Additionally, the USDA Departmental Regulation 9500-3, *Land Use Policy*, discourages the unwarranted alteration of floodplains, unless there is no practicable alternative action to avoid the direct or indirect encroachment on floodplains.

3.2.1 Affected Environment

The project does not occur in any community that participates in the National Flood Insurance Program and the Flood Frequency data from the Natural Resources Conservation Service is unavailable in the entire project area (according to Part 1970-F - Floodplain Management). The Federal Emergency Management Agency has not mapped floodplain hazards for communities within the project area and therefore accurate base flood elevations have not been established in the project area.

3.2.2 Environmental Consequences

3.2.2.1 *Proposed Action*

With the exception of new shelter pads, the project consists of buried components, which may traverse marine, riverine, and intertidal areas that would have associated floodplains. However, since buried project components do not extend above the ground surface, potential impacts to floodplains would only occur where shelter pads are constructed (per Part 1970.256).

The only tool available to assess potential floodplain impacts is to determine the distance between existing facilities where shelter pads are to be placed and the nearest waterbody. Table 5 lists the shelter pads relative to nearby waterbodies. All available information about each site’s flooding history and conditions is summarized below.

Table 5: Shelter Pad Location

Community	Distance to Nearest Waterbody		Waterbody	Shelter in likely floodplain or flood-prone area?
	Horizontal (feet)	Vertical (feet)		
Unalaska	380	+50	Dutch Harbor (marine)	No
Akutan	180	+15	Akutan harbor (marine)	No
King Cove	500	+30	King Cove (marine)	No
	390	+15	King Cove lagoon (brackish)	No
Sand Point	510	+75	Small unnamed stream	No
Chignik Bay	250	+23	Chignik Bay	No
Larsen Bay	600	+30	Larsen Bay (marine)	No

- Unalaska: Previous flood events have been a result of record rainfalls, snow melt runoff, and tidal action, though minimal flooding has arisen on the island from these actions. Pyramid Creek located three miles south of the shelter pad, and Iliulik Lake, approximately 2 miles south of the shelter pad, are the only waterbodies to have documented flooding (City of Unalaska 2013).
- Akutan: There is no apparent coastal flooding or erosion near the village, since the embayment protects the community from all but the most severe, storm-driven waves. No known flooding has occurred in Akutan, nor has a landslide posed a threat to the community (City of Akutan 2005).
- King Cove: Flooding occurs periodically on the road that fronts the lagoon when strong winds combine with an extreme high tide, however the shelter location is approximately 370 feet from this road and is higher in elevation and therefore not likely to be affected by flooding (City of King Cove 2006).
- Sand Point: Flood potential for Sand Point is low and no documented floods have occurred (City of Sand Point 2004).
- Chignik Bay: Sea surges and coastal flooding have been documented in Chignik Bay, with a 14.1-foot (local datum) elevation (Lake and Peninsula Borough 2015). The shelter is located approximately 23 feet above sea level, which is 8 feet above the last recorded flood elevation.
- Larsen Bay: Although areas of the community have experienced flooding ever since the 1964 earthquake when the land mass in the Larsen Bay area lowered 3 to 4 feet, areas noted as flooding do not include the shelter area and are confined largely to the coast when subject to high tides (USACE 2007).

The proposed action does not result in the modification of existing structures or installing new facilities within any mapped 100-year floodplain. In accordance with guidelines prepared by the U.S. Water Resource Council to implement E.O. 11988 and E.O. 13690, an eight-step decision making process (Part 1970, Subpart F) is not necessary.

3.2.2.2 *No Action Alternative*

The No Action Alternative would not affect any floodplain.

3.3 **Wetlands and Waters of the U.S.**

The United States Army Corps of Engineers (USACE) is the jurisdictional agency with authority to permit the discharge of dredged or fill material into Waters of the United States (WOUS) per Section 404 of the Clean Water Act (CWA). Outlined within the CWA, wetlands are categorized as “Other WOUS.” The USACE further defines wetlands as areas that are “inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (USACE 1987) (40 CFR Part 230.3(t)).

Per E.O. 11990, *Protection of Wetlands*, federal agencies are instructed to avoid to the extent possible, the long-term and short-term adverse impacts associated with the destruction or modification of wetlands, and to avoid direct or indirect support of new construction in wetlands whenever there is a practicable alternative. Additionally, the USDA’s Departmental Regulation 9500-3, *Land Use Policy* discourages unwarranted wetland alteration and requires alternatives or minimization efforts whenever wetland impacts are unavoidable.

3.3.1 Affected Environment

United States Fish and Wildlife Service (USFWS) National Wetlands Inventory data is not available within the project area. Without field verification, wetlands are assumed to be present in all undisturbed, vegetated areas above MHW. There is no indication that vegetation in the project footprint is unique or uncommon in the region. DOWL used existing drone imagery, published tidal elevations, and other information to determine the HTL and MHW for each site. Tidelands extend from low tide to MHW, and navigable waters include territorial seas.

3.3.2 Environmental Consequences

3.3.2.1 *Proposed Action*

The project will involve work in aquatic resources and impact WOUS under USACE jurisdiction per Section 10 of the Rivers and Harbors Act and Section 404 of the CWA. WOUS impacted by the proposed project include tidelands, wetlands, and navigable waters.

The proposed project extends more than three miles offshore into federal waters, but the Bureau of Ocean Energy Management does not require permits for subsea cable laying operations in federal waters (i.e., 3 miles or more offshore).

Complete avoidance of impacts to WOUS is not feasible; however, impacts have been minimized by siting project features in developed/disturbed areas to the greatest extent practicable.

Any trenching work conducted in vegetated areas would be assumed to result in temporary impacts to jurisdictional resources and all fill (e.g., BMH, shelter pads, vaults) would result in permanent impacts to jurisdictional resources.

Permanent Impacts

Permanent impacts include installation of BMHs, vaults, and fill to create shelter pads. The estimated area of affected wetlands constituting permanent project impacts from the proposed project footprint is 4,225 ft² (0.096 acres), as described in Table 6.

Table 6: Permanent Impacts to Terrestrial Wetlands

Location	Impact by Project Element (square feet)		
	Beach Manholes	Vaults	Shelter Pads
Mill Bay (Kodiak)	N/A	N/A	N/A
Larsen Bay	25	300	0 ¹
Chignik Bay	0 ¹	450	0 ¹
Sand Point	0 ¹	600	0 ¹
King Cove	0 ¹	375 ^{2a}	0 ¹
Akutan	25	250	625
Unalaska	0 ¹	1,625 ^{2b}	0 ¹
Total	50	3,600	625

Note: N/A (not applicable).

¹ Site is disturbed/developed and not within wetlands.

^{2a} Of the 20 vaults needed for the project in King Cove, 15 would be placed in wetlands.

^{2b} Of the 184 vaults needed for the project in Unalaska, 65 would be placed in wetlands.

Permanent and temporary impacts would be permitted under Nationwide Permit (NWP) 57 (Electric Utility Line and Telecommunications Activities). Correspondence with USACE and the Pre-Construction Notification application provided to the USACE are included in Appendix B.

Temporary Impacts

The estimated area of temporarily affected WOUS, including terrestrial wetlands, is approximately 233, 982 ft² (6.65 acres) as shown in Table 7. Temporary impacts from trenching between existing facilities to end users would be permitted along with permanent impacts (NWP 57) with one NWP for each community.

Table 7: Temporary Impacts to Intertidal (Mean Low Water to High Tide Line) and Terrestrial Wetlands

Location	Intertidal Area (WOUS)		Terrestrial Wetlands (areas above HTL to existing facilities)		Terrestrial Wetlands (existing facilities to end users)		Total (acres)
	Linear feet	Acres ²	Linear Feet	Acres ²	Linear Feet	Acres ²	
Mill Bay (Kodiak)	202.4	0.4	N/A	N/A	N/A	N/A	0.4
Larsen Bay	404.8	0.07	43.6	< 0.01	8,994.2	0.21	0.28
Chignik Bay	615	.011	727.7	0.01	16,521.5	0.38	0.4
Sand Point	214.6	0.04	2,943.0	0.54	31,476.0	0.72	1.3
King Cove	133.2	0.02	32.4	0.01	19,549.0	0.45	0.48
Akutan	42.8	0.01	334.2	0.06	4,560.5	0.10	0.17
Unalaska	47.1	0.01	0 ¹	0 ¹	152,881.0	3.51	3.52
Total	1,659.9	0.56	4,080.9	0.62	233,982.2	5.37	6.55

Note: HTL (high tide line); N/A (not applicable); WOUS (Waters of the U.S.).

² Trenches would be 8 feet wide (3-foot-wide trench with 5-foot sidecast)

Temporary impacts in the marine environment from trenching and plowing total approximately 3,278,180 linear feet (75.3 acres), as shown in Table 8. Approximately 173 miles of fiber optic cable will be laid directly on the seafloor, which does not constitute an impact, as it is not regulated by the USACE.

Table 8: Temporary Impacts to Waters of the U.S. in Marine Areas (Below Mean Low Water)

Project Activity	Linear Feet	Linear Miles	Total (acres) ¹
Trenching	5,539	1.1	0.13
Plowing	3,273,181	619.9	75.14
Total	3,278,180	621.0	75.27

¹ Trenches are 1 foot wide

The project is being constructed to meet NWP conditions and would have minimal impacts to wetlands and aquatic environments.

In accordance with guidelines prepared by the U.S. Water Resource Council to implement E.O. 11990, an eight-step decision making process (Part 1970, Subpart G) is included below. The public notice will be posted concurrently with this EA. All correspondence with appropriate wetland regulators was conducted and is included in Appendix B.

3.3.2.1.1 Eight Step Process

(a) Step 1. DETERMINE IF THE PROPOSED ACTION IS IN A WETLAND. Determine whether the applicant's proposed action is located in a wetland and whether it has the potential to affect or be affected by a wetland. Refer to this Subpart at 1970.407 (Wetland Determination) for wetland determination guidance and at 1970.408 (Alternatives Analyses and Mitigation Measures) for wetland alternatives analysis guidance. The applicant is responsible for providing this information

to the Agency. The applicant is responsible for describing the proposed action, the affected wetland(s), and including or referencing maps showing the action's location with respect to the wetland. If the federal action will have no impact to a wetland, no further action is necessary. If the federal action will impact a wetland, continue to step 2.

As discussed in Section 3.3.1, a review of the United States Fish & Wildlife Service (USFWS) National Wetlands Inventory showed no wetland information for the region. Without field verification, wetlands are assumed to be present in all undisturbed, vegetated areas above mean high water (MHW). DOWL used existing drone imagery, published tidal elevations, and other information to determine MHW for each site. Tidelands extend from low tide to MHW, and navigable waters include territorial seas.

(b) Step 2. PRELIMINARY PUBLIC NOTICE. Notify the public at the earliest possible time of the Agency's intent to carry out an action in a wetland and involve the affected and interested public in the decision-making process. The preliminary public notice requirements for particular actions are outlined in 1970.409 and Exhibit B.

The Preliminary Public Notice for Potential Impacts to Wetlands will be posted with the Notice of Availability for this EA.

(c) Step 3. SEARCH FOR PRACTICABLE ALTERNATIVES. Identify and evaluate practicable alternatives to locating the proposed action in a wetland including off-site and on-site alternatives, alternative configurations, other avoidance actions and the "no action" alternative, as appropriate. All proposals with impact to wetlands should document the "no action" alternative. If a practicable alternative exists outside the wetland, the Agency must consider that alternative.

Complete avoidance of impacts to Waters of the U.S. is not feasible but has been minimized by siting project features in developed/disturbed areas to the greatest extent practicable.

(d) Step 4. IDENTIFY ADVERSE IMPACTS AND BENEFICIAL VALUES/FUNCTIONS. Identify the potential direct, indirect, and cumulative wetland impacts that could result from the proposed action and alternatives. Identify primary and secondary functions and values of the wetland such as water quality improvement, water filtration, floodwater storage, fish and wildlife habitat, aesthetics, and biological productivity. Then analyze the impacts to the following factors: 1) Natural environment (topography, water sources, habitat areas, etc.), 2) Social concerns (aesthetics, historic and cultural values, land use patterns, etc.) 3) Economic and engineering aspects (costs of construction, transportation, access, ingress, egress, etc.), and 4) Legal considerations (permits, leases, deed restrictions, setbacks, etc.)

Prior to project construction or ground-disturbing activities within naturally vegetated areas, authorization for fill in wetlands would be obtained per Section 404 of the Clean Water Act. Due to minor permanent impacts (.1 acres), the USACE is currently reviewing the project's proposed use of Nationwide Permit (NWP) 57 (Utility Line Activities) for the 4,225 ft² of BMH, vault and shelter pad impacts. Although the project will result in extremely small impacts, a Pre-Construction Notification was provided to the USACE (Appendix B).

(e) Step 5. MITIGATE ADVERSE IMPACTS. Mitigation can take the form of avoidance, minimization of wetland impacts, or compensation for impacts including all efforts to minimize the adverse impacts to wetlands identified under Step 4. Avoidance can often be accomplished by

reviewing alternative layouts, designs, and configurations. It also employs on-site evaluation of those factors evaluated in Step including the presence of other natural or cultural resources, economic constraints, engineering constraints, transportation constraints, traffic constraints, site access, site buffer setbacks, etc. Agency environmental staff or the applicant should ensure documentation in the environmental file of any efforts to avoid, minimize, and mitigate adverse impacts to the wetland including restoration, preservation or enhancement of the natural and beneficial values served by the wetlands to be impacted. Additional avoidance, minimization, and mitigation measures are listed in 1970.408.

Due to the extremely small impacts, mitigation was not required by the USACE.

(f) Step 6. RE-EVALUATE ALTERNATIVES. Re-evaluate the proposed action to determine its potential to disrupt wetland values. Alternatives preliminarily rejected at Step 3 should also be re-evaluated as to whether they are practicable in light of the information gained in Steps 4 and 5. The Agency may deny financial assistance for a project that impacts a wetland if the Agency determines there are practicable alternatives which would accomplish the proposed action's purpose and need without wetland impact, regardless of whether or not a CWA Section 404 permit is issued. This is because Exec. Order 11990 applies additional requirements for the search for practicable alternatives to federal agencies, and also because of the CONACT S. 363 provisions.

(g) Step 7. FINAL PUBLIC NOTICE. Prepare and provide the public with a finding and explanation of the Agency's final decision that the wetland impact is the least damaging practicable alternative and that there is a significant need for the proposed action.

(h) Step 8. IMPLEMENT PROPOSED ACTION WITH APPROPRIATE MITIGATION. After the Agency has finalized the environmental review regarding wetlands and if a Finding of No Significant Impact (FONSI)/Record of Decision (ROD) is prepared, the proposed action maybe implemented. When wetland (or other important resource) impacts would occur from an Agency action, but permits/authorizations are not yet issued, the Agency can complete an Environmental Assessment (EA)and publish a FONSI/ROD evaluating the proposed impacts with an indication within the EA, the FONSI/ROD, and the Letter of Conditions/Conditional Commitment, that permit(s) and authorization(s) are pending and that any associated mitigation will be a requirement in the Letter of Conditions. However, the EA, FONSI/ROD, and Letter of Conditions/Conditional Commitment shall indicate that no construction shall commence until after the permit(s)is/are issued. The EA/EIS, FONSI/ROD, and Letter of Conditions/Conditional Commitment should also state that the applicant is required to send a revised project description to the Agency for evaluation should the impacts associated with the proposal vary significantly from those evaluated in the EA/EIS, and the Agency will need to supplement the EA/EIS.

3.3.2.2 No Action Alternative

The no action alternative would not impact WOUS.

3.4 Water Resources

Public drinking water sources are protected by federal and state regulations.

3.4.1 Affected Environment

The Project does not include creation of wastewater discharge or use of potable or industrial water. A search of the U.S. Environmental Protection Agency's (EPA) drinking water mapping

application indicates there are no impaired drinking water sources in the six communities. A search of EPA's sole source aquifers indicates there are no such resources in the six communities. The State of Alaska Department of Environmental Conservation (DEC) has identified drinking water protection areas based on approximate groundwater or surface water travel times. The majority of the project is outside of DEC drinking water protection zones, except for in the communities of Sand Point and Unalaska, where portions of the project extends into Zone A (Appendix C).

Water supply in Unalaska is comprised of two surface water sources and eight groundwater wells and the primary water source in Sand Point is the Humboldt Reservoir (City of Unalaska 2017; City of Sand Point 2020).

3.4.2 Environmental Consequences

3.4.2.1 Proposed Action

The Project in Sand Point extends into Zone A by approximately 1,000 feet and within 100 feet of a non-transient, non-community water system that has an intake in Humboldt reservoir, approximately 60 feet from Sand Point Avenue. The Project in Unalaska extends into Zone A by approximately one mile and within 200 feet of a groundwater-sourced community water system located off Broadway Avenue. However, the Project will not produce wastewater and disturbance would not extend more than five feet below ground surface, above aquifer depth. Neither the community nor non-community water system has a drinking water protection plan in place. The proposed alternative is not anticipated to affect sole source aquifers or community drinking water sources.

A Stormwater Pollution Prevention Plan (SWPPP) will include standard BMPs to minimize any temporary impacts to water quality.

3.4.2.2 No Action Alternative

The no action alternative would not affect sole source aquifers or community drinking water sources.

3.5 Coastal Resources

The Coastal Zone Management Act of 1970 is intended to protect both freshwater and marine coastal areas from environmental degradation. It applies to all lands on the boundary of any ocean or arm thereof, and the Great Lakes. The Coastal Barrier Resources Act and the Coastal Barrier Improvement Act only applies to selected geographic areas designated as "Coastal Barrier Improvement Act System Units." As of July 1, 2011, Alaska withdrew from the voluntary National Coastal Zone Management Program.

3.6 Biological Resources

The project is located in the Aleutian Island Ecoregion (Gallant et al. 1995), which is comprised of a chain of sedimentary islands (eroded from older volcanic formations) that are crowned by steep volcanoes and have a maritime climate. The region is south of the winter sea ice pack and is generally free from permafrost. Vegetation cover mainly consists of dwarf scrub communities at higher elevations and on sites exposed to wind, and of grass or herbaceous communities in more protected sites. Each landfall community is surrounded by hundreds of thousands of acres

of undeveloped land; some locations are surrounded by protected lands (national wildlife refuges). There is no indication that vegetation in the project footprint is unique or uncommon in the region.

3.6.1 Affected Environment

Essential Fish Habitat

The Magnuson-Stevens Fisheries Conservation and Management Act (1996) defines essential fish habitat (EFH) as "...waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." According to the National Ocean and Atmospheric Administration, National Marine Fisheries Service (NMFS) online database, EFH is present in the proposed project area. Table 9 summarizes species that have designated EFH within one mile from the proposed cable route. There are no Habitat Areas of Particular Concern or Habitat Conservation Areas within 1 mile of the proposed cable route. Subsequent sections provide more information on and maps of each species designated as EFH.

Table 9: Species with Designated EFH Within One Mile from the Proposed Cable Route

Species	Common Name	Designated EFH
<i>Pleuronectes quadrituberculatus</i>	Alaska Plaice	EFH widely distributed
<i>Atheresthes stomias</i>	Arrowtooth Flounder	EFH in eastern project area – False Pass to Unalaska
<i>Pleurogrammus monopterygius</i>	Atka Mackerel	EFH near Unalaska and Akutan
<i>Sebastes melanostictus and Sebastes aleutianus</i>	Blackspotted Rockfish and Rougheye Rockfish	EFH widely distributed
<i>Microstomus pacificus</i>	Dover Sole	EFH in eastern project area – False Pass to Unalaska
<i>Sebastes ciliatus</i>	Dusky Rockfish	EFH near Akutan and Unalaska
<i>Hippoglossoides elassodon</i>	Flathead Sole	EFH widely distributed
<i>Lithodes aequispinus</i>	Golden King Crab	EFH near Unalaska
<i>Reinhardtius hippoglossoides</i>	Greenland Turbot	EFH in eastern project area – False Pass to Unalaska
<i>Atheresthes evermanni</i>	Kamchatka Flounder	EFH widely distributed
<i>Lepidopsetta polyxystra</i>	Northern Rock Sole	EFH widely distributed
<i>Sebastes polyspinis</i>	Northern Rockfish	EFH near Unalaska and Akutan
<i>Octopus sp</i>	Octopus	EFH widely distributed
<i>Gadus macrocephalus</i>	Pacific Cod	EFH widely distributed
<i>Hippoglossus stenolepis</i>	Pacific Halibut	EFH widely distributed
<i>Sebastes alutus</i>	Pacific Ocean Perch	EFH near Akutan and Unalaska
<i>Glyptocephalus zachirus</i>	Rex Sole	EFH in eastern project area – Port Heiden to Unalaska
<i>Lepidopsetta bilineata</i>	Rock Sole	EFH widely distributed
<i>Sebastes sp</i>	Rockfish (various)	EFH widely distributed
<i>Anoplopoma fimbria</i>	Sablefish	EFH False Pass to Unalaska

Species	Common Name	Designated EFH
<i>Oncorhynchus tshawytscha</i>	Chinook	EFH widely distributed
<i>Oncorhynchus keta</i>	Chum	EFH widely distributed
<i>Oncorhynchus kisutch</i>	Coho	EFH widely distributed
<i>Oncorhynchus gorbuscha</i>	Pink	EFH widely distributed
<i>Oncorhynchus nerka</i>	Sockeye	EFH widely distributed
<i>Various species</i>	Sculpin	EFH widely distributed
<i>Sebastes borealis</i>	Shortraker Rockfish	EFH near Akutan and Unalaska
<i>Sebastolobus alascanus</i>	Shortspine Thornyhead Rockfish	EFH widely distributed
<i>Raja binoculata</i>	Skate	EFH widely distributed
<i>Chionoecetes opilio</i>	Snow Crab	EFH between False Pass and Akutan
<i>Doryteuthis sp</i>	Squid	EFH from False Pass to Unalaska
<i>Sebastolobus alascanus</i>	Shortspine Thornyhead Rockfish	EFH near Akutan and Unalaska
<i>Gadus chalcogrammus</i>	Walleye Pollock	EFH widely distributed
<i>Patinopecten caurinus</i>	Weathervane Scallop	EFH from False Pass to Unalaska
<i>Sebastes ruberrimus</i>	Yelloweye Rockfish	EFH near Akutan and Unalaska
<i>Limanda aspera</i>	Yellowfin Sole	EFH widely distributed

Endangered Species Act

A search of the USFWS Information, Planning, and Consultation (IPaC) online database for each site identified 10 threatened or endangered species within the proposed project limits (Appendix D). Consultations for species under NMFS and USFWS jurisdiction were conducted for marine portions of the entire project area, as shown in Table 10.

Table 10: Federally Listed Threatened and Endangered Species within the Project Area

Species	Agency	Status	Critical Habitat	Occurrence in Project Area (Marine or Terrestrial)
Blue whale (<i>Balaenoptera musculus</i>)	NMFS	Endangered	No	Marine
Fin whale (<i>Balaenoptera physalus</i>)	NMFS	Endangered	No	Marine
North Pacific right whale (<i>Eubalaena japonica</i>)	NMFS	Endangered	Yes	Marine
Western North Pacific gray whale (<i>Eschrichtius roubustus</i>)	NMFS	Endangered	No	Marine
Humpback whale (<i>Megaptera novaeangliae</i>) Western North Pacific Stock	NMFS	Endangered	Yes	Marine
Sperm whale (<i>Physeter macrocephalus</i>)	NMFS	Endangered	No	Marine
Steller sea lion (<i>Eumetopias jubatus</i>) Western stock	NMFS	Endangered	Yes	Marine
Northern sea otter (<i>Enhydra lutris</i>)	USFWS	Threatened	Yes	Marine
Steller's eider (<i>Polysticta stelleri</i>) Alaska Region	USFWS	Threatened	Yes	Marine and Terrestrial
Short-Tailed albatross (<i>Phoebastria albatrus</i>)	USFWS	Endangered	No	Marine and Terrestrial

Note: NMFS (National Marine Fisheries Service); USFWS (U.S. Fish and Wildlife Service)
Site specific listings for terrestrial work include short-tailed albatross and Steller's eiders in Chignik Bay, Sand Point, Akutan, and Unalaska.

The terrestrial project areas are adjacent to, but do not include, marine foraging habitat for eiders and albatross. No designated critical habitat for either bird occurs within the Project vicinity. Eiders and albatross remain in marine waters to molt and forage. The presence of either bird in the project area would be incidental to flyover.

Marine Mammal Protection Act

Marine mammals in the project area include the Blue whale, Fin whale, North Pacific right whale, Western North Pacific gray whale, Humpback whale, Sperm whale, Bearded Seal, Ringed Seal, Northern Fur Seal, Pacific White Sided Dolphin. Steller sea lion and Western stock Northern sea otter.

Migratory Bird Treaty Act

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918. In 1972, supplemental treaties expanded the MBTA scope to include bald eagles and other raptors. As such, the MBTA prohibits the taking of any migratory bird, their nests, or their eggs. IPaC identifies 13 species of migratory birds known to occur within the proposed project limits.

Bald Eagles

Eagles like to nest near coastlines, rivers, large lakes, or streams with abundant supply of food (e.g., fish). Eagles mostly nest in mature or old-growth forests, in trees with branches capable of supporting a nest weighing up to 1,000 pounds. Nests are often located in the tallest tree within 600 feet of a waterbody.

However, Unalaska is famously home to more than 600 eagles and unlike other areas of Alaska, eagles do not nest in trees (Unalaska has few trees), but on top of cliffs and man-made structures such as buildings and light poles (including the post office).

USFWS has published locations of eagle nest locations within Alaska. A review of this data was conducted on February 8, 2021 to identify the nearest nests to the proposed project as listed below (USFWS 2021):

- Mill Bay: greater than 3,500 feet
- Larsen Bay: approximately 3,000 feet
- Chignik Bay: approximately 2,600 feet
- Sand Point: approximately 20 miles
- King Cove: approximately 20 miles
- Akutan: approximately 7 miles
- Unalaska: approximately 4 within 330 feet

Nest locations in the Unalaska area have not been recently verified and were first documented in the database in 2001 and 2002. A request was sent to USFWS for more recent data and no response was received. With the exception of small cliff areas along Ballyhoo Road, the landscape around most of the project consists of unsuitable nesting habitat.

Invasive Species

Per E.O. 13112, invasive species are defined as alien species whose introduction causes or is likely to cause economic or environmental harm or harm to human health. By law, federal agencies are required to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impact attributed to invasive species.

A search of the Alaska Exotic Plants Information Clearinghouse (AKEPIC) Mapping System of invasive species, resulted in the following invasive species within 250 feet of the project area (AKEPIC 2021):

- Unalaska
 - 1 occurrence of Common chickweed (*Stellaria media* (L.) Vill)
- Larsen Bay
 - 1 occurrence of Common tansy (*Tanacetum vulgare* L.) –
 - 7 areas totaling 1 acre with at least 50% coverage of Oxeye daisy (*Leucanthemum vulgare* Lam.)

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

General Fish and Wildlife

The project is not anticipated to bisect, fragment, or adversely affect wildlife habitat. The project is designed to avoid conflict with commercial or subsistence fisheries.

Essential Fish Habitat

An EFH Assessment was prepared to describe the proposed action, existing conditions in the project area, designated EFH in the project corridor, potential effects to EFH, and potential mitigation or conservation measures. The project may temporarily adversely affect EFH during construction due to:

- Temporary habitat alteration in the plow or trench path during construction.
- Temporary localized increase in turbidity in the plow or trench path during construction.
- Short term entrainment or mortality of individuals in the plow or trench path during construction.

Although EFH in the action area will be adversely impacted, the Project will not impact EFH to the point of causing major adverse impacts to fish populations. Individuals of a variety of species are expected to move successfully into similar habitats, since the types of habitats that will be affected are not unique or rare. All effects would be temporary during construction and conservation measures will be used to avoid and minimize impacts to the extent possible. The EFHA was submitted to the NMFS EFH staff for review and on May 12, 2021 NMFS stated that EFH consultation is complete. Documentation related to EFH consultation can be found in Appendix E.

Endangered Species Act

DOWL, acting as a non-federal representative to the USACE, initiated informal Section 7 consultation under the Endangered Species Act (ESA) with the USFWS and NMFS. Biological Assessments (BA) were prepared and submitted to the USFWS and NMFS in June and August 2019, respectively. Both NMFS and USFWS concurred that the project may affect, but is not likely to adversely affect or result in adverse modification of critical habitat for any federally listed species. Given that the 2019 consultation did not include the terrestrial components of the project, informal Section 7 consultation was reinitiated with the USFWS on March 30, 2021. The USFWS concurred on April 2, 2021 that the terrestrial project elements may affect, but are not likely to adversely affect listed species. Both BAs are included in Appendix F. Documentation of ESA consultation is also included in Appendix F.

Subsequently, NMFS designated critical habitat for the Mexico and Western North Pacific DPS humpback whales on April 20, 2021 (86 FR 21082). Critical habitat for the Western North Pacific DPS includes approximately 59,411 square nautical miles of marine habitat in the eastern Bering Sea and Gulf of Alaska, including the eastern Aleutian Islands, the Shumagin Islands, and around Kodiak Island. Critical habitat for the Mexico DPS includes approximately 116,098 square nautical miles of marine habitat in the eastern Bering Sea, Gulf of Alaska, and California Current Ecosystem, including the same areas as Western North Pacific DPS plus the Prince William Sound area. Given the nature of the impacts of the project on the critical habitat, DOWL requested concurrence that marine project elements would not adversely modify the critical habitat; NMFS concurred on June 11, 2021. All consultation communication is included in Appendix F.

Since the 2019 consultation was completed, no new species have been listed in the project area. RUS concludes that with the supplemental consultation and concurrence from the USFWS and NMFS, ESA consultation is complete.

Marine Mammal Protection Act

USFWS determined that noise levels associated with the subsea cable installation activity will not reach levels exposing marine mammals to a Level B take harassment under the Marine Mammal Protection Act (MMPA). Although it is possible that some sea otters may exhibit minor, short-term disturbance responses to underwater sounds from the cable-laying activities, based on expected sound levels produced by the activity, any potential impacts on otter behavior would likely be localized to within a hundred meters of the active vessel(s) and would not result in population-

level effects. Correspondence with NOAA's Office of Protected Resources stating there is no need for an Incidental Harassment Authorization for the project is included in Appendix F.

Migratory Bird Treaty Act

The USFWS-recommended vegetation clearing avoidance window for this region of Alaska is May 5 to July 25, in order to avoid impacts to nesting birds. Vegetation clearing would typically consist of grasses and small shrubs along existing disturbed roads, which is unlikely to be favorable nesting habitat for migratory birds. All vegetation clearing will be completed outside of nesting periods during the project construction.

Bald Eagles

The majority of the project would not adversely affect bald eagles or their nests as the mapped eagle nests are greater than 2,500 feet from the terrestrial portion of the project. However, in Unalaska there are 4 nests within 330 feet of the project.

USFWS has determined common construction activities may produce noise and/or vibration that can disturb eagles during nesting season. If construction of a linear utility is visible from the nest and other similar activities (i.e., existing road, single story structures) are located within a similar distance from the nest, then construction activities are recommended to be greater than 660 feet from the nest.

Equipment used to install the terrestrial fiber optic cable would be a rubber wheel backhoe or tracked excavator/backhoe (medium to large excavator required in Unalaska) and would be used along existing roads that typically are busy with heavy equipment during construction season. In addition, as mentioned above, Unalaska is the largest fishing port in the United States with several commercial fish processing plants, and thus is a community that experiences significant industrial activity. The trench would be approximately three-feet wide by three-feet deep and require minor clearing along the trench route. Vegetation typically consists of grasses and small shrubs.

The project is not anticipated to adversely affect eagle nests or bald eagles as eagles in Unalaska have been habituated to road, industrial, and construction noises. Studies show that eagles are currently nesting in higher densities near human activities compared to decades ago, contributing to generational habituation (Guinn 2013).

Bald eagle habitation research conducted by Alaska Department of Transportation and Public Facility (DOT&PF) in Southeast Alaska found that bald eagles in Alaska have "adapted to the human landscape and there does not appear to be as significant of impact to nest occupation and productivity near highway construction areas (limited to activities within the study)." USFWS was advised to reduce buffer zones around active nests in areas already impacted by human activities and landscapes. They also recommended new guidelines specifically for Alaska (ADOT&PF 2019). A letter to USFWS was sent on March 19, 2021 explaining the project and requesting updated data. No response was received.

Based on the discussion above, we conclude that the project is not likely to have significant impacts on bald eagles. However, GCI would be responsible for obtaining an eagle take permit if necessary, for the project.

Invasive Species

Trenching activities will result in the replacement of in-situ soils and will not require the importation of non-native fills. Clean gravel will be used to construct shelter pads. Re-vegetation of disturbed

areas will occur as soon as practicable with local and native species. Therefore, the project is unlikely to contribute to the spread of invasive species.

3.6.2.2 No Action Alternative

The no action alternative would not require land disturbance and would not impact biological resources within the review area.

3.7 Historic and Cultural Properties

Provisions under Section 106 of the National Historic Preservation Act require federal agencies to consider potential effects of federal undertakings on historic, and to consult with the Alaska State Historic Preservation Office (SHPO), appropriate tribal entities, and other stakeholders. Additionally, outlined under the Archaeological Resources Protection Act, archaeological site information is confidential, and disclosure of such information is exempt from requests under federal and state freedom of information laws.

3.7.1 Affected Environment

For the proposed project, the area of potential effects (APE) encompasses areas where ground disturbing activities may occur with an appropriate buffer. The APE for terrestrial operations is approximately 30 feet on either side of all ground-disturbing work resulting in a 60-foot corridor. The APE for marine activities is 150 feet on either side of the cable lay route resulting in a 300-foot corridor.

3.7.1.1 Terrestrial Area of Potential Effect

The Alaska Office of History and Archaeology (OHA) Alaska Heritage Resource Survey (AHRS) database was examined for previously recorded sites in the APE, from which a total of 79 AHRS sites were identified that intersect or are located within the terrestrial APE. Of these properties, seven have been determined eligible for listing in the National Register of Historic Places (NRHP), one is a National Historic Landmark (NHL), three are contributing properties to the NHL, two have been determined not eligible for listing in the NRHP, and the remaining 66 properties have not been evaluated for their eligibility for listing in the NRHP.

3.7.1.2 Marine Area of Potential Effect

A review of the AHRS database indicated that the marine APE passes through AHRS site UNL-00120 (Dutch Harbor Naval Operating Base and Fort Mears National Historic Landmark). However, there are no known or identified submerged components of this property. No additional previously identified AHRS sites were identified within or intersecting the marine APE. Furthermore, a review of the National Oceanic and Atmospheric Administration's Wrecks and Obstructions database did not identify any documented cultural features within or intersecting the marine APE.

3.7.2 Environmental Consequences

3.7.2.1 Proposed Action

To comply with the requirements of Section 106 for the project, a Programmatic Agreement (PA) was developed by RUS to allow for a phased process to identify, evaluate, assess, and avoid,

minimize, and/or mitigate project effects on historic properties. All Section 106 related correspondence and the PA are in Appendix G. The PA contains the following key agreements which must be completed by the project applicant:

- A subsea sonar survey of the Marine APE was completed in June 2021. Following that survey, the data will be reviewed by a marine archaeologist to identify potential anthropogenic or cultural remains within the marine APE. This review will include interpretation of remote-sensing geophysical and geotechnical data acquired in support of the proposed project, as well as historic and archival database inventory records. The review will be submitted to RUS along with any recommended alignment changes based on the archaeological review. RUS and SHPO must approve the report prior to the applicant commencing installation of the project in the marine APE.
- For the terrestrial APE, the base requirement of the PA is for the applicant to provide an archaeological monitor in all areas of ground disturbing activity in all communities for the proposed project. However, if the applicant elects, the PA allows for the applicant to conduct cultural resources surveys within the communities to further refine the known locations and/or distribution of cultural resources within the communities. In these cases, the applicant must submit a proposed plan and research design to RUS and SHPO for approval prior to conducting the fieldwork, and a report describing the results and recommendations for monitoring revisions based on the fieldwork to RUS and SHPO. RUS and SHPO must approve the report prior to the applicant commencing any modified construction in any communities.

3.7.2.2 *No Action Alternative*

The no action alternative would have no impacts to historic properties.

3.7.2.3 *Mitigation*

As noted above, a PA has been developed for the project to avoid, minimize, or mitigate adverse effects to historic properties. Consulting parties and signatories to the PA include:

- USDA RUS
- USACE
- SHPO
- Aleutiq Museum
- Oonalashka Corporation

The signed PA is included as Appendix J.

3.8 **Aesthetics**

Aesthetic effects include the extent to which the proposed development contrasts with the existing environment, architecture, historic or cultural setting, or land use planning.

3.8.1 *Affected Environment*

Land uses surrounding the project area within communities primarily consists of developed roads, residential areas, and institutional buildings.

3.8.2 Environmental Consequences

3.8.2.1 *Proposed Action*

The structures and facilities proposed would be relatively small, considering the broad landscapes in the region, and would not change the overall aesthetics of the area. No additional lighting is included in the project. The project is not anticipated to substantially alter the visual characteristics of the existing natural environment.

3.8.2.2 *No Action Alternative*

The no action alternative would not change the aesthetics of the existing communities and villages.

3.9 Air Quality

The Clean Air Act is a comprehensive federal law which authorizes the EPA to establish National Ambient Air Quality Standards to protect public health and public welfare, and to regulate the emissions of hazardous air pollutants, through Section 176(c) of the Clean Air Act, as amended in 1990. DEC oversees air quality in the State of Alaska through Alaska Statute 46.03 and regulations in 18 AAC 50.

3.9.1 Affected Environment

Per the Alaska Administrative Code (AAC) 18 AAC 50.15, each community in the project area is considered a Class II area allowing moderate increases in particulate matter, sulfur oxides, and nitrogen oxides as designated by the State (18 AAC 50.020). Impacts to air quality during construction are anticipated to be minimal and temporary.

3.9.2 Environmental Consequences

3.9.2.1 *Proposed Action*

Generators located in existing facilities in each community would only be used during power outages and would not create a constant source of emissions. Temporary construction-related impacts to air quality would be minimal and no long-term impacts to air quality are anticipated. A SWPPP for Unalaska and Erosion and Sediment Control Plan (ESCP) for all other communities are under development and include standard BMPs for dust control.

3.9.2.2 *No Action Alternative*

No impacts to air quality would occur.

3.10 Socio-Economic Issues and Environmental Justice

E.O. 12898 requires the consideration of environmental justice (EJ) issues during the Agency's environmental review process regarding minority populations and low-income populations. EJ is the fair treatment and meaningful involvement of all people of all races, color, origin, or income with respect to development, implementation, and enforcement of environmental laws.

3.10.1 Affected Environment

Each of the communities in the project area are solely comprised of EJ populations, per the EPA EJ Mapper (Appendix H). This project is not anticipated to result in any adverse effects as each community has voiced support for this project (Section 6.1, *Stakeholder Engagement*). Community demographics are summarized for each community in Table 11.

Table 11: Project Area Demographics

Community	Population	Low Income Population	People of Color Population
Larsen Bay	77	55%	83%
Chignik Bay	79	41%	79%
Sand Point	1,386	32%	83%
King Cove	110	37%	91%
Akutan	112 ^a	37%	81%
Unalaska	4,781	26%	75%
Total	6,545	N/A	N/A

Source: EPA 2021.

Note: N/A (not applicable).

^a the census reports the population at 761, however this number likely includes seasonal workers and not year-round, permanent residents. The estimate of 112 for the year 2000 is from the City of Akutan (City of Akutan 2005).

State average: Low income population 25%; People of color population 39% (EPA 2021).

The average download speed across all of Alaska is 74.01 megabytes per second (BroadbandNow 2021)², though the project’s communities in southwest Alaska typically receive far slower speeds, as identified below. Table 12 summarizes current residential broadband service options for each community, as well as each community’s average download speed. Each of the project’s communities has at least one residential telecommunications and internet service provider.

² BroadbandNow (<https://broadbandnow.com/>) uses datasets pulled directly from the Federal Communications Commission and U.S. Census Bureau, as well as directly from broadband providers, resellers, and other sources.

Table 12: Current Residential Broadband Service Options by Community

Community	HughesNet	TelAlaska	GCI	Average Download Speed
Larsen Bay	Satellite: 10 GB (\$50/month) up to 50 GB (\$140/month)	Not available	Not available	1.60 Mbps
Chignik Bay	Satellite: 10 GB (\$50/month) up to 50 GB (\$140/month)	Not available	Fixed wireless internet: 600 GB (\$150/month) up to no data cap (\$175/month)	0.08 Mbps
Sand Point	Satellite: 10 GB (\$50/month) up to 50 GB (\$140/month)	DSL: No data cap (\$125 - \$155/month)	Not available	1.14 Mbps
King Cove	Satellite: 10 GB (\$50/month) up to 50 GB (\$140/month)	DSL: Not data cap (\$125 - \$155/month)	Fixed wireless internet: 600 GB (\$150/month) up to no data cap (\$175/month)	2.33 Mbps (estimated)
Akutan	Satellite: 10 GB (\$50/month) up to 50 GB (\$140/month)	Not available	Not available	2.00 Mbps (estimated)
Unalaska	Satellite: 10 GB (\$50/month) up to 50 GB (\$140/month)	Cable, DSL: No data cap (\$125 - \$155/month)	Not available	4.68 Mbps

Source: BroadbandNow 2021.

Notes: DSL (digital subscriber line); GB (gigabyte); Mbps (megabytes per second).

3.10.2 Environmental Consequences

3.10.2.1 Proposed Action

The proposed action would improve the function of the services provided to residents and would not have a disproportionate impact on minority or low-income populations. Unicom is currently planning to contract with its parent company (GCI) to provide broadband service equivalent to urban Alaska services at comparable prices. The proposed telecommunications service would increase the project's six communities' access to reliable and fast broadband service, which will positively affect many socioeconomic aspects of each community, including the efficacy of health and educational services. Additionally, Unicom developed a joint trench agreement with the City of Unalaska to allow other entities to place fiber in the AU Aleutian trench while it's open, allowing a connection between the Fire and Police stations to the same emergency systems used in Urban areas. Such an upgrade of the emergency response system is another potential benefit for these communities.

GCI would offer residential plans that parallel the speeds and data usage allowances broadband packages available in GCI's largest market, Anchorage. Table 13 summarizes the anticipated residential data plans that would be offered in the project's six communities, and illustrates the benefits to these communities, in terms of relatively inexpensive, high-speed connectivity.

Table 13: Current Residential Broadband Service Options by Community

Plan Name	Network Speed	Monthly Cost
Fast	100 Mbps download/ 5 Mbps upload	\$112.50
Faster	200 Mbps download/ 10 Mbps upload	\$150.00
Fastest	400 Mbps download/ 20 Mbps upload	\$225.00
One Gig Red	1 Gbps download/ 50 Mbps upload	\$300.00

Source: GCI, <https://www.gci.com/internet#plans>

Notes: Gbps (gigabyte per second); Mbps (megabytes per second).

3.10.2.2 *No Action Alternative*

The no action alternative would continue to delay economic development as use of the existing system would continue to operate with high latency and low bandwidth and the limited capacity of satellite systems. In addition, satellite systems remain the highest cost alternative over time.

3.11 Miscellaneous Issues

3.11.1 *Noise*

The proximity of construction activities and operations as a result of the project to other land uses can produce sounds that could create noise impacts for proximal sound receptors (e.g. schools, hospitals, residences). Typically, noise is defined as unwanted sound.

3.11.1.1 *Affected Environment*

Sources of noise in the project area are from boats, cars, trucks, all-terrain vehicles, and small planes from adjacent airports.

3.11.1.2 *Environmental Consequences*

3.11.1.2.1 *Proposed Action*

Construction activities would temporarily increase noise from the use of heavy equipment. These impacts would be isolated to construction areas and would be temporary, limited to the duration of active project construction within each community as described in Section 2.1.3, *Community-Specific Operations*. The proposed action would not have a substantial or long-term impact on sensitive sound receptors. Communication shelters housing generators would only be used during power outages and would be located in existing facilities in each community.

3.11.1.2.2 *No Action Alternative*

The no action alternative would not have an impact on sensitive sound receptors.

3.11.2 Transportation

The project would result in minor amounts of additional traffic as construction crews complete terrestrial fiber optic cable installation within each of the project's communities.

3.11.2.1.1 Affected Environment

The project is within communities only accessed by air and water; there are no external roads into any community. Passengers arrive mostly by air. The network of local roads provides access throughout the town and to some subsistence fishing and recreation sites. The road network is largely unpaved.

3.11.2.2 Environmental Consequences

3.11.2.2.1 Proposed Action

The proposed action would not change local travel patterns or increase travel distances to access public facilities. During construction, minor access control would need to be implemented to provide safe access to residential, commercial, and public facilities. Traffic Control Plans will be used to ensure safety by temporarily diverting car or foot traffic around construction areas. These impacts would be temporary. Overall, there would be no substantial impacts to transportation.

3.11.2.2.2 No Action Alternative

The no action alternative would have no impact on local transportation routes.

3.12 Human Health and Safety

3.12.1 Electromagnetic Radiation from Base Stations (Cell Towers and Microwave Towers)

3.12.1.1 Affected Environment

GCI operates limited cellular and microwave facilities in the project's six communities. Research into the potential human health effects with regard to electromagnetic radiation from cell towers and microwave towers is inconclusive.

3.12.1.2 Environmental Consequences

The proposed project would not construct any new cellular or microwave towers; therefore, this was not evaluated further.

3.12.2 Environmental Risk Management

The National Environmental Policy Act requires all applicants for federal financial assistance to be reviewed for, among other things, any risks to health and safety. Environmental due diligence actions overseen by the agency are related to hazardous substances and waste, and petroleum waste products – hereafter referred collectively as “hazardous materials.” Due diligence is geared toward identifying any releases of hazardous materials that may impact a borrower's real property or operations, and thereby create potential legal and financial risks. There are three levels of environmental due diligence: transaction screen process, Phase I environmental site assessment,

and Phase II environmental site assessment. The agency will not normally conduct environmental due diligence for grant-only applications, unless it comes to the attention of the agency that a hazardous materials problem may exist.

3.12.2.1 *Affected Environment*

The DEC contaminated sites mapper and database was reviewed on February 15, 2021 and identified 39 active sites, 18 sites that have a status of cleanup complete, and four sites with institutional controls (IC) within 500 feet of the project. Most of these sites are in Unalaska as there are none in Mill Bay, one active site in Larsen Bay, two active and one IC sites in Chignik Bay, one in Sand Point that is cleanup complete, and one active site in King Cove.

The project is also within the boundaries of a large area managed by the USACE under the Formerly Used Defense Sites (FUDS) program, identified as the Amaknak property. The Amaknak FUDS includes the Naval Reservation (e.g., Naval Operating Base), Fort Brumback, Fort Schwatka, and Fort Mears.

The Amaknak FUDS consists of 11 active projects including 6 projects that may intersect Unicom Fiber Optic Landfall Route: Ballyhoo Spit, Mount Ballyhoo, Margaret Bay-Airport, Unalaska Valley, Pre-WWII Tank Farm, and Range Complex No. 1. The Ballyhoo Spit, Mount Ballyhoo, Margaret Bay-Airport, Unalaska Valley, and Pre-WWII Tank Farm containerized hazardous toxic radioactive waste projects addresses old pipelines, Underground Storage Tanks (USTs) and Aboveground Storage Tanks (ASTs), drums, and associated petroleum-contaminated soil. Work to date has resulted in the removal of more than 200 USTs and ASTs, more than 10,000 feet of pipeline, and the cleanup of more than 52,000 tons of petroleum-contaminated soil. The Dutch Harbor Vicinity project addresses old pipelines, USTs and ASTs, drums, and associated petroleum-contaminated soil from many locations throughout the Amaknak FUDS property. Many buildings that were removed early in the FUDS program are suspected to have had associated USTs that were not addressed during building removal. Historic information indicates that there may have been as many as 325 USTs, ranging from 300 to 3,000 gallons, at the site. Work to date has resulted in the removal of more than 200 USTs and ASTs, and the thermal treatment of more than 42,000 tons of petroleum-contaminated soil.

3.12.2.2 *Environmental Consequences*

3.12.2.2.1 *Proposed Action*

No hazardous materials will be used or generated during the construction of this project and no excess material is anticipated to be produced requiring disposal. Hazardous sites in the vicinity of the project have petroleum-contaminated groundwater. The deepest excavation type for the project is to support installation of BMH or vault (depth of 5 feet), with trenching reaching a depth of 3 feet. Construction will be done later in the summer when the water table is low and the likelihood of groundwater flooding the trench would be minimal. If groundwater does flood the trench, Unicom will have an Excavation Dewatering Permit through DEC, with a BMP Plan designed around mitigation for potential petroleum contamination. It is likely the fiber optic cable would be placed in the trench with water present, instead of dewatering the trench and discharging to the ground which would pose a risk of spreading existing contamination. If contamination is encountered while excavating the trench, BMPs approved and recommended by DEC (DEC 2017) would be followed based on the contamination type. An excavation de-watering permit from DEC will be obtained which will include BMPs to minimize risk of encountering or spreading contaminated water. If a minimal amount of contaminated water is encountered it will be backfilled.

If a significant amount of water is encountered it will be contained and shipped off site for processing.

Military munitions project Range Complex No. 1 is located on and in the surrounding waters of Unalaska Island. Military munitions, such as medium caliber munitions and small arms ammunition, were potentially used. The USACE is unable to rule out the presence of munitions that may pose an explosive hazard. USACE FUDS project managers advised the best way to ensure safety if staff finds a military munition, is to follow the FUDS safety guide, do not approach, touch, move or disturb it, carefully leave the area, and call 911 and advise the police of what you saw and where you saw it (Appendix I).

3.12.2.2 No Action Alternative

The no action alternative would not involve dewatering or soil-disturbing activities; therefore, there is no risk of encountering contamination from off-site sources.

3.13 Corridor Analysis

In accordance with USDA NEPA guidelines (An analysis of the project corridor was inherent in route selection and the following describes key factors and characteristics of the corridor and issues considered in selecting routes.

3.13.1 Subsea Corridor

The project endpoint in Mill Bay (Kodiak) is fixed and cannot be moved as this is the site of the tie into the GCI Kodiak Kenai Fiber Link Network. The project endpoint in Unalaska is generally fixed as Unalaska is the primary community receiving broadband service. The project endpoint in Unalaska is defined as the site of existing facilities, which cannot be moved. Each community has its own endpoint, which is the site of existing facilities. Selecting the route between each of these endpoints was primarily based on shortest distances, avoidance of cultural resources, and land ownership.

Marine-based subsea routes were the first chosen and were evaluated in a 2018 study that evaluated the physical conditions, feasibility, and risks along a preliminary subsea fiber route (TerraSond 2018). This study also included site visits and outreach to community members, tribes, and city officials to obtain information about ROW, plans for future development, and other issues. Interviews were also conducted with mariners, fisherman, harbor masters and representatives of the fishing industry. The TerraSond report (2018) details the site conditions at each landing, identifies preliminary landfall locations and placement of BMHs, and identified risk to cable infrastructure in the marine environment from both manmade and natural hazards. The landing (Akutan) was changed from the recommended site in the TerraSond report (2018) due to the proximity to a graveyard and the landing site in Chignik Bay was changed based on further input from the Mayor of Chignik Bay. Additionally, the route in Chignik Bay is being refined based on the more detailed June 2021 submarine survey to avoid features of the seafloor that would pose technical challenges. The resulting route is the one that is least likely to require future disturbance in the form of system repairs due to cable breakage.

3.13.2 Terrestrial Corridors

Trenching locations within communities were selected to take advantage of existing ROW and existing disturbance to the highest degree possible. The project would install the terrestrial fiber

optic cables primarily within existing roadways, which typically include other local utilities (e.g., power, water, wastewater); Chignik Bay and Larsen Bay have existing utility poles for power and/or communications cables which may be used to support local fiber optic cable distribution. Communication with stakeholders began in 2017 and is ongoing. Community outreach efforts have engaged with regional organizations, tribal and Alaska Native organizations, city governments, boroughs, and with local business groups, including fisheries. Additional public outreach details are in Section 6.1, *Stakeholder Engagement*.

4 CUMULATIVE EFFECTS

The cumulative effects assessment considers the effects of the proposed action in combination with the effects of past, present, and RFFAs (Table 14). While the direct or indirect impacts of each individual project may be minor, when combined they may be substantially larger. Past and present actions are part of the existing conditions of the affected environment and are described in Chapter 3.0. An RFFA is defined as a project for which there is an existing proposal, a project currently in the NEPA process, or a project to which a commitment of resources (such as funding) has been made. The geographic scope of the cumulative effects analysis for most resources is the area in which direct and indirect effects of each resource would occur (i.e., where there would be project effects that could overlap with past, present, or RFFAs). For biological resources (marine mammals), the geographic scope of the cumulative effects analysis is larger because the species that would be affected are mobile.

USDA considered agency input (see Chapter 6.2, Agency Scoping, and Appendix J, Agency Correspondence) and used the technical analyses conducted for the EA to identify and focus on cumulative effects that are “truly meaningful” in terms of local, regional, or national significance (CEQ 1997).

Table 14: Reasonably Foreseeable Future Actions That May Cause Cumulative Impacts

Project Name	Community	Description	Status
Inter-Village Road System Project ¹	Chignik Bay	21-mile new road to connect the communities of Chignik Bay, Chignik Lagoon, and Chignik Lake	Future
Anton Larsen Bay Road Extension ²	Larsen Bay	New 2-mile gravel road ending in a parking lot and boat launch. Finding of no Significant Impact in June 2020.	Future
Anton Larsen Bay Dock Concrete Pad Extension Project ³	Larsen Bay	Extension of a concrete pad at the existing dock	Future

1. Native Village of Chignik Lagoon 2021

2. Federal Highway Administration 2021

3. Kodiak Island Borough 2021

Wetlands: Because 1) the project would result in a total of 0.1 acres of permanent fill in wetlands, 2) the amount of wetlands in the project area is presumably high (see Chapter 3.3.1, Wetlands Affected Environment), and 3) the amount of wetland fill from past, present, and RFFAs is relatively small, the project would not contribute significantly to cumulative impacts on wetlands.

Biological Resources:

Marine Mammals: The project would contribute to cumulative effects through an incremental increase in disturbance and displacement due to project noise and human activity and an incremental increase in potential mortality and injury associated with vessel strikes and oil spill risks. The project would temporarily increase vessel traffic and associated noise by a small amount during construction (cable-laying). This would occur during a time when vessel traffic in the Bering Sea is expected to continue to increase due to changing climate and access to the previously-ice-covered Chukchi and Beaufort Seas. Project vessel traffic in combination with increased shipping and vessel traffic could increase the likelihood of vessel strikes of marine species. However, mitigation measures such as avoiding major Steller Sea lion rookeries and

major haulouts and altering course and reducing speed when observing a marine mammal would minimize the potential impacts on marine mammals. Therefore, the project would not contribute significantly to cumulative effects on biological resources.

Fish: The Project would contribute to cumulative effects through an incremental increase in habitat alteration for fish (minor and temporary increase in turbidity, and disturbance of benthic sediments) and an incremental increase in potential mortality and injury associated with entrainment of small benthic species. Because the amount of benthic habitat alteration from past, present, and RFFAs is (or will be) relatively small, the project is unlikely to cumulatively result in substantial alteration of fish habitat.

5 SUMMARY OF MITIGATION

The following is a list of all environmental commitments and mitigation measures included in the proposed action.

1. General Commitments

- i. Clearing and grubbing will not be conducted within the migratory bird window of May 5 to July 25, except as permitted by federal, state, and local laws.
- ii. Contractor will make every effort to use local labor during construction.
- iii. Re-vegetation of disturbed areas will occur as soon as practicable with local and native species.
- iv. Should archaeological resources be discovered during the course of the project, work would be stopped in the area of the discovery until the resources have been evaluated in terms of the NRHP, in consultation with SHPO. Commitments specific to Cultural and Historic Resources are below.
- v. During construction, if contaminated soil, groundwater, or free phase petroleum product is encountered and determined to be associated with a known contaminated site, the construction contractor or other project representative shall contact the appropriate DEC staff to ensure that contamination in the corridor is managed and documented as deemed necessary.
- vi. If a suspected military munition is encountered, the FUDS safety guide (3Rs of Explosives Safety) will be followed (Appendix I).
 - i. The activity may not use unsuitable material (e.g., trash, debris, car bodies, asphalt). Material used for construction or discharge must be free from toxic pollutants in toxic amounts (see Clean Water Act, Section 307).
 - ii. The activity must comply with applicable Federal Emergency Management Agency-approved state or local floodplain management requirements.
 - iii. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
 - iv. A standard ESCP and SWPPP will outline appropriate soil erosion and sediment controls to be used and maintained in effective operating condition during construction. All exposed soil and other fills, as well as any work below the ordinary high water mark or HTL, will be permanently stabilized at the earliest practicable date. When possible, work within WOUS will be performed during periods of low flow or no flow, or during low tides.
 - v. Temporary fills will be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas will be revegetated, as appropriate. Proper seeding of all areas under threat of erosion or unstable soil post-project shall be seeded with appropriate grass seed such as Northern Tufted Hair Grass to maintain solid soil stability. Any areas of vegetation will be revegetated to the greater standard among the permit, SWPPP or Environmental Assessment standards.
 - vi. The activity is to be properly maintained to ensure public safety and compliance with NWP general conditions.
 - vii. The activity is to comply with the ESA and abide by NMFS mitigation measures.
 - viii. The permittee is responsible to ensure compliance with the MBTA and the Bald and Golden Eagle Protection Act.

- ix. If the activity discovers any previously unknown historic, cultural, or archeological remains and artifacts while accomplishing the activity authorized by this permit, permittee must immediately notify the district engineer of what has been found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
 - x. The activity is certified to comply with Section 401 of the CWA and the Alaska Water Quality Standards issued on March 1, 2017 by DEC, if the activity complies with NWP general and Alaska regional conditions.
 - xi. The permittee shall provide USACE a signed certification document upon completion of the authorized activity. USACE has provided the certification document with the NWP verification letter.
2. USACE NWP Regional Conditions
- i. Trenches may not be constructed or backfilled in such a manner as to drain Waters of the U.S. (e.g., backfilling with extensive gravel layers, creating a French drain effect). Ditch plugs or other methods shall be used to prevent this situation.
 - ii. All excess material shall be removed to a non-wetland location.
 - iii. The backfilled trench will achieve pre-construction elevation.
 - iv. Excavated material temporarily sidecast into wetlands will be underlain with geotextile, ice pads, or similar material, to allow for removal of the temporary material to the maximum extent practicable.
 - v. Where vegetation is removed, revegetation of the site will begin as soon as site conditions warrant.
 - vi. Disturbed areas will be stabilized immediately after construction.
 - vii. Except in areas of topsoil excavation, excavated soils will be sorted into mineral subsoils and topsoil (topsoil is defined as the upper, outermost layer of soil, usually the top 2 to 8 inches).
 - viii. Native vegetation and topsoil removed for project construction shall be stockpiled separately and used for site rehabilitation. Species to be used for seeding and planting shall follow this order of preference:
 - a. Species native to the site
 - b. Species native to the area
 - c. Species native to the state
 - ix. Prior to commencement of construction activities within wetland areas, the permitted limits of disturbance at the project site will be clearly identified with highly visible markers (e.g., staking, flagging).
3. Mitigation and Commitments Specific to NMFS and USFWS per the ESA:
- i. Vessel Operations
 - a. Project vessels will not enter 3 nautical miles (5.6 kilometer) range of major Steller sea lion rookeries or major haulouts.
 - b. Avoid sea otter critical habitat when possible.

- c. If a marine mammal is spotted within 1 mile of the vessel and vessel is not laying cable, vessels will slow to less than 5 knots. The lay will not exceed 4 kts and burial would be less than 1 kts.
 - d. If a marine mammal is observed, vessels will alter course and reduce speed to avoid disturbance and collision.
 - e. If a group of marine mammals or raft of sea otters is observed, vessels will avoid separating members from the group.
 - f. Operate vessel thrusters (main and dynamic positioning) at minimum power necessary to accomplish the work.
 - g. Lighting on vessels will be minimized and down shielded to avoid attracting avian species.
- ii. Monitoring
- a. Have two trained Protected Species Observers (PSOs) onboard the cable-laying vessel (ship or barge).
 - b. PSOs must watch for marine mammals and avian species during all daylight hours.
 - c. PSOs must not have any other duty on the vessel.
 - d. PSOs collect sighting information on species, environmental parameters, and vessel activities.
- iii. Mitigation Measures
- a. Prior to the start of cable-laying operations each day or if activities have been stopped for longer than 30 minutes, PSOs must “clear” the safety zone (this means no marine mammals have been observed within this zone for 30 minutes).
 - b. If marine mammals are observed within the safety zone, cable-laying must not start until:
 - 1) Mammal has visually observed to have left that zone
 - 2) Has not been seen within the zone for 15 minutes for seals, sea lions, sea otters, or harbor porpoises
 - 3) Has not been seen within the zone for 30 minutes for whales
- iv. Safety Zone Distances (on each side of the vessel)
- a. Cable-laying ship: 1.1 miles (1.8 kilometers)
 - b. Cable-laying barge: 1.7 miles (2.8 kilometers)
- v. Reporting
- a. Report any injured or dead marine mammals to NMFS and/or USFWS within 24 hours.
 - b. Send reports of marine mammal sightings to NMFS and USFWS monthly during the project.
 - c. Send a final report of marine mammal sightings to NMFS and USFWS within 90 days of completion of the project.
4. Mitigation and Commitments Specific to NMFS EFHA:
- i. Align crossings to avoid rock reefs and shoals to the extent possible.

- ii. Avoid construction of permanent access channels since they disrupt natural drainage patterns and destroy wetlands through excavation, filling, and bank erosion.
 - iii. Backfill excavated wetlands with either the same or comparable material capable of supporting similar wetland vegetation. Original marsh elevations will be restored, to the extent practicable. Topsoil and organic surface material such as root mats will be stockpiled separately and returned to the surface of the restored site. Adequate material will be used so that following settling and compaction of the material, the proper pre-project elevation is attained. If excavated materials are insufficient to accomplish this, similar grain size material will be used to restore the trench to the required elevation. After backfilling, erosion protection measures will be implemented where needed.
 - iv. Use existing ROW whenever possible to lessen overall encroachment and disturbance of wetlands.
 - v. Access for equipment will be limited to the immediate project area. Tracked vehicles are preferred over wheeled vehicles. Consideration will be given to the use of mats and boards to minimize impacts.
 - vi. Limit construction equipment to the minimum size necessary to complete the work. Shallow-draft equipment will be employed in shallow areas so as to minimize impacts and eliminate the necessity of temporary access channels.
 - vii. The cable trench or plow path will be opened for the shortest duration possible and backfilled as soon as work is complete.
 - viii. When possible, conduct construction during the time of year that will have the least impact on sensitive habitats and species (as determined by NMFS and/or ADF&G).
 - ix. Use horizontal directional drilling where cables would cross anadromous fish streams, salt marsh, vegetated intertidal zones, or steep erodible bluff areas adjacent to the intertidal zone.
 - x. Bury submerged cables where possible. Unburied pipelines or pipelines buried in areas where scouring or wave activity eventually exposes them run a much greater risk of damage leading to leaks or spills.
 - xi. Remove inactive submerged cables unless they are located in sensitive areas (e.g., marsh, reefs, seagrass). If pipelines are allowed to remain in place, ensure that they are properly pigged, purged, filled with seawater, and capped.
 - xii. Use silt curtains or other barriers to reduce turbidity and sedimentation near the project site whenever possible.
 - xiii. Locate alignments along routes that will minimize damage to marine and estuarine habitat. Avoid laying cable over high-relief bottom habitat and across live bottom habitats such as corals and sponges.
5. Mitigation and Commitments Specific to the Programmatic Agreement executed under Section 106 of NHPA
- i. Review of subsea sonar data collected for the project by a marine archaeologist to identify any potential submerged cultural resources. Unicom will reroute the marine fiber cable placement around any identified potential submerged cultural resources based on the marine archaeologists' review and will submit a report to RUS and SHPO for approval prior to initiating subsea fiber installation.

- ii. Post-execution commitment to ensure that all ground disturbing activities in the intertidal and terrestrial environments are monitored by an archaeologist under a formal cultural resource monitoring plan. However, Unicom may conduct detailed cultural resources inventory efforts within the communities to develop more refined project design plans and specific avoidance and minimizations that may reduce locations which require archaeological monitoring. Any such inventory efforts must be approved by RUS and SHPO prior to commencing, and the results must be provided to RUS and SHPO describing the resources identified (if any), and any project design changes that have been made to avoid or minimize potential adverse effects. These reports must be approved by RUS and SHPO prior to Unicom initiating construction within the community.

6 COORDINATION, CONSULTATION, AND CORRESPONDENCE

6.1 Stakeholder

Public outreach was conducted in King Cove, Unalaska, Sand Point, Akutan, and other nearby communities within the Project Area such as the Chignik Region to directly engage local stakeholders. Additional outreach efforts were conducted around Alaska to reach Native and other regional organizations.

6.1.1 Regional Organizations

The project was presented at multiple regional organization gatherings and meetings where stakeholder feedback was solicited.

- Presentations and consultation with the Southwest Alaska Municipal Conference (SWAMC) in 2017, 2018, 2019, 2020, and 2021. The SWAMC board of directors passed a resolution supporting increasing connectivity in the region and provided a letter of support for the project.
- Presentations, including project updates, to the “A Team” (a group of regional entities that includes: The Aleut Corporation, Aleutian Pribilof Islands Association, Eastern Aleutians Tribes, Aleutian Housing Authority, and the Aleutian Pribilof Island Community Development Association) were provided in 2017, 2019, and 2020.
- Presentations to the Alaska Native Village Corporation CEO Association (ANVCA) were provided at the annual convention and gathering in 2018 and 2019. ANVCA shared project information with their members via their newsletter and provided a letter of support for the project.
- The project was presented to the Alaska Federation of Natives at their annual convention in 2020, the largest annual gathering of Alaska Natives.
- Consultation with Alaska Tribes at the Bureau of Indian Affairs Providers Conference in 2018 and 2019.
- The project was presented to the Aleutian Village Conference (a gathering of Alaska Native Village and regional corporation shareholders and organization leaders) as part of the conference’s formal agenda.
- The project was presented to the Aleutian Pribilof Island Community Development Association conference, where Unicom shared project goals and took feedback from community leaders.
- Multiple conversations have been had and presentations made to the Aleutians East Borough starting in 2018. The project has been described in the Borough’s newsletter (2018) and multiple project updates have been included since (2019 and 2020). Individual meetings, presentations, and consultation with Borough leadership have occurred from 2017 through 2020.
- A community meeting was held with the City of Unalaska and presentations have been made during the public city council meetings in 2020. Additionally, GCI maintains a retail storefront in Unalaska and employees their interact with and provide information to community members on a daily basis.

- Letters were sent to all permitted fisherman in the area, regardless of mailing address (to include fisherman who may live in other communities or out of state). Fisherman consulted with GCI leadership (phone and email) were provided with pre-subscription forms. Announcement of the grant award and intention to construct were distributed in January 2021.
- Email announcements about the project were provided to members of the Alaska Seafood Processors Association.
- Local businesses for the project's six communities were notified by email in November 2020 that the project was moving forward and contact information for GCI was provided should there be any questions.
- Informational teleconference (November 2019) for public stakeholders and regional organizations to provide an overview of the project, current status, and anticipated schedule.
- Additional media outreach efforts included:
 - Project website
 - Social media announcements
 - Radio interviews given to KUCB (Unalaska) and KSDP (Sand Point)
 - Press release was sent to all community leaders and local media announcing the project and plan
 - Virtual press conference all community leaders, businesses, and members were invited to attend where the grant award was announced

6.1.2 Pre-Subscription Forms

Pre-subscription forms were sent to businesses and fishermen to gain an understanding of who might be interested in a high-speed broadband network if one was made available. Of the pre-subscription forms sent, 32 businesses and 78 individuals or commercial fishermen returned the form in support of the project..

6.1.3 Letters of Support

Additionally, there were 14 letters of support written by individuals and businesses from Sand Point, King Cove, Unalaska, and Akutan; an additional 10 letters of support provided by Chignik Intertribal Corporation, Ivanof Bay Tribe, Native Village of Perryville, and False Pass Tribal Council. One businesses owner in Chignik Lagoon stated, "with our depressed fisheries it is becoming apparent that the need to diversify and compete in regional, national, and international markets is of utmost importance. Our tribal members seek to engage in distance education to expand their education and interests and the existing internet is not capable of the current needs."

Among the letters of support provided to Unicom, there was a consensus that remote parts of Alaska rely on broadband to educate and keep residents healthy and access to broadband is necessary to the economic livelihood of the region. In the 22 letters of support, the following statements were expressed regarding the regions need for reliable, high speed broadband service and how that might impact the project's communities:

- A necessity for the communities to thrive

- Essential for telemedicine and distance-based learning
- Directly improving health
- Creating new opportunities for young people
- Sharing cultural heritage and values
- Promoting cultural understanding
- Necessary for economic development
- Business to remain competitive to be successful

6.2 Agency Scoping

Table 15 summarizes agency contacts.

Table 15: Summary of Agency Coordination Contacts

Entity	Regulatory Responsibility	Representative	Response	Correspondence
ACHP	Section 401 (Alaska certifies)	LaShavio Johnson	Request for more information	Letter included in Appendix J
DEC	Section 401 (Alaska certifies)	James Rypkema	None	None
DEC	Contaminated Sites	Shannon S. Dewandel	None	None
DEC	Section 401 (Alaska certifies)	Angela Hunt	None	None
DEC	Contaminated sites	Cascade Galasso-Irish	Detailed guidance on contaminated site risk	Email included in Appendix J
ADF&G	Fish habitat/ fisheries	Megan Marie	None	None
ADF&G	Fish habitat/ fisheries	Ronald C. Benkert	Project does not require Fish Habitat Permit; avoid interference with fisheries	Email included in Appendix J
ADF&G	Fish habitat/ fisheries	Kevin Schaberg	Asking to be contacted regarding fishery activities to avoid conflicts; timing of cable laying with commercial fisheries	Email included in Appendix J
Alaska Groundfish Data Bank	Fisheries	Julie Bonney	Coordination with route of subsea sonar survey	Email included in Appendix J
DNR	Land Use Permitting	Clifford A. Larson	Request for more information	Email included in Appendix J
DNR	Land Use Permitting	Michael Walton	None	None
Aleutians East Borough	N/A	Alvin Osterback	None	None
Aleutiq Museum	N/A	Molly Odell	Wants to be a consulting party	Email included in Appendix G
OHA	Cultural Resources	General mailbox	None	None
EPA	N/A	General mailbox	None	None
NMFS	Endangered Species Act	Judy Jacobs	Review of Biological Assessment and issue Letters of Concurrence	Email included in Appendix F
NMFS	Essential Fish Habitat	Matt Eagleton	Update conservation recommendations	Email included in AppendixE

Entity	Regulatory Responsibility	Representative	Response	Correspondence
NMFS	Essential Fish Habitat	Charlene Felkley	Conclusion of EFH consultation	Email included in Appendix E
NOAA	N/A	General mailbox	None	None
NOAA	Nautical Charts	John Whiddon	None	None
SHPO	Section 106	Judith Bittner	A project Programmatic Agreement is appropriate for the project	Letter included in Appendix G
SHPO	Section 106	McKenzie Johnson	Input on Programmatic Agreement	Email included in Appendix G
USFWS	Endangered Species Act – Marine Impacts	Kim Klein	Guidance on sea otters/incidental take	Email included in Appendix F
USFWS	Endangered Species Act – Marine Impacts	Jennifer Spegon	Review of Biological Assessment and issue Letters of Concurrence	Email included in Appendix F
USFWS	Endangered Species Act	General mailbox	None	None
USFWS	Alaska Maritime National Wildlife Refuge	Jeff Williams	Provided maps of areas to avoid	Email included in Appendix J
USFWS	Bald Eagles	Bob Henczey; Douglass Cooper	(None received)	Email included in Appendix J
USFWS	Endangered Species Act – Terrestrial Impacts	Douglass Cooper	Concurrence: project may affect but is not likely to affect ESA species	Email included in Appendix F
North Pacific Fishery Management Council (NPFMP)	Nautical Charts/Fishing Industry	General	None	Letter included in Appendix J
NMFS	Endangered Species Act – Humpback Whale Critical Habitat	Ann Erickson	Concurrence: project may affect but is not likely to affect ESA critical habitat	Letter included in Appendix F

Entity	Regulatory Responsibility	Representative	Response	Correspondence
NMFS	Marine Mammal Protection Act	Christopher Putnam	None	None
NMFS	Marine Mammal Protection Act	Greg Balough, Shane Guan	No IHA needed	Email included in Appendix F
USACE	Section 407 (Civil)	Michael G. Tencza	Although the project is near USACE civil works projects, the marine routes will not require a formal USACE Section 408 review. If the project scope, marine routes, or landfall locations change from the 'draft' final stage, the project must coordinate with USACE to verify this will not impact a USACE project and trigger a Section 408 review. Avoid any navigation features (e.g., ports, harbors, navigation channels) and shoreline protection features.	Email included in Appendix J
USACE	Section 404	Ben Soiseth	Permitting Project Manager (March – May 2021)	Included in Appendix B
USACE	Section 404	Andrew Grau	Permitting Project Manager (2020; May to present, 2021)	Included in Appendix B
USACE	FUDS	Rena Flint	Provided guidance on FUDS protocols in Unalaska	Email included in Appendix J
FCC	Cell Tower Permitting	Denise Coca, Gabrielle Kim	None	None
Tangirnaq Native Village	N/A	General mailbox	None	None
Native Village of Ouzinkie	N/A	General mailbox	None	None
Port Lions Tribe	N/A	General mailbox	None	None
Larsen Bay Tribe	N/A	General mailbox	None	None
Native Village of Karluk	N/A	General mailbox	None	None
Chignik Bay Tribal Council	N/A	Roderick Carlson	None	None
Chignik Lagoon Native Corporation	N/A	General mailbox	None	None
Native Village of Chignik Lagoon	N/A	General mailbox	None	None
Chignik Lake Village Council	N/A	General mailbox	None	None

Entity	Regulatory Responsibility	Representative	Response	Correspondence
Native Village of Perryville	N/A	General mailbox	None	None
Qagan Tayagungin Tribe	N/A	General mailbox	None	None
Native Village of Belkofski	N/A	General mailbox	None	None
Native Village of False Pass	N/A	General mailbox	None	None
Native Village of Akutan	N/A	General mailbox	None	None
Unalaska Tribe	N/A	General mailbox	None	None
Qawalangin Tribal Council	N/A	General mailbox	None	None
Qawalangin Tribe of Unalaska	N/A	Nicole Whittern	None	None
Native Village of Port Lions	N/A	General mailbox	None	None
Chignik Lagoon Village Council	N/A	General mailbox	None	None
Pauloff Harbor Council	N/A	General mailbox	None	None
Native Village of Unga	N/A	General mailbox	None	None
Agdaagux Tribe of King Cove	N/A	Etta Kuzakin	None	None

Note: ACHP (Advisory Council on Historic Preservation); ADF&G (Alaska Department of Fish and Game); DEC (Alaska Department of Environmental Conservation); DNR (Alaska Department of Natural Resources); FCC (Federal Communications Commission); N/A (not applicable); NMFS (National Marine Fisheries Service); NOAA (National Oceanic and Atmospheric Administration); OHA (Office of History and Archeology); SHPO (Alaska State Historic Preservation Office); USFWS (U.S. Fish and Wildlife Service).

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8 LIST OF PREPARERS

Table 16 lists the individuals who prepared this Environmental Assessment.

Table 16: Preparers of the AU Aleutian Environmental Assessment

Name	Agency	Role	Profession
Omololu Dawodu	U.S. Department of Agriculture, Rural Utility Service	Reviewer	Environmental Protection Specialist
Christine Allen	U.S. Department of Agriculture, Rural Utility Service	Reviewer	Senior Environmental Protection Specialist
Tim Stelzig	Unicom	Reviewer	Federal Regulatory Attorney
Bruce Rein	Unicom	Staff Engineer	Civil Engineer
Kristen Hansen	Consultant	Quality Control	Senior NEPA Practitioner
Jake Anders	Consultant	Contributing Author	Cultural Resources
Emily Creely	Consultant	Author	Environmental Specialist
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Tim Jameson	Consultant	Maps and figures	Geographic Information Systems Specialist