AU ALEUTIANS II

Environmental Assessment

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ACRONYMS AND ABBREVIATIONS

3R ..... Recognize, Retreat, and Report
AAC ..... Alaska Administrative Code
ADF&G ..... Alaska Department of Fish and game
AHRS ..... Alaska Heritage Resource Survey
AKEPIC ..... Alaska Exotic Plants Information Clearinghouse
ANVCA ..... Alaska Native Village Corporation CEO Association
APE ..... Area of Potential Effect
AS ..... Alaska Statute
AU ..... Alaska United
AU-A ..... AU Aleutians
BA ..... Biological Assessment
bgs ..... below ground surface
BMH ..... beach manhole
BMP ..... best management practice
CAA ..... Clean Air Act
CFR ..... Code of Federal Regulations
CLS ..... Cable Landing Station
CSMP ..... Contaminated Sites Management Plan
CWA ..... Clean Water Act
DEC ..... Alaska Department of Environmental Conservation
DMLW ..... Division of Mining, Land and Water
DNR ..... Alaska Department of Natural Resources
DOT&PF ..... Alaska Department of Transportation and Public Facilities
EA ..... Environmental Assessment
EFH ..... essential fish habitat
EFHA ..... essential fish habitat assessment
EJ ..... Environmental Justice
E.O. ..... Executive Order
EPA ..... U.S. Environmental Protection Agency
ESA ..... Endangered Species Act
FEMA ..... Federal Emergency Management Agency
FMP ..... Fishery Management Plan
FOC ..... fiber optic cable
FONSI ..... Finding of No Significant Impact
ft ..... foot/feet
ft^2 ..... square feet
FUDS ..... Formerly Used Defense Sites
Gbps ..... gigabytes per second
GCI ..... GCI Communication Corporation
HTL ..... high tide line
IC ..... Institutional Controls
IPaC ..... Information for Planning and Consultation
Kbps ..... kilobytes per second
Kw ..... kilowatt
LRA ..... land resource area
Mbps ..... megabits per second
MBTA ..... Migratory Bird Treaty Act
MHW ..... mean high water

MLW ..... mean low water
MMPA ..... Marine Mammal Protection Act
MSA ..... Magnuson-Stevens Fisheries Conservation and Management Act
NEPA ..... National Environmental Policy Act
nm ..... nautical mile(s)
NMFS ..... National Marine Fisheries Service
NOAA ..... National Oceanic and Atmospheric Administration
NRHP ..... National Register of Historic Places
NTIA ..... National Telecommunications and Information Administration
NVPL ..... Native Village of Port Lions
NWI ..... National Wetlands Inventory
NWP ..... Nationwide Permit
OHA ..... Office of History and Archaeology
PA ..... Programmatic Agreement
PSO ..... Protected Species Observer
PUE ..... Public Utility Easement
RD ..... Rural Development
RFFA ..... reasonably foreseeable future action
ROV ..... remotely operated vehicle
ROW ..... right(s)-of-way
RUS ..... Rural Utilities Service
SHPO ..... Alaska State Historic Preservation Office
SOA ..... State of Alaska
SWAMC ..... Southeast Alaska Municipal Conference
SWPPP ..... Stormwater Pollution Prevention Plan
TBCP ..... Tribal Broadband Connectivity Program
Unicom ..... Unicom, Inc.
USACE ..... U.S. Army Corps of Engineers
USDA ..... U.S. Department of Agriculture
USFWS ..... U.S. Fish and Wildlife Service
WOTUS ..... Waters of the U.S.

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1 INTRODUCTION

In 2021, with support from the US Department of Agriculture (USDA) Rural Development (RD), Unicom, Inc. (Unicom), a wholly owned subsidiary of GCI Communications Corp. (GCI), installed a nearly 800-mile subsea fiber optic cable (FOC) to extend broadband service to six remote communities for the AU-Aleutians (AU-A) fiber project.

The Native Village of Port Lions (NVPL), with support from the National Telecommunications and Information Administration (NTIA) Tribal Broadband Connectivity Program (TBCP), proposes to construct new FOC that connects to the AU-A project to bring high-speed internet service to approximately 800 people in six remote Alaska Native villages for the first time. As the Proposed Action, the AU-Aleutians II Fiber Project (AU-A II) builds on the AU-A project, however new FOC will create additional service areas in communities that are entirely distinct from AU-A. Additionally, NTIA funding will not be used to enhance or improve the AU-A project or communities it serves.

As the NTIA grant recipient, NVPL partnered with GCI as a subrecipient to design, construct and maintain the Proposed Action, with Unicom responsible for permitting, oversight of regulatory commitments and management of subcontractors.

The AU-A project is currently in the process of connecting Larsen Bay, Chignik Bay, Sand Point, King Cove, Akutan, and Unalaska. The Proposed Action proposes to connect the communities of Port Lions, Ouzinkie, Chignik Lagoon, Chignik Lake, Cold Bay, and False Pass. Figure 1 (Appendix A) shows the extent of the AU-A and AU-A II projects.

The communities proposed to be serviced by the Proposed Action currently lack terrestrial FOC broadband service. The current lack of access to adequate broadband service limits economic development and efficiency of services provided by healthcare providers, schools, tribal entities, businesses, and residents. Most communities are currently connected via satellite. While satellite service remains an important technology in rural Alaska, it is expensive and cannot provide the optimal bandwidth needed to support the current internet speeds required as part of doing business in the fast-paced global economy. Low latency and high-capacity broadband service provided through FOC is required to support the innovation and economic growth that will help make rural American communities viable into the future.

With support from the TBCP, the Project will deliver internet service through deploying approximately 100 miles of FOC to build a distribution network in each community that will provide broadband service via fiber-to-the-premise delivery and provide local access networks for the following six communities:

1. Ouzinkie (Kodiak Island Borough)
2. Port Lions (Kodiak Island Borough)
3. Chignik Lagoon (Lake and Peninsula Borough)
4. Chignik Lake (Lake and Peninsula Borough)
5. Cold Bay (Aleutians East Borough)
6. False Pass (Aleutians East Borough)

1.1 Summary of Project Description

The project would install new subsea FOC to connect six communities to the existing AU-A project. To reach the communities, subsea branching units connecting from the existing fiber "backbone" would be placed to reach Ouzinkie, Port Lions, and False Pass. New subsea FOC would be placed from AU-A communities to reach Chignik Lagoon, Chignik Lake, and Cold Bay. Basic Project activities include the following (see Section 2.1 for a more detailed description):

- Terrestrial FOC (trenched)
    - Trenches would be 3 feet (ft) or less below ground surface (bgs) and 3 ft wide. Sidecast width would not exceed 8 ft. Placement would generally occur within existing road rights-of-way (ROW) and/or existing disturbance when feasible.
- Intertidal FOC (trenched)
    - Trenches would be 3 ft or less below mudline and 3 ft wide. Sidecast width would not exceed 8 ft.
- Subsea FOC (lay)
    - Installation by laying cable directly on seabed.
- Subsea and Riverine FOC (burial)
    - Limited areas of burial could occur in all locations within no more than 980 ft from mean low water (MLW) in the surf zone and in the Chignik River. Burial would be no deeper than 3 ft below existing substrate with no resulting sidecast.
- Beach manhole (terrestrial/intertidal)
    - At each community, the landing of the subsea FOC would be connected to beach manholes (BMH) just above the high tide line (HTL) no more than 5 ft.
- Vaults (terrestrial)
    - On average, vaults will be installed every 800 ft of FOC, placed at a depth of no more than 5 ft bgs.
- Prefabricated communications shelter located at Cable Landing Stations (CLS) on small gravel pads
    - Placement of six prefabricated shelters (approximately 24 ft long, 12 ft wide, and 10 ft high) housed on 2,500-square foot (ft^2) gravel pads.

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

1.2 Purpose and Need

The purpose of the proposed project is to bring fast, 2,500 megabits per second (Mbps) (approximately 2.4 gigs) internet speeds and affordable, unlimited data plans to six rural Alaska Native villages for the first time, closing the digital divide and bringing digital equity to the region. The project will support economic development and expansion of social services. The proposed project's six isolated communities are neither connected by road nor an intertied electrical grid.

The lack of broadband access limits economic development and efficiency of services delivered by healthcare providers, schools, and tribal entities.

1.3 AU-A/Tiering

The AU-A project was evaluated under the National Environmental Policy Act (NEPA) process by USDA RD through an Environmental Assessment (EA) in 2021. A Finding of No Significant Impact (FONSI) was signed in August 2021 (Appendix B). Although NTIA is the lead federal agency for the Proposed Action and RUS was the lead federal agency for AU-A, NTIA is evaluating the Proposed Action by tiering off of the AU-A EA for the following reasons:

- Similar But Distinct Geographic Extent:
    - The AU-A project extended a backbone FOC across a large region along southwest Alaska and the Aleutian Islands chain. The Proposed Action will serve communities along this backbone that were not connected by AU-A by extending branches off the backbone.
    - The Proposed Action **project route does not duplicate, in part or in whole, or geographically overlap with AU-A**, but both projects occur in the same general region with similar environmental conditions and serve similarly small, isolated communities - populations less than 500 people and accessible only by boat or aircraft, along the Aleutian Islands chain.
    - The proposed methods of installation for both projects are nearly identical. Both projects consist of nearly identical proposed construction methods, materials, and disturbance dimensions.
- Tiered Consultations for Protected Species and Cultural Resources
    - The two resource categories that require the most analysis for both AU-A and Proposed Action are cultural resources (per Section 106 of the National Historic Preservation Act) and protected species (per Section 7 of the Endangered Species Act and Marine Mammal Protection Act)
        - The AU-A project complied with the requirements of Section 106 through a Programmatic Agreement (PA), which allowed for a phased process to identify, evaluate, assess, and avoid, minimize, and/or mitigate project effects on historic properties. The PA allows for and outlines a process to include additional projects through an amendment process and the Proposed Action was added through this process. Information amended to the PA includes a discussion of the Proposed Action, results of cultural resources desktop analysis for new areas, including archaeological site cards, document repository, and determinations of eligibility.
        - Consultation for protected species for the Proposed Action will not be new but re-initiated by partially relying on previous biological assessments and findings of no adverse effect. Updated biological assessments have been developed to account for additional geographic areas not previously evaluated and any potential changes in findings between projects.

Due to these similarities, analysis of effects included in AU-A can serve as a foundation for the analysis of the Proposed Action.

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2 ALTERNATIVES EVALUATED INCLUDING THE PROPOSED ACTION

Various alternatives were considered and analyzed during project development, as described below. Route selection for both terrestrial and marine FOC was primarily based on using the most direct route along existing road infrastructure and avoiding cultural resources, restrictive land ownership, and subsea obstructions. Input from community outreach efforts with regional organizations, tribal and Alaska Native organizations, city governments, and local business groups, including fisheries, provided specific information to inform route selection. Additionally, trenching locations within communities were selected to take advantage of existing ROW and existing disturbance to the highest degree possible.

2.1 Other Alternatives Evaluated

2.1.1 Alternatives Considered but Dismissed

The AU-A EA evaluated several alternatives to using FOC to meet the project purpose and need, which are wholly applicable to the Proposed Action. The alternatives evaluated in the AU-A EA for their ability to meet the project's purpose and need and for economic, logistical, and technological feasibility are described in Table 2 and summarized below. A more detailed explanation of each alternative is included in Appendix B.

Table 2: Alternatives Considered but Dismissed

Alternative	Reason Alternative Was Dismissed
Terrestrial-Only Routed Fiber Optic Cable	The burial of terrestrial FOC 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 Proposed Action

Project elements that would occur above the HTL are defined herein as *terrestrial* and project elements that would occur between MLW and HTL are defined as *intertidal*. Work below MLW is considered *subsea.* Work in the Chignik River is *riverine*.

2.2.1 Terrestrial Project Elements

- The shore route would consist of a buried conduit system and FOC to the BMH. The conduit system would contain up to 3 conduits (each 2 inches in diameter) buried 3-ft bgs. The BMH would measure 4 ft x 5 ft with 5-ft x 6-ft (30 ft^2) excavation.
- In all communities except Chignik Lake, the FOC would be routed from the BMH to new CLS facilities, wherein new prefabricated communications shelters would be placed on piles or be co-located with existing facilities. Gravel pads would have an area of approximately 2,500 ft^2 and be 2-ft deep. Each CLS would have a self-contained, outdoor-rated, and diesel-fuel powered generators installed adjacent to it on the gravel pad and be fenced.
- From the CLS, FOC will then be used to create a main line, from which end users would be connected. FOC between the BMH and CLS would be terrestrial cable placed in a trench, approximately 3 ft wide x 3 ft deep. 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 3-ft-deep trench. If existing suitable utility poles are available, the FOC local distribution may use overhead construction as well.
- Vaults would be similar to BMHs but measure 3 ft x 4 ft, only 3 ft deep, would require no more than a 5-ft x 5-ft (25 ft^2) excavation and would be used to provide slack loops and splicing points along the main line route and at the CLS.
- All terrestrial FOC 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. FOC trenching would generally follow the utility distribution system in each community.
- Installation crews would use backhoes and standard trenching techniques to set BMHs and vaults flush with the original ground grade.
- 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 sidecast next to trenches during excavation and the spoils would be used as backfill to bury the cable and BMH.
- FOC would be installed into a BMH, setback from the adjacent waterbody with a conduit stub. The BMH would measure 4 ft x 5 ft (20 ft^2) and 4 ft deep with excavation not exceeding 5 ft x 6 ft (30 ft^2) and 5 ft deep; each BMH excavation would vary based on shoreline/bank contours and substrate. The conduit stub would be placed above MLW.

2.2.2 Intertidal Project Elements

In intertidal areas, trenching would have a maximum 3 ft width and 4 ft depth.

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

- Any work below mean high water (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., Ouzinkie, False Pass).
- 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).

In general, equipment used at each landfall location (with the exception of work in the Chignik River) may include:

- Rubber-wheeled backhoe
- Tracked excavator or backhoe
- 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

2.2.3 Subsea and Riverine Project Elements

The following describes project elements that would occur in the subsea (marine) and riverine environments, outside of intertidal areas. Over 99 percent of the FOC would be surface-laid directly on the seafloor. In waters within approximately 980 ft from MLW, the FOC would be buried via diver-held water jet (maximum 3 ft depth).

For work in the Chignik River, installation would not occur when water is not present in the channel and instead would occur in high-water to the extent possible.

No post-lay inspection and burial would be conducted. In general, equipment in the nearshore marine and riverine environment may include:

- Small utility boats (both an 80- and 40-ft landing craft) to run pull line to beach (each less than 3,000 horsepower engine)
- Dive boat with hand jetting tools
- Hand jetting would take 1 day (12 hours) per landing

2.2.4 Installation Timeframes

Marine and intertidal installation of FOC and placement of BMHs in all locations except Chignik Lagoon and Chignik Lake, which is estimated to take no more than three months. Installation in is estimated to take no more than two weeks. Terrestrial FOC installation for Ouzinkie and Port

Lions is estimated to take no more than three months. Terrestrial FOC installation for Chignik Lagoon, Chignik Lake, Cold Bay and False Pass would take no more than three months.

2.2.5 Community-Specific Operations

Figure Set 2 and Figure Set 3 (Appendix A) show the dimensions of FOC and other project elements within each community (Table 1).

Table 1: Project Elements by Community

Community	Number of Vaults	Number of BMHs	CLS	Fiber placed between BMH end users (linear feet)[a]
Ouzinkie	96	1	yes	18,277
Port Lions	113	1	yes	32,751
Chignik Lagoon	70	2	yes	16,354
Chignik Lake	55	1	no	27,202
Cold Bay	82	1	yes	28,253
False Pass	55	1	yes	18,741
Total	**518**	**7**	**N/A**	**141,579**

Notes: BMH (beach manhole); current/approximate estimate and final linear feet may vary

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 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).

Resource categories described in this chapter are tiered from AU-A EA which was prepared in accordance with guidelines outlined in 7 Code of Federal Regulations (CFR) Part 1970. Although the affected environment for the Proposed Action differs slightly from AU-A since the specific project areas are adjacent but do not overlap, the type of project effects for the Proposed Action do not vary from AU-A EA. When appropriate, specific reference to analysis in the AU-A EA will be provided.

Table 3 summarizes the findings of this chapter.

Table 3: Comparison of Effects from Proposed Action Alternatives

Affected Resource Category	Proposed Action	No Action Alternative
Land Use	No effect	No effect
Soils and Geology	No Effect	No effect
Floodplains	No effect	No effect
Wetlands and Waters of the U.S.	Minor effect	No effect
Water Resources	No effect	No effect
Coastal Resources	No effect	No effect
Farmland	No effect	No effect
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 and temporary effect	No effect
Socioeconomic Issues/ Environmental Justice	Beneficial effect	Negative effect
Miscellaneous Issues (Noise, Transportation)	Minor and temporary effect	No effect
Human Health and Safety	Beneficial effect	Negative 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), 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, aircraft, foot, and off-road vehicle traffic. RFFAs in the Project area are described in Chapter 4, Cumulative Effects.

The following resource categories are not evaluated in this EA as they are not applicable for reasons explained the AU-A EA (Appendix B).

- 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.

3.1 Land Use

3.1.1 Affected Environment

Land Ownership

Land ownership was determined using publicly available information to identify parcel boundaries, legal descriptions, and determine ownership to support development of easements and ROW required for installation of FOC. Three primary databases were used to conduct this research:

- The Bureau of Land Management (BLM) provides a Spatial Data Management System specifically for Alaska which includes an interactive map that identifies those lands that remain in federal ownership and the initial owners and entities to which lands have been conveyed. (BLM 2023)

- The State of Alaska Department of Natural Resources (DNR) maintains an online mapping tool (Alaska Mapper) for query, research, and verification of state land ownership and state permitted land uses on state lands (DNR 2023[a]).

- The DNR Recorders Office maintains online records of all recorded plats, subdivisions, and conveyance documents once lands have entered the public domain after being conveyed from BLM (DNR 2023[b]).

The project is sited on non-federal land and includes private property, municipal property, and land owned or managed by the State of Alaska (SOA) Department of Natural Resources (DNR) and SOA Department of Transportation and Public Facilities (DOT&PF). Subsea project elements outside of DNR limits (3 miles from shoreline) are regulated by the Bureau of Ocean Energy Management, which does not require permits for subsea cable-laying operations in federal waters.

Zoning and Land Use Plan Compatibility

Land management in each project community was determined from two primary sources:

- Existing Land Use Plans:
    - Ouzinkie: 2018 Multi-Jurisdictional Hazard Mitigation Plan Update (Kodiak Island Borough 2018)
    - Port Lions: 1997 Comprehensive Development Plan and 2003 Comprehensive Community Plan (City of Port Lions 1997; City of Port Lions, 2003)
    - Chignik Lagoon: 2019 Tribal Hazard Mitigation Plan and 2016 Community Development Strategic Plan (Native Village of Chignik Lagoon 2019; Chignik Lagoon Village Council 2016).
    - Chignik Lake: 2019 Tribal Hazard Mitigation Plan (Chignik Lake Traditional Council 2019)
    - Cold Bay: 2022 Local Hazard Mitigation Plan (City of Cold Bay 2022)
    - False Pass: 2021 Multi-Jurisdictional Hazard Mitigation Plan Update (Aleutians East Borough 2021)
- Zoning codes from the following the Kodiak Island Borough, Lake and Peninsula Borough and Aleutians East Borough were reviewed to determine if any policies or entitlements exist that would apply to project development.

- Borough and City Officials: To confirm that none of the project actions would either require a land use permit to address zoning or local administrative restrictions, officials were directly contacted.

3.1.2 Environmental Consequences

3.1.2.1 Proposed Action

The Proposed Action would have no significant effect on land use because the project would be compatible with all applicable land use plans and policies of state and local governments. No zoning or entitlements apply to the project; no land use permits are required by state or local entities.

The proposed action would be constructed in existing and proposed easements between property parcels or within ROW to the extent possible. A DNR Public Utility Easement (PUE) application process (Division of Mining, Land and Water [DMLW] Alaska Statute [AS] 38.05.850) was completed in 2020 for AU-A resulting in an entry authorization for the branching units connecting to Chignik Lake and Chignik Lagoon, Cold Bay, and False Pass (ADL #233422). DOWL has submitted an extension application and modification request to DNR to add the Ouzinkie and Port Lions branching units to the PUE and anticipate an updated entry authorization by March 2024.

All other necessary ROW, leases, and easement authorizations are either completed or in the process of being obtained from a variety of entities, as listed in Table 4.

Table 4: Status of Land Use and Ownership

Land Ownership Type	Landowners	Approval Process	Status
State	Department of Natural Resources (subsea)	Public Utility Easement	Modification to existing PUE Submitted; Anticipated March 2024
State	Department of Transportation and Public Facilities (terrestrial)	Public Utility Easement	Request in Progress
Borough	Kodiak Island Borough	Easement	Request in Progress
Tribal Entities (terrestrial)	Native Village of Port Lions, Village of Chignik Lagoon, Chignik Lagoon Village Council. Chignik Lagoon Native Corporation, Bristol Bay Native Corporation	Land Entry Permit (pre-construction); easement (post-construction)	Request in Progress
Other (terrestrial)	Multiple private owners, Lake & Peninsula Borough School District, Peter Pan Seafoods Inc.	Land Entry Permit (pre-construction); easement (post-construction)	Request in Progress
Municipal (all communities)	City of Ouzinkie, City of Port Lions	Easement/ROW/leases	Request in Progress

PUE = Public Utility Easement; ROW = right-of-way

3.1.2.2 No Action Alternative

The no action alternative would have no effect on land use because it would not install FOC or associated structures.

3.2 Soils and Geology

3.2.1 Affected Environment

The Proposed Action is located within two physiographic regions: Ouzinkie and Port Lions within Kodiak Mountains; and Chignik Lagoon, Chignik Lake, Cold Bay, and False Pass in the Aleutian Range (Wahrhaftig, 1965).

Ouzinkie and Port Lions are situated in a landscape subjected to early glaciations and reflected characterized by rugged terrain with hilly lowlands and broad valleys in the undulating topography (Wahrhaftig, 1965). Soil cover is generally very thin along ridges and knobs and deeper along drainages and low-lying areas. In 1912, Katmai Volcano erupted (approximately 95 miles from Ouzinkie and Port Lions) covering the area in volcanic ash Katmai Volcano in 1912 (Pewe, 1975). Rock bedding is nearly vertical and generally consists of alternating strata of greywacke and slate of varying thicknesses with frequent layers of silty gravel or weathered rock before the more competent rock is encountered.

Most of the soils on Kodiak Island originated from weathered slate, greywacke, and glacial till. Underlying the vegetated surface is volcanic ash ranging in thickness from 9 to 12 inches before a layer of organic rich silty loam is encountered. This transitions into a gravelly silty loam at about 11 to 20 inches below the ground surface before underlying rock is encountered. The uplands of

the Kodiak Series located in the project area range from 7 to 80 percent slope (U.S. Department of Transportation 2019).

Chignik Lagoon, Chignik Lake, Cold Bay, and False Pass are situated within a region at the southern extent of the Alaska Peninsula with rounded mountains and peaks ranging up to 8,500 feet in elevation. The region's heavy glaciation is evidenced by its U-shaped valleys, cirques, and the presence of moraine held lakes. This region is also characterized by the abundance of active volcanoes which have reached peak uplift since the subsidence of the last glacial period. Common lowland features and stratigraphy for the Chignik Lake and Chignik include colluvial and alluvial deposits with a similar ash layer to the Kodiak Mountains from the 1912 Mount Katmai and Novarupta eruptions (Pewe, 1975). For False Pass and Cold Bay, volcanic activity was dominant rather than pre-modern glacial deposits. Lowland soils are generally unconsolidated and range from well sorted and well-stratified to poorly sorted and poorly stratified. Deposits include alluvial, colluvial, marine, lacustrine, eolian, and swamp deposits (USGS, 2024).

Chignik Lake soils generally of consist volcanic ash and silt loams, with deep groundwater (approximately 10-20 feet bgs) (Rozak, 1992). Subsurface conditions in Cold Bay are characterized by several hundred feet of outwash and morainal deposits and gravels mantled by silt and peat; no permafrost is known to exist in the general vicinity (DOWL HKM 2012). Subsurface investigations to the east of the runway describe areas underlying existing fill contain loose, silty sand with organic material extending up to 10 feet below the existing grade. Below this layer is generally silty sand; groundwater was not encountered. False Pass is generally located on a lowland, underlain by outwash and morainal deposits that are grade to fine sand without permafrost (DOT&PF 2008).

The USDA Web Soil Survey mapper contains no soils data for the Proposed Action area.

3.2.2 Environmental Consequences

3.2.2.1 Proposed Action

Although placement of FOC requires trenching, effects will be temporary as in-situ soil will be replaced into the trenches quickly after excavation. Impacts would be minor and temporary and include soil compaction which, depending on the localized area could alter existing runoff patterns. However, this would be anticipated to be highly dependent on if the trenching occurs within existing disturbance (e.g., gravel pads and roads) or within densely vegetated areas. Material needed to construct CLS would be minimal and sourced locally.

3.2.2.2 No Action Alternative

The no action alternative would have no effect on soils or geology because no gravel would be needed and no trenching would occur.

3.3 Coastal Resources

3.3.1 Affected Environment

The Proposed Action includes work in intertidal and marine areas, which are coastal natural resources. With the exception of FOC placement for Chignik Lagoon and Chignik Lake, no estuarine areas are being crossed by FOC as the landing areas all occur in relatively deep water and away from river mouths. The Chignik Lake and Chignik Lagoon landing traverse the mouth

of the Chignik River which empties into Chignik Lagoon, which is highly tidally influenced, resulting in the exposure of large mudflats at low tide which are very productive for clams and recreational access (Chignik Lagoon Village Council 2016).

Photos of each landing site are shown below

Ouzinkie Landing Site

Port Lions Landing Site

Chignik Lagoon Landing Site

Chignik Lake Landing Site

Cold Bay Landing Site

False Pass Landing Site

In the regulatory setting, coastal resources are managed under the Coastal Zone Management Act of 1970 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. As of July 1, 2011, Alaska withdrew from the voluntary National Coastal Zone Management Program, therefore regulating costal zones no longer occurs in Alaska. Additionally, 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,” of which none are in the Proposed Action area.

3.3.2 Environmental Consequences

3.3.2.1 Proposed Action

The Proposed Action would place FOC within tidally influenced coastal areas in Chignik Lagoon and within tidally influenced riverine habitat for the landing at Chignik Lake. All work within intertidal coastal areas would result in temporary effects as FOC trenching is backfilled quickly once FOC is placed. The size of the trench is minor when compared with the size of the habitat (no more than three feet in width). Additionally, best management practices will be used, including placement of heavy equipment on mats and conducting work during low tides. Descriptions of resources found within coastal areas are discussed in other areas of this EA, including Section 3.7.1 which describes the potential effects from the Proposed Action on Anadromous habitat and Essential Fish Habitat, Section 3.2 which describes potential effects from the Proposed Action on floodplains, and Section 3.3 which describes potential effects from the Proposed Action on wetlands.

3.3.2.2 No Action Alternative

The no action alternative would not impact coastal resources because no FOC would be installed.

3.4 Floodplains

Floodplains generally encompass lowlands which adjoin the channel of a river, stream, or watercourse, or ocean, lake, or other body of standing water, which have been or may be inundated by flood water (USACE 2024). Floodplains are important physical features that may affect structures within their extent and can be affected by construction activities.

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 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.

Additionally, E.O. 14030, Climate-Related Financial Risk, which affirms the Federal Flood Risk Management Standard which was created in E.O. 13690 to “improve the resilience of communities and federal assets against the impacts of flooding” in an effort to manage current and future flood risks in order to build a more resilient nation.

This section follows analysis methods used in the AU-A EA (Appendix B).

3.4.1 Affected Environment

With the exception of Ouzinkie and Port Lions, each of the communities in the Proposed Action are located on along coastlines in mountainous landscapes with a relatively small distance to large mountains and volcanoes that reach up to 8,500 feet in elevation. Ouzinkie and Port Lions are situated on the coast of a large island, where neighboring mountains are under 2,000 feet in elevation. None of the communities are situated near any river with a history of significant flooding.

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 (FEMA) has not mapped floodplain hazards for communities within the Proposed Action area; therefore, accurate base flood elevations have not been established in the project area.

All available information about each site's flooding history and conditions is summarized below.

- Ouzinkie: Major damage from flooding of rivers or streams, flash flooding, or stormwater drainage flooding has not been documented in Ouzinkie. The primary flood hazard is coastal flooding from seasonal storm surges (Kodiak Island Borough 2018)
- Port Lions: Long- and short-term coastal flooding has occurred due to land subsidence and seismic sea waves. Seasonal severe wind and extreme high tides cause storm surge that crests Kizhuyak Drive (City of Port Lions 2003).
- Chignik Lagoon: Packers Creek flows through the middle of the community as a low gradient waterbody but originates just two miles away from the runoff of a 1,500-ft high mountain. During heavy rainfall and/or snowmelt, it will have increased water levels will flood adjacent areas. Additionally, coastal storm surges in the fall can flood property and homes along the lagoon shorelines. Critical infrastructure has been impacted by flooding depending on snowmelt patterns and timing (Native Village of Chignik Lagoon 2019). No floodplains have been delineated for Packers Creek.
- Chignik Lake: Chignik Lake experienced three flooding events in 2002, 2007 and 2016; all in the fall and the result of heavy rains, strong winds and partially frozen ground, with flooding occurring everywhere in the community. The events were not the result of high water along the Chignik River (Chignik Lake Traditional Council 2019). No floodplains have been delineated for either Chignik Lake or the local creek.
- Cold Bay: The community of Cold Bay is located approximately 100 feet above its coastal areas on a bluff. In November 2000, heavy rains and strong winds resulted in small streams flooding their banks, but no floodplains have been delineated for any local creek. (City of Cold Bay 2022).
- False Pass: The community is located on an alluvial fan with Roundtop Creek draining the nearby mountain before entering into the ocean. Roundtop Creek passes beneath the airport access road between the runway and community and although it floods annually during snowmelt, it has not affected the community (DOT&PF 2008). Flooding occurred in False Pass in 1963, 1984 and 1985 due to the 100-year discharge of Roundtop Creek but only the airport was affected (Aleutians East Borough 2021). False Pass has experienced flooding in the Mountain Valley subdivision and by the airport, with Round Top Creek flooding private land and eroding foundations, the carpenter's shop, and Peter Pan Seafoods warehouse. Flooding occurs in the Mountain Valley subdivision a few times each year according to residents (Aleutians East Borough 2021).

3.4.2 Environmental Consequences

3.4.2.1 Proposed Action

With the exception of the CLS, the project would consist primarily of buried components, which may traverse marine, riverine, and intertidal areas that would have associated floodplains. However, because buried project components do not extend above the ground surface, potential

impacts to floodplains would only occur where CLS are constructed (per Part 1970.256). Trenched components are at a depth that should both sufficiently protect FOC from any flood-related erosion and also not affect the integrity of any un-mapped floodplains.

Due to the lack of base-flood elevations, the only tool available to assess potential floodplain impacts to and from above-ground elements (CLS) is to determine the distance between existing facilities where CLS are to be placed and the nearest waterbody, in relation to known flooding. Table 5 lists CLS relative to nearby waterbodies.

Table 5: CLS Location and Distance to Waterbodies

Community	Distance to Nearest Waterbody		Waterbody	CLS in likely floodplain or flood-prone area?
	Horizontal (ft)	Vertical (ft)		
Ouzinkie	250	21	Narrow Strait	No
Port Lions	800	132	Settler Cove	No
Chignik Lagoon	280	13	Chignik Lagoon	No
Chignik Lagoon	300	10	Packers Creek	No
Cold Bay	1500	70	Cold Bay	No
False Pass	1560	40	Isanotski Strait	No
False Pass	960	10	Roundtop Creek	No

Note: No CLS is planned for Chignik Lake.

The proposed action would have no significant effect to floodplains as the Proposed Action would not result in the modification of existing structures and would not install new facilities within any mapped or unmapped 100-year floodplain.

3.4.2.2 No Action Alternative

The No Action Alternative would have no effect on floodplains nor be affected by floodplains because there would be no installation of FOC or construction of associated structures.

3.5 Wetlands and Waters of the U.S.

The USACE is the jurisdictional agency with authority to permit the discharge of dredged or fill material into Waters of the United States (WOTUS) per Section 404 of the Clean Water Act (CWA). The USACE defines wetlands as areas that are “inundated or saturated by surface or groundwater 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)).

Outlined within the CWA and through recent U.S. Supreme Court adjudication (Sackett v. Environmental Protection Agency) of the “Clean Water Rule,” wetlands are categorized as “Other WOTUS,” and if wetlands have a surface water connection to a traditionally navigable water, or tributary thereof. USACE has yet to provide agency-specific guidance for interpreting what constitutes a surface water connection. In the absence of an official USACE guidance document, for the purposes of this project, it is assumed that any undisturbed, vegetated areas above MHW

within the Proposed Project footprint are assumed to constitute a wetland and it is further assumed that these areas are also under the jurisdiction of the CWA.

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.

3.5.1 Affected Environment

United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data is available within the project area for Ouzinkie and Port Lions, but not Chignik Lagoon, Chignik Lake, Cold Bay, or False Pass. The scale of NWI mapping in Alaska is 1:63:360 and is intended to be used planning and management as indications of where wetlands likely exist and are generally not intended to have the same accuracy as ground-based delineations. NWI mapping in the Lower 48 is accurate at a scale of 1:12,000 (National Association of Wetland Managers 2024).

NWI-mapped wetlands in Ouzinkie and Port Lions were mapped using high-altitude color infrared imagery from 1978 and due to the year of aerial imagery and scale, NWI mapping likely does not accurately show the extent of likely wetlands (USFWS 2023a; USFWS 2024). Without field verification, wetlands are assumed to be present in all undisturbed, vegetated areas above MHW. Due to the lack of development throughout Alaska and the prevalence of undisturbed wetlands statewide and lack of plant species listed under Section 7 of the Endangered Species Act in the project area, there is no indication that vegetation in the Proposed Action project area is unique or uncommon in the region (University of Alaska 2018). 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.

3.5.2 Environmental Consequences

3.5.2.1 Proposed Action

The project would involve work in aquatic resources and impact WOTUS under USACE jurisdiction per Section 10 of the Rivers and Harbors Act and Section 404 of the CWA. WOTUS potentially impacted by the proposed project would include tidelands, wetlands, and navigable waters. Any trenching work conducted would result in temporary impacts to jurisdictional resources because trenches would be covered over. All permanent fill (e.g., BMH, CLS, vaults) would result in minor permanent impacts to jurisdictional resources, as described in greater detail below. Complete avoidance of impacts to WOTUS is not feasible due to the extensive presence of such resources in the project area; however, potential impacts have been minimized by siting project features in developed/disturbed areas to the greatest extent practicable.

The project is being constructed to meet Nationwide Permit (NWP) conditions and would have minimal impacts to wetlands and aquatic environments as total permanent impacts would not exceed one half an acre per community. Additionally, wetlands will be avoided to the extent practicable through substitution trenching with placing FOC between existing poles when possible. Although CLS will not exceed 2,500 square feet of fill, the size of pad required for each site will vary depending on topography, existing disturbance, and therefore some sites may only require minor amounts of fill.

Authorization for fill in wetlands would be obtained per Section 404 of the CWA. Permanent and temporary impacts would be permitted under NWP 57 (Electric Utility Line and Telecommunications Activities). No compensatory mitigation is proposed and none would be required, as the nature of the activities would not result in an appreciable loss of functions in the respective watersheds.

As each branching unit and community meet the definition of a single and complete project (33 CFR 330.2[i]), it was requested that each community be evaluated as single and complete but permitted under one file number for the Corps. Correspondence with USACE and the Pre-Construction Notification application provided to the USACE on December 21, 2023, are included in Appendix C.

Permanent Impacts

Permanent impacts include installation of BMHs, vaults, and fill to create CLS. Temporary impacts include FOC trenching. FOC laid directly on the seafloor does not constitute an impact as no substrate disturbance would occur, except over time, wherein the FOC will eventually settle into sediments. FOC laid on the seafloor is not considered to be an effect, as evaluated by the EFH assessment (EFHA) and it is not regulated by the USACE. Estimated impacts by community are listed in Tables 6-8. A more detailed summary of each impact type is included in Appendix C.

Table 6: Impacts to Terrestrial Wetlands

Location	Total Permanent Impacts		Total Temporary Impacts	
	Area (Square feet)	Volume (Cubic feet)	Area (Square feet)	Volume (Cubic feet)
Ouzinkie	4,930	12,830	147,215	410,187.80
Port Lions	5,355	14,190	262,998	679,558.49
Chignik Lagoon	4,310	10,900	132,807	695,839.92
Chignik Lake	4,430	4,550	220,584	459,791.81
Cold Bay	4,580	11,710	227,988	447,650.47
False Pass	3,905	9,550	151,037	794,907.37
Total	**27,510**	**63,730**	**1,142,629**	**3,487,936**

Table 7: All Communities: Permanent Impacts to Terrestrial Wetlands by Type

Location	Impact by Project Element (square feet)			Total (square feet)
	Beach Manholes	Vaults	CLS Shelter Pads	
Ouzinkie	30	2,400	2,500	**4,930**
Port Lions	30	2,825	2,500	**5,355**
Chignik Lagoon	60	1,750	2,500	**4,310**
Chignik Lake	30	4,400	-	**4,430**
Cold Bay	30	2,050	2,500	**4,580**
False Pass	30	1,375	2,500	**3,905**
Total	**210**	**14,800**	**12,500**	**27,510**

Table 8: Temporary Impacts to Terrestrial Wetlands and Marine and Intertidal

Location	Terrestrial FOC		Marine and Intertidal FOC		Total (Square feet)
	Linear feet	Square-feet^2	Linear Feet	Square-feet^2	
Ouzinkie	18,276	146,215	1,000	1,000	**147,215**
Port Lions	32,751	262,014	984	984	**262,998**
Chignik Lagoon	16,354	130,832	1,975	1,975	**132,807**
Chignik Lake	27,202	217,617	2,967	2,967	**220,584**
Cold Bay	28,252	226,022	1,966	1,966	**227,988**
False Pass	18,740	149,925	1,112	1,112	**151,037**
Total	**141,575**	**1,132,625**	**10,004**	**10,004**	**1,142,629**

3.5.2.2 No Action Alternative

The no action alternative would not impact WOTUS because no FOC would be installed and no associated structures would be constructed.

3.6 Water Resources

Water resources in this section address drinking water sources, groundwater and potential impacts to water quality in adjacent waterbodies. Coastal resources, fisheries, and water-dependent habitats are addressed in other sections.

3.6.1 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 (EPA) drinking water mapping application indicates there are no impaired drinking water sources in the six communities. A search of EPA sole source aquifers indicates there are no such resources in the six communities. No community water system has a drinking water protection plan in place. 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 project is outside of all DEC drinking water protection zones.

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

The Proposed Action would not produce wastewater and disturbance would not extend more than 5 ft bgs, above aquifer depth in all communities. Any stormwater generated from trenching FOC would not alter community drinking water sources. A Stormwater Pollution Prevention Plan (SWPPP), when needed, would use best management practices (BMPs) to minimize any temporary impacts to water quality.

3.6.2.2 No Action Alternative

The no action alternative would not affect community drinking water sources because no trenching would occur that could generate stormwater runoff.

3.7 Biological Resources

This section describes the regional biological resources and has subsections that address specific biological resources present in the Proposed Action area.

3.7.1 Affected Environment

The project would be deployed and constructed 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 (cool summers and winters with a narrow temperature range). The region is south of the winter sea ice pack and is generally free from permafrost. Vegetation cover mainly consists of dwarf tundra at higher elevations and on sites exposed to wind, and of grass or herbaceous communities in more protected sites, such as bluejoint reedgrass or wildflowers. The region is sparsely populated and no roads connect communities, therefore ecosystems are largely intact with large uninterrupted spans of intact habitat.

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 proposed project footprint is unique or uncommon in the region, and there are no listed threatened or endangered plant species (University of Alaska 2018).

The Proposed Action area is located across three land resource areas (LRA), which are described by the USDA and are intended to represent areas of broad regional climate and climatic conditions, patterns, and processes (USDA 2004).

Ouzinkie and Port Lions are located within the Kodiak Archipelago LRA, which is largely undeveloped wildland primarily covered by large Sitka spruce forests, and lowlands dominated by tall and low willow scrub and other herbaceous communities. This mix of habitat supports the Kodiak brown bear, Sitka black-tailed deer, Roosevelt elk, and mountain goat. Many species of waterfowl migrate through, breed or winter in the area. There is a major migration route through Shelikof Strait and along the Alaska Peninsula. The coasts provide important wintering habitat for scoters, eiders, oldsquaws, mallards, and black brant. Other waterfowl in the area include loons, geese, ducks, and grebes. The rocky shorelines are excellent habitat for bald eagles, and peregrine falcons. The area also includes many major seabird colonies. Area streams and rivers support healthy populations of wild salmon and freshwater fish.

Chignik Lagoon and Chignik Lagoon are located within the Southern Alaska Peninsula Mountains LRA, which supports only a handful of small, coastal villages. At lower elevations, vegetation is characterized by mostly tall alder and willow and as elevation increases, this rapidly give way to low scrub dominated by willow, ericaceous shrubs, and various graminoids and forbs. At the highest elevations and on exposed ridges and steep slopes with shallow bedrock, dwarf scrub is the dominant vegetation. Mammals present include brown bear, Dall sheep, moose, wolf and coyote. Ptarmigan, American golden plovers, golden eagles, and a wide variety of other birds are common in many places.

Cold Bay and False Pass are within the Aleutian Island-Western Laska Peninsula LRA, which like the other landscapes in the Proposed Action area is largely unpopulated; Cold Bay is one of the larger communities across this region. At higher elevations, vegetation consists of a mosaic of dwarf shrub scrub characteristic of the true alpine zone. At lower elevations there are wet and dry grasslands dominated by mid-sized and tall grasses, sedges, and forbs. The region is rich with marine and bird wildlife and some areas are important winter habitat for emperor geese and other waterfowl. This area also provides nesting habitat for a variety of birds, including green-winged teal, rock sandpiper, whiskered auklet, rock ptarmigan, song sparrow, rosy finch, and winter wren.

Anadromous Stream Habitat

Anadromous fish are species (e.g., salmon) that spend most of their adult lives at sea but return to natal freshwater systems to reproduce. Anadromous habitat in the context of this section refers to freshwater stream habitats that support anadromous fish. The project traverses the Chignik River, an anadromous stream per the Alaska Department of Fish and Game (ADF&G) (#271-10-10310). The Chignik River ranges from approximately 300 ft to 1,500 ft in width and provides habitat for chum *(Oncorhynchus keta)*, coho (*O. kisutch*), Chinook (O. *tshawytscha)*, pink (*O. gorbuscha*) and sockeye salmon (*O.* nerka), Dolly Varden and steelhead trout.

Essential Fish Habitat

Also included in this section is an evaluation of EFH, defined as the habitat (waters and substrate) necessary to fish and other benthic species for spawning, breeding, feeding, or growth to maturity. The Magnuson-Stevens Fisheries Conservation and Management Act (MSA) (1996) defines essential fish habitat (EFH) as "…waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." EFH is identified as the distribution of 95 percent of the species population, for a particular life stage, if life history data are available for the species, and includes all areas of suitable habitat where the life stages are found within the stated geographic areas.

The Proposed Action is within an area designated as EFH under the MSA in four Fishery Management Plans (FMPs):

1. Salmon Fisheries in the Exclusive Economic Zone (EEZ) off Alaska (NPFMC 2021)
2. Groundfish of the Bering Sea and Aleutian Islands (NPFMC 2020)
3. Groundfish of the Gulf of Alaska (GOA) (NPFMC 2020)
4. Scallop Fishery off Alaska (NPFMC 2014).

The FMPs identified and the National Marine Fisheries Service (NMFS) EFH Web Mapping Tool (NOAA Fisheries 2023a) were used to determine EFH present within and adjacent to the Project area. EFH was identified within the Project area in the Salmon and Groundfish FMPs (NPFMC 2021). Of the species which are federally managed under these plans, a total of 47 occur in the Project area. This includes 19 species of rockfish, 3 species of sculpin, 5 species of salmon, 9 species of sole or flounder, 3 species of skate, octopus, squid Atka mackerel, pacific cod, Pacific Ocean perch, sablefish, walleye pollock, and weathervane scallop, listed in Table 9.

Table 9: Species with Designated EFH in Project Area

Common Name	Species	Designated EFH
Black rockfish	*Sebastes melanops*	EFH widely distributed
Blackspotted rockfish	*Sebastes melanostictus*	EFH widely distributed
Dark rockfish	*Sebastes crameri*	EFH widely distributed
Dusky rockfish	*Sebastes ciliatus*	EFH widely distributed
Greenstriped rockfish	*Sebastes elongatus*	EFH widely distributed
Harlequin rockfish	*Sebastes variegatus*	EFH widely distributed
Longspine thornyhead rockfish	*Sebastulobus altivelas*	EFH widely distributed
Northern rockfish	*Sebastes polyspinis*	EFH widely distributed
Pacific ocean perch	*Sebastes alutus*	EFH widely distributed
Pygmy rockfish	*Sebastes wilsoni*	EFH widely distributed
Quillback rockfish	*Sebastes maliger*	EFH widely distributed
Redbanded rockfish	*Sebastes babcocki*	EFH widely distributed
Redstriped rockfish	*Sebastes proriger*	EFH widely distributed
Rosethorn rockfish	*Sebastes helvomaculatus*	EFH near Port Lions and Cold Bay
Rougheye rockfish	*Sebastes Aleutianus*	EFH widely distributed
Sharpchin rockfish	*Sebastes zacentrus*	EFH widely distributed
Shortraker rockfish	*Sebastes borealis*	EFH widely distributed
Shortspine thornyhead rockfish	*Sebastolobus alascanus*	EFH widely distributed
Silvergrey rockfish	*Sebastes brevispinis*	EFH widely distributed
Yelloweye rockfish	*Sebastes ruberrimus*	EFH widely distributed
Bigmouth sculpin	*Hemitripterus bolini*	EFH widely distributed
Great sculpin	*Myoxocephalus polyacanthocephalus*	EFH widely distributed
Yellow Irish lord	*Hemilepidoyus spinosus*	EFH widely distributed
Chinook salmon	*Oncorhynchus tshawytscha*	EFH widely distributed
Chum salmon	*Oncorhynchus keta*	EFH widely distributed
Coho salmon	*Oncorhynchus kisutch*	EFH widely distributed
Pink salmon	*Oncorhynchus gorbuscha*	EFH widely distributed
Sockeye salmon	*Oncorhynchus nerka*	EFH widely distributed
Alaska plaice	*Pleuronectes quadrituberculatus*	EFH widely distributed
Arrowtooth flounder	*Atheresthes stomias*	EFH from False Pass to Unalaska
Kamchatka flounder	*Atheresthes evermanni*	EFH widely distributed
Dover sole	*Microstomus pacificus*	EFH from False Pass to Unalaska
Flathead sole	*Hippoglossoides elassodon*	EFH widely distributed
Northern rock sole	*Lepidopsetta polyxystra*	EFH widely distributed
Rex sole	*Glyptocephalus zachirus*	EFH from Port Heiden to Unalaska
Southern rock sole	*Lepidopsetta bilineata*	EFH widely distributed
Yellowfin sole	*Limanda aspera*	EFH widely distributed

Common Name	Species	Designated EFH
Alaska skate	*Bathyraja parmifera*	EFH widely distributed
Aleutian skate	*Bathyraja aleutica*	EFH widely distributed
Bering skate	*Beringraja binoculata*	EFH widely distributed
Atka mackerel	*Pleurogrammus monopterygius*	EFH widely distributed
Octopus	*Octopus* sp.	EFH widely distributed
Pacific cod	*Gadus macrocephalus*	EFH widely distributed
Sablefish	*Anoplopoma fimbria*	EFH from False Pass to Unalaska
Squid	*Doryteuthis* sp.	EFH from False Pass to Unalaska
Walleye pollock	*Gadus chalcogrammus*	EFH widely distributed
Weathervane scallop	*Patinopecten caurinus*	EFH from False Pass to Unalaska

Endangered Species Act

A search of the USFWS Information, Planning, and Consultation (IPaC) online database for each site identified 3 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 in Project Area	Occurrence in Project Area (Marine or Terrestrial)
blue whale (*Balaenoptera musculus*)	NMFS	Endangered	No	Marine
fin whale (*Balaenoptera physalus*)	NMFS	Endangered	No	Marine
North Pacific right whale (*Eubalaena japonica*)	NMFS	Endangered	Yes	Marine
Western North Pacific gray whale (*Eschrichtius roubustus*)	NMFS	Endangered	No	Marine
humpback whale (*Megaptera novaeangliae*) Western North Pacific Stock	NMFS	Endangered	Yes	Marine
humpback whale (*Megaptera novaeangliae*) Mexico DPS	NMFS	Threatened	Yes	Marine
sperm whale (*Physeter macrocephalus*)	NMFS	Endangered	No	Marine
Steller sea lion (*Eumetopias jubatus*) Western stock	NMFS	Endangered	Yes	Marine
sunflower sea star (*Pycnopodia helianthoides*)	NMFS	Threatened (Proposed)	No	Marine
Northern sea otter (*Enhydra lutris*)	USFWS	Threatened	Yes	Marine
Steller's eider (*Polysticta stelleri*) Alaska Region	USFWS	Threatened	No	Marine and Terrestrial
short-tailed albatross (*Phoebastria albatrus*)	USFWS	Endangered	No	Marine and Terrestrial

Note: DPS = Distinct Population Segment

Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972 (MMPA) prohibits the taking of all marine mammals, regardless of listing status under the Endangered Species Act (ESA). The term “take” means to harass, hunt, capture, or kill or attempt to harass, hunt, capture, or kill any marine mammal. Takes may be authorized under the MMPA by NMFS and USFWS through Incidental Harassment Authorizations (IHAs) or Letters of Authorization (LOAs) issued under Incidental Take Regulations (ITRs). For ESA-listed marine mammals, takes may also be issued as a result of formal Section 7 consultation under the ESA.

Marine mammals in the project area include the following:

- Blue whale
- Fin whale
- North Pacific right whale
- Western North Pacific gray whale
- Humpback whale
- Sperm whale
- Steller sea lion
- Harbor seal
- Harbor porpoise
- Minke whale
- Cuvier’s beaked whale
- Pacific white-sided dolphin
- Killer whale
- Harbor porpoise
- Dall’s porpoise
- Northern fur seal
- Steller sea lion
- Harbor seal
- Ribbon seal
- Spotted seal
- 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 as a Bird of Conservation Concern (BCC) within the proposed project limits (Appendix D).

1. Aleutian Tern
2. American Golden-plover
3. Bar-tailed Godwit
4. Black Oystercatcher
5. Black Turnstone
6. Black-footed Albatross

7. Kittlitz's Murrelet
8. Laysan Albatross
9. Mckay's Bunting
10. Olive-sided Flycatcher
11. Red-legged kittiwake
12. Short-billed Dowitcher
13. Yellow-billed Loon

Of these BCC species, none are known to nest within habitat affected by the Proposed Action occurs (Audubon 2024, ADF&G 2024, Cornell Lab 2024). Other migratory birds not listed as BCC would occur in the project area, and would include songbirds, shorebirds, waterfowl and raptors.

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 in the tallest tree within 600 ft of a waterbody. USFWS has published eagle nest locations within Alaska. A review of this data was conducted on October 11, 2023, to identify the nearest nests to the proposed Project locations as listed below (USFWS 2023b):

- Ouzinkie: greater than 4,000 ft
- Port Lions: approximately 2,200 ft
- Chignik Lagoon: approximately 3 miles
- Chignik Lake: approximately 10 miles
- Cold Bay: approximately 10 miles
- False Pass: approximately 35 miles

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 invasive species present within 250 ft of the Project area, summarized in Table 11 (AKEPIC 2023):

Table 11: Invasive Species Present within the Project Area

Common Name (Species)	Ouzinkie	Port Lions	Chignik Lake	Cold Bay
Canada thistle (Cirsium arvense)				x
common dandelion (Taraxacum officinale)			x	x
common plantain (Plantago major)			x	
common tansy (Tanacetum vulgare)	x			
creeping buttercup (Ranunculus repens)	x	x		
curly dock (Rumex crispus)			x	
European mountain ash (Sorbus aucuparia				x
Kentucky bluegrass (Poa pratensis)			x	
lambsquarters (Chenopodium album)			x	
orange hawkweed (Hieracium aurantiacum)	x	x		x
oxeye daisy (Leucanthemum vulgare)	x	x	x	x
pineappleweed (Matricaria discoidea)			x	
purple foxglove (Digitalis purpurea)	x	x		
tall buttercup (Ranunculus acris)	x			x
timothy (Phleum pratense)			x	
white clover (Trifolium repens)				x

No invasive species were documented in Chignik Lagoon or False pass by AKEPIC.

3.7.2 Environmental Consequences

3.7.2.1 Proposed Action

General Fish and Wildlife

Installation of FOC would largely occur along roads in terrestrial areas and would be buried, which would not restrict movement of wildlife. New CLS construction will occur next to existing buildings and are within existing disturbance and not placed within areas of sensitive habitat. The Proposed Action is not anticipated to have significant effects on wildlife habitat. Consultation with local communities and the fishing community is conducted to avoid conflict with commercial or subsistence fisheries.

Anadromous Stream Habitat

Installation of FOC within anadromous habitat would occur using a small vessel whilst attempting to lay with sufficient slack to conform to the riverbed. A diver would use a water hose that liquefies sediments allowing FOC to settle into active sediment areas allowing the substrate to bury FOC over time. Hand jetting is anticipated to take no longer than one day. A shallow trench may remain following cable burial until normal water movement allows sediment to level the riverbed. During consultation with ADF&G, it was determined that most impacts on spawning activity would be avoided by placing FOC only in June (see Mitigation Measures) and by following an alignment that avoids the most sensitive habitat (Appendix E). A Title 16 Fish Habitat permit is being obtained from ADF&G. Pre-consultation with ADF&G staff resulted in the project mitigating potential effects to salmon habitat by restricting placement of the FOC only during June.

Documentation of consultation with ADF&G and the Title 16 permit application submitted December 21, 2023, is included in Appendix E.

Essential Fish Habitat

An EFHA was prepared for consultation purposes under CFR 600.920(h)(2) – Abbreviated Consultation Procedures and submitted to the NFMS EFH staff for review on December 21, 2023. NMFS completed consultation on January 29. 2024 (Appendix E). The EFHA determined the Project would adversely affect EFH due to:

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

Direct laying of FOC would not affect EFH, however FOC trenching would result in habitat alteration for fish (minor and temporary increase in turbidity, and disturbance of benthic sediments) and would have the potential for mortality and injury associated with entrainment of small benthic species. Trenching would also displace sediment leading to increased turbidity.

Trenching would not permanently damage habitats as trench spoils will be backfilled. In areas with large boulders, boulders will be replaced. Approximately 7,840 acres (ac) of temporary disturbance from trenching over roughly 1.5 mi is anticipated. Temporary alteration of habitat could affect EFH for all species that inhabit nearshore and intertidal areas. Habitat would be expected to recover to pre-trenching conditions within 1 to 2 years. Recovery could be quicker if substrates are not colonized with algae or invertebrates.

Potential effects on EFH as a result of activities associated with the Project are expected to be no more than negligible and temporary. Although a small portion of the EFH in the Project area would be adversely impacted, the Project will not impact EFH to the point of causing adverse impacts to fish populations. Individuals of a variety of species are expected to move successfully into similar habitats, because the types of habitats that will be affected are not unique or rare.

All effects would be temporary during construction and conservation measures would be used to avoid and minimize impacts to the extent possible.

Endangered Species Act

The project would temporarily increase vessel traffic and associated noise by a small amount during FOC installation, however the direct loss of habitat available to ESA-listed marine mammals due to vessel noise is expected to be minimal. DOWL, acting as a NTIA's non-federal representative to the USFWS, 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 on December 21, 2023, with request for concurrence 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. USFWS concurred on February 15, 2024.

During review of the BA, NMFS requested information to develop a conference opinion to address the anticipated listing of the sunflower sea star as intertidal jetting was identified as having the potential to adversely affect it. During subsequent consultation with NMFS, a set of mitigation measures were developed to avoid impacting sea stars. NMFS has finalized the letter of

Concurrence and it is anticipated to be signed by May 1. 2024. Both BAs and all consultations are included in Appendix F.

Marine Mammal Protection Act

As stated above, noise generated from vessels laying FOC in the marine environment would increase but would not have a significant impact on marine mammals. For the Proposed Action, NMFS and USFWS determined takes of marine mammals are not likely to occur as a result of project activities; therefore, NTIA is participating in informal ESA Section 7 consultation, and no takes of marine mammals will be authorized under the ESA. Similarly, no takes of marine mammals will be requested under the MMPA. Correspondence with National Oceanic and Atmospheric Administration (NOAA) 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 to avoid impacts to nesting birds is April 25 to July 15 for False Pass and Cold Bay, May 1 to July 15 for Chignik Lagoon and Chignik Lake, and April 15 to July 15 for Port Lions and Ouzinkie. When possible, trenching would occur outside the bird window, but may not be possible for the whole project. However, vegetation subject to clearing that would occur during trenching would not exceed 8 feet in width and would typically consist of grasses and shrubs along existing disturbed roads and within the active ROW. Migratory birds that nest in shrubs and herbaceous vegetation would likely include songbirds such as thrush, swallows or warblers, which generally avoid habitat immediate adjacent to roadways due to increased exposure from predation and effects from dust generated from ATVs on gravel roads (U.S. Department of Commerce 1984, Batary 2004). As such the Project is not anticipated to adversely affect migratory birds

Bald Eagles

USFWS has determined common construction activities may produce noise and/or vibration that can disturb eagles during nesting season. The AU-A EA concluded the Project was not anticipated to adversely affect eagle nests or bald eagles. Part of the analysis of that effect is based on studies that show 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 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 be developed specifically for Alaska so effects to Bald Eagles from transportation could be more relevant (ADOT&PF 2019).

The conditions of the communities assessed in the AU-A project (small, off the road system, active construction zones) apply to the Proposed Action communities as well.

Although the Project is not likely to have significant impacts on bald eagles, 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 CLS 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.

3.7.2.2 No Action Alternative

The no action alternative would not require land disturbance and therefore would have no effect on biological resources within the review area.

3.8 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.

The Proposed Action would occur within communities that are populated by federally recognized tribes and consultation under Section 106 included outreach to the following entities:

	Federally Recognized Tribe	**ANCSA Corporation**	**ANCSA Non-Profit**
Afognak Native Corporation		x	
Agdaagux Tribe of King Cove	x		
Akutan Corporation		x	
Aleut Corporation		x	
Aleutian Pribolof Islands Association			x
Bristol Bay Native Association			x
Bristol Bay Native Corporation		x	
Chignik Bay Tribal Council	x		
Chignik Lagoon Native Corp		x	
Far West, Incorporated		x	
Isanotski Corp		x	
King Cove Corporation Inc.		x	
Koniag, Incorporated		x	
Native Village of Afognak	x		
Native Village of Akutan (Akutan Traditional Council)	x		
Native Village of Belokofski	x		
Native Village of Chignik Lagoon	x		
Native Village of Chignik Lake	x		
Native Village of False Pass	x		
Native Village of Karluk	x		
Native Village of Larsen Bay	x		
Native Village of Ouzinkie	x		
Native Village of Perryville	x		
Native Village of Port Lions	x		
Native Village of Unga	x		
Natives of Kodiak, Incorporated			x
Oceanside Corporation		x	

Ounalashka Corporation		x	
Ouzinkie Native Corporation		x	
Pauloff Harbor Tribe	x		
Qagan Tayagungin Tribe of Sand Point	x		
Qawalangin Tribe of Unalaska	x		
Sun'aq Tribe of Kodiak	x		
Tangirnaq Native Village	x		

Each of these tribal entities was invited to participate in the project as a Consulting Party. This participation in the PA process included seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the Section 106 process. Each consulting party has the opportunity to share their views, receive and review pertinent information, offer ideas, and consider possible solutions about any of the Section 106 plans laid out in the PA. Consulting parties and signatories to the PA include:

- NTIA (new signatory)
- USDA RUS
- USACE
- SHPO
- Aleutiq Museum
- Oonalashka Corporation

3.8.1 Affected Environment

The Proposed Action includes communities and areas with cultural traditions from inhabitation over the past 9,000 years. While some cultures may be more archaeologically present in one region over another, such as the Kachemak Tradition in the Kodiak Archipelago or the Amaknak Phase in the Eastern Aleutians, each cultural tradition listed blow comprises of every known cultural phase that could be encountered during the effort of this project.

Kodiak Archipelago and the Southeastern Alaska Peninsula

This cultural chronology encapsulates pre-contact archaeological contexts in the Ouzinkie, Port Lions, Chignik Lagoon, and Chignik Lake communities. Between 8,600 to 4,000 years before present humans encountered an environment warmer and drier than today. Later houses were more varied in shape and size, with larger pentagonal, oval and circular structures being built (Gillispie 2018). Between 4,000 to 800 years before present, people in Kodiak, portions of the Alaska Peninsula, and the Kenai Peninsula, began to focus more on fishing, particularly for both cod and salmon (Kopperl 2003). They developed nets to harvest large quantities of salmon, and slate ulus and smokehouses to process the catch for storage. Over time, population grew in the Kodiak Archipelago and filled up the landscape, while communities on the Alaska Peninsula had increasing contact with other cultures (Tennessen 2009). By the end of the Kachemak tradition, trade between the Kodiak Archipelago and the Alaska mainland was heavily focused on large quantities of raw materials. Between 800 to 250 years before present, fishing grew to higher importance as people harvested greater quantities of salmon to feed their families and trade with neighbors (Gillispie 2018). Related families began living together in large, multiple-roomed sod houses pooling resources and labor (Tennessen 2009). Chiefs emerged, perhaps to organize labor. They led war and trading parties and hosted elaborate winter ceremonies to display their wealth and power, honor ancestors, and ensure future prosperity (Kopperl 2003).

Between 1763 and 1867, Russian peoples arrived, which began with the fur trade. The Russians coerced many indigenous peoples to work as labor harvesting sea otter pelts for European and Chinese markets. Many became “slaves” in the fur trade, as travel was restricted (Clark and Milan 1974). European-style wooden buildings began to be constructed in villages, and western diseases heavily affected Native populations (Clark and Milan 1974). Alutiiq culture was suppressed as Russian language, religion, social interaction, and economic structure were introduced. Many Alutiiq people learned Russian, married Russian workers, and converted to Russian Orthodoxy. The period is also marked by Russian trade goods found in the archaeological record and the consolidation of Native villages and settlements into cultural centers (Saltonstall and Steffian 2006). The latter portion of this period is marked by the purchase of the Alaska Territory from Russian owners by the United States.

Western Alaska Peninsula

The Western Alaska Peninsula pre-contact cultural chronology is most relevant to the community of Cold Bay. Between 4,950 to 1,850 years before present, small villages with small houses begin to pop up on the Western Alaska Peninsula (Maschner 2004). These settlements are located in ideal positions for access to marine, terrestrial, riverine, and intertidal resources. Oil lamps, grinding stones, and basalt projectile points were common lithics, while polished slate items were occasionally present, but rare (Maschner 2004). Small villages and small houses continued to persist, along with the locations of settlements continuing to be placed in areas with efficient access to marine, terrestrial, riverine, and intertidal resources. Villages and houses then became larger in size while remaining in similar locations as before, with efficient access to marine, terrestrial, riverine, and intertidal resources. Contracting stem endblades become common in toolkits, line hole harpoons are used and toggle harpoons are rare (Maschner 2004). Houses progressively grew and villages “become small towns” (Maschner 2004). Settlements move towards primary efficiency for access to marine and intertidal resources, with a move towards salmon as a primary resource. Villages of varied emerged and settlements continue to be placed in locations with best efficient access to marine and intertidal resource and salmon continue to be exploited at higher rates. Between 1,350 to 700 years before present, settlement shifts from three millenia of access to open coastlines changed to an emphasis on living near salmon streams. Houses and villages become smaller during this phase (Maschner 2004). Refuge and fortification rocks and sites indicate increased warfare during this period (Maschner 2004). Settlements then moved back towards the coast for efficient access to marine and intertidal resources, but salmon continue to be a dominate resources as well. Villages grow larger and “nucleus-satellite hous[ing]” is developed (Maschner 2004). Between 700 to 475 years before present, a severe reduction in region population takes place, villages and houses are much smaller during this phase and the nucleus-Satellite houses disappear (Maschner 2004). Houses are commonly built using whale bone during this period and settlement is moved back to open coasts, with a dramatic decrease in salmon exploitation. Between 475 to 150 years before present, population booms back and the nucleus-satellite houses return with even larger sizes (Maschner 2004). Salmon streams become primary settlement locations and warfare is once again evidenced by refuge rocks and fortification sites.

Eastern Aleutian Islands

The Eastern Aleutian Islands pre-contact cultural chronology is most relevant for the community of False Pass.

Between 9,000 to 1,000 years before present, humans settled in coastal locations in small structures and post holes surrounding these structures suggest temporary shelters (McCartney

1984). Settlements became more semi-permanent and were often located along raised shorelines, above current sea levels, with some sites being located up to a kilometer inland (McCartney 1984; Knecht and Davis 2001). Houses and structures are noted to be larger and more substantially built, having walls lined with stone. Up to 200 years before present, settlements were generally located on top of large middens near the current shoreline and dwelling sizes grew substantially to longhouses that housed various families (McCartney 1971, McCartney 1984). Increasing contact between island populations is evidenced through trade goods from this period (Dumond 1975; Dumond 1977). Russian explorers arrived in 1741 A.D.

Post-Contact Context

All the communities were affect as Russian newcomers occupied coastal areas throughout Alaska (Black 1999). The post-contact context is divided between the Russian period and the American period.

Russian Period (1741 to 1867). In 1741 landfall was made by Russians on the Shumagin Islands. Russian activity was largely focused on coastal regions as furbearing sea mammals were hunted for pelts. During the 1760s, independent Russian fur hunters expanded their hunting range into the Alaskan Peninsula. A small Russian outpost was established just north of Chignik Lagoon around this time, at Kujulik Bay, although formal exploration of the Chignik Bay area was not undertaken until 1836. The main Russian settlement in the Aleutians was established at Unalaska in 1774, and the main Russian settlement on the Alaska Peninsula was established well north at Three Saints Bay in 1784 (Cooper et al. 2015). Alaska Native populations were decimated during the Russian period due to the dwindling of subsistence foods, the introduction of European diseases, forced relocation, and brutal treatment at the hands of the Russians. This steep decline in population further affecting cultural practices. By the 1770s, many Native communities were largely dependent on Russian company stores for survival (Tozzi and Thompson 2012). Many Native people learned Russian, married Russian workers, and converted to Russian Orthodoxy. The community of Ouzinkie was founded sometime in the early 1800s (OHA 2023). While False Pass was not founded until the early 1900s, a Russian contact era Unangax̂ village site is located within town (OHA 2023). The period is marked by Russian trade goods found in the archaeological record and the consolidation of Native villages and settlements into cultural centers (Saltonstall and Steffian 2006). The end of this period is marked by the transfer of the Alaska Territory from Russian ownership to the United States.

American Period (1867 to Present). With Russian focusing primarily on the fur trade, little formal exploration of the Alaskan interior had occurred at the time of the Alaska Purchase by the United States in 1867.During the 1870s, the US Army was responsible for the territory of Alaska. The 1870s also saw exploration and documentation work of Alaska by William Dall and other early Army explorers (Cooper et al. 2015). In 1870, the Alaska Commercial Company (ACC) was formed, and purchased all the remaining assets of the Russian American Company. The ACC began conscripting Indigenous peoples to hunt sea otters and fur seals, which quickly decimated the populations of these furbearing animals. Not long after, independent trading vessels appeared and by 1902 the fur trade along the Southern Alaska Peninsula had collapsed (Cooper et al. 2015). However, the abundant salmon runs and access to other fisheries resources in the region resulted in a boom of fishing fleets and canneries. Exploitation of Native Alaskans continued under American control of the territory as Natives now had to learn English and work in the many hunting and fishing industries they had worked under the Russians (Jones 1970; Merculieff 2016). In 1942, Japan invaded and took control of Attu and Kiska Islands in the western Aleutian Islands. This prompted a massive effort by the United States to defend the Alaskan Territory. Bases were placed in numerous locations throughout Alaska, including Unalaska, Cold Bay, and Kodiak

(Black 1999). Because of this, much of the archaeology within and around the community of Cold Bay involves sites from World War II (OHA 2023). The community of Port Lions was founded in 1964, after the Good Friday Earthquake destroyed the village of Afognak, and the community move to Port Lions (OHA 2023).

For the proposed project, the Area of Potential Effect (APE) encompasses areas where ground disturbing activities may occur with an appropriate buffer. The APE for terrestrial operations was established in the PA using a generally adopted standard of approximately 30 ft on either side of all ground-disturbing work, resulting in a 60-ft corridor. The APE for marine activities is 150 ft on either side of the cable-lay route resulting in a 300-ft corridor. The APE for marine operations is larger to accommodate a wider alignment in marine areas to avoid large subsea formations (e.g., rock outcropping)

3.8.1.1 Terrestrial Area of Potential Effect

DOWL reviewed the Alaska Heritage Resource Survey (AHRS) database at the DNR, Office of History and Archaeology (OHA) to determine the extent of previous cultural resource work in the area (OHA 2023). The purpose of the file search was to identify any previous cultural resources studies, and documented sites, historic buildings, structures, objects, or historic districts located in or near the APE. In addition, reports and documentation not readily available on file at OHA were obtained from digital libraries and online archives and reviewed for relevance to the project. DOWL synthesized the data collected to assist in the drafting of the PA amendment and subsequent work plan(s) to support field studies.

Fifteen AHRS sites intersect with or fall within fifteen feet of the APE:

- Port Lions (1)

  The site in Port Lions has a vague locational description, included a “poor collection” (OHA 2023), and was last investigated in 1964. An attempt to located the site was made in 2007, but no cultural deposits were located (OHA 2023).

- Ouzinkie (7)

  Of the seven sites in Ouzinkie, three have been razed or destroyed, one is the Russian Orthodox cemetery which is outside the project APE by some 10 to 15 feet, one is a 1934 house that has been determined not eligible for the National Register of Historic Places (OHA 2023). The final two AHRS sites in Ouzinkie are vaguely defined Russian and American period occupation areas, that encapsulate much of the town (OHA 2023).

- Chignik Lagoon (1)

  The lone AHRS site in Chignik Lagoon that falls within 15 feet of the project APE was an assemblage of lithic materials, excavated by Don Dumond in the 1970s (OHA 2023). The majority of the site was most likely razed by road construction prior to Dumond’s investigation (Dumond 1975).

- Chignik Lake (3)

  The first site in Chignik Lake that falls within 15 ft of the project boundary, is most likely an error in the AHRS database. While the database mapper displays the site along the project

APE, original site reports place the site at a higher elevation, some 200 ft west of the project APE (OHA 1977). The two other AHRS sites in Chignik Lake are large village sites underneath much of the town (OHA 2023). These sites have been a part of various archaeological monitoring projects, during Chignik Lake sewage system upgrades (THRC 2015).

- Cold Bay (1)

  The only AHRS site in the Community of Cold Bay that intersects with the project APE is the vaguely defined Fort Randall (OHA 2023). Fort Randall was the army airfield constructed at Cold Bay during World War II. Designated as a 'District' in the AHRS system, this cultural resource encapsulates much of the town, as evidence of the American military presence during World War II, in Cold Bay, can still be encountered (OHA 2023).

- False Pass (2)

  Two larger AHRS sites intersect with the project APE in False Pass. The Peter Pan Cannery historic site and archaeological site XFP-00004. Peter Pan Cannery operated from 1920 until 1981 when a fire destroyed the main cannery and warehouse buildings, only some fuel tanks and buildings remain. The XFP-00004 archaeological site intersects with the project APE in False Pass. This site is a Russian contact era Unangax̂ village site with at least 10 semi subterranean house depressions (Hanson and Flemming 2007; ASRC 2016).

3.8.1.2 Marine Area of Potential Effect

A review of the AHRS database indicated there are no previously identified AHRS sites within or intersecting the marine APE. Furthermore, a review of the National Oceanic and Atmospheric Administration's Wrecks and Obstructions database identified no shipwrecks or documented cultural features within or intersecting the marine APE.

3.8.2 Environmental Consequences

3.8.2.1 Proposed Action

To meet compliance requirements of Section 106, a 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. The PA was executed for AU-A between RUS, USACE, and SHPO to meet compliance with Section 106 for the Project that included stipulations to amend the agreement and use it as a vehicle for compliance for additions to the existing subsea fiber backbone to additional communities by different agencies and using separate funding sources. The applicant and the NTIA are working to amend the PA to include the AU-Aleutian II FOC to the six communities. Per the PA, cultural resource monitoring must occur in all areas of ground disturbance associated with the Project. Although not required, the PA does include a provision that fieldwork may be conducted in advance of any ground-disturbing activities to reduce the amount of monitoring required during construction.

The PA contains the following key agreements which must be completed by the Project applicant:

- Subsea data was reviewed by a marine archaeologist to identify potential anthropogenic or cultural remains within the marine APE. This review includes 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 with any recommended alignment changes based on the archaeological review.

- 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.

All correspondence related to Section 106 including the signed and amended PA are in Appendix G.

3.8.2.2 Mitigation

The PA outlines the processes and protocols by which the potential for adverse impacts to cultural resources and historic properties would be avoided and minimized. These include:

1. analysis of subsea sonar data by a marine archaeologist
2. archaeological monitoring of terrestrial construction activities
3. implementing contractor awareness training
4. establishing inadvertent discovery protocols in the event that archaeological, historic, or human remains are encountered during construction.

3.8.2.3 No Action Alternative

The no action alternative would have no impacts to historic properties because there would be no installation of FOC or construction of associated structures.

3.9 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.

3.9.1 Affected Environment

Each community is comprised of a small, tightly built structures with gravel roads, small buildings and surrounded large vistas and mountainous landscapes. Within the boundaries of each community are narrow, roads, dirt trails, residential areas, and institutional buildings of varying age. For dozens, if not hundreds of miles around each community are unbroken wilderness.

3.9.2 Environmental Consequences

3.9.2.1 Proposed Action

Due to the burying of FOC, once completed, the only visible element of the project will be the CLS, small marking for the BMH, and aerial portions of the cable located on existing poles. No additional lighting is included in the Project. The CLS would be built adjacent to existing infrastructure, lack tall or wide profiles and all are being placed on flat areas would not generally be visible from public areas. New CLS and aerial portions of the cable would not significantly affect the overall aesthetics of the area.

3.9.2.2 No Action Alternative

The no action alternative would not affect aesthetics of the existing communities and villages or the natural environment because there would be no installation of FOC or construction of associated structures.

3.10 Air Quality

The Clean Air Act (CAA) 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 CAA, as amended in 1990. DEC oversees air quality in the State of Alaska through AS 46.03 and regulations in Title 18 Alaska Administrative Code (AAC) 50.

3.10.1 Affected Environment

Air quality in the communities within the Proposed Action is not affected by chronic air quality issues common to larger population centers, such as carbon monoxide (DEC 2024a). Air quality in these communities is largely affected only by dust, generated by vehicle traffic on gravel roads, exposed riverbeds or shoreline, unpaved airfields, and gravel pits (DEC 2024b). Dust from vehicle increases with speed.

Ouzinkie, Port Lions, Chignik Lagoon, Chignik Lake, and Cold Bay are included on a list of communities identifying dust as an issue (DEC 2024b). Environmental Consequences

3.10.1.1 Proposed Action

Installation of FOC will generate a minor amount of dust, however vehicles will be moving slower than other traffic and no new material sites will be required. Minor generation of exhaust from vehicles will also occur during construction, however, impacts to air quality during construction are not anticipated to be significant.

Generators located in existing facilities in each community would only be used during power outages and would not create a constant source of emissions. Standard generators include EPA Tier 3 diesel engines with reduced exhaust emissions for engines ranging from 27 to 560 kW when compared to older models. Tier 3 generators meet the EPA Rural Alaska Exemption. Temporary construction-related impacts to air quality would be minimal and no long-term impacts to air quality are anticipated.

Per the 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).

3.10.1.2 No Action Alternative

No impacts to air quality would occur because no FOC would be installed and no associated structures would be constructed.

3.11 Socioeconomic Issues and Environmental Justice

E.O. 12898 requires the consideration of environmental justice (EJ) issues during the NEPA 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. Additionally, E.O. 14096 was recently enacted which supplements the foundational efforts of E.O. 12898 by directing federal agencies to ensure their actions do not have a disproportionately high or adverse effect on EJ populations.

3.11.1 Affected Environment

Each of the communities proposed to be serviced by the Proposed Action currently lack terrestrial FOC broadband service, which restricts access to economic development and limits services provided by healthcare providers, schools, tribal entities, businesses, and residents.

Each of the communities in the Project area is solely comprised of EJ populations, per the EPA EJ Mapper tool (Appendix H). The State of Alaska average for low-income population is 25% and for people of color is 42% (EPA 2023), while averages for each community exceeds Alaska's average. Community demographics are summarized for each community in Table 12.

Table 12: Project Area Demographics

Community	Population (Seasonal)	Low Income Population (%)	People of Color Population (%)
Ouzinkie	116	25	69
Port Lions	165	25	69
Chignik Lagoon	75	41	76
Chignik Lake	61	41	76
Cold Bay	56	35	86
False Pass	395	35	86
Total	**868**	**N/A**	**N/A**

Source: ACDCED 2023; Note: N/A (not applicable)

Communities are supportive of this project largely due to the decreased cost to accessing reliable broadband and each community has voiced support for this Project (Section 6.1, *Stakeholder Engagement*). GCI currently offers two plans using satellites that provide residential broadband service options in the Project communities, however satellite service has a higher cost over time than fiber-based networks (Table 13).

Table 13: Current GCI Residential Broadband Plans

Cost ($/month)	Download Speeds up to:	Minimum Download/Upload Speeds
59.99	512 Kbps	n/a
79.99	1 Mbps	n/a

Notes: Mbps (megabytes per second), Kbps (kilobytes per second). There is no minimum download/upload speeds for these plans which would meet benchmarks established by the FCC.

3.11.2 Environmental Consequences

3.11.2.1 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.

GCI would offer residential plans that parallel the speeds and data usage allowances broadband packages available in GCI's largest market, Anchorage. Table 14 lists 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 14: Proposed Residential Broadband Service Options

Speed	Cost ($/month)	Average Download Speed	Minimum Download/Upload Speeds
Fast	84.99	250 Mbps download	100 Mbps/ 20 Mbps
Faster	109.99	500 Mbps download	100 Mbps/ 20 Mbps
Fastest	159.99	1 Gbps download	100 Mbps/ 20 Mbps
One Gig Red	184.99	2.5 Gbps download	100 Mbps/ 20 Mbps

Source: GCI, (https://www.gci.com/internet#plans)
Notes: Gbps (gigabyte per second); Mbps (megabytes per second)

The project is not anticipated to result in any adverse effects to socioeconomics or environmental justice because it would make essential infrastructure more readily available throughout the project area.

3.11.2.2 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.

3.12 Noise

Noise is typically defined as unwanted sound. Soundscapes in small, rural communities in Alaska vary from very quiet to bursts of noise. Ambient noise is generally lacking (roadway traffic) and

usually is from generators with mobile sources generally being snowmachines, ATVs, outboard motors, and aircraft. Other sources of ambient noise may include wildlife.

3.12.1 Affected Environment

Each of the communities in the Proposed Action area have sensitive receptors, which include residences, schools, churches, and medical clinics. There is no data available that documents the number of vehicles in each community, but based on population is likely less than 40 cars/trucks.

3.12.2 Environmental Consequences

3.12.2.1 Proposed Action

Generators sited at the CLS would only be used during power outages and would be in existing facilities in each community. Once installed, the only noise generated from the Proposed Action would be the occasional sound from the generator

Noise generated from the Proposed Action is primarily from activities during construction. 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 2.1.4, *Community-Specific Operations*.

The proximity of FOC installation activities and operations to other land uses could create noise impacts for proximal sound receptors (e.g., schools, hospitals, residences).

None of the communities have local noise ordinances, therefore noise levels cannot be quantified.

The proposed action would have no significant effect because the duration of increased noise associated with installation and construction activities would be within normal limits for such activities and would be of short duration. Therefore, it would not have a substantial or long-term impact on sensitive sound receptors.

3.12.2.2 No Action Alternative

The no action alternative would not impact sensitive sound receptors because there would be no increase in noisemaking activities.

3.13 Transportation

3.13.1 Affected Environment

The Project is within communities accessible only by aircraft and vessel; there are no external roads into any Project community. The network of local roads (largely unpaved) provides access throughout the towns and to some subsistence fishing and recreation sites. All communities within the Proposed Action area rely heavily on both small boats and all-terrain vehicles (ATV) for travel and hauling supplies in winter and snowmachines in winter. Each community has both a formal harbor and numerous ‘put-ins’ where small boats can land.

3.13.2 Environmental Consequences

3.13.2.1 Proposed Action

Project construction would include barging in an aerial installation truck, two pickup trucks, and two mini excavators and would stay in each community no longer than 90 days. Although no state or local government requirements stipulate the use of an official Traffic Control Plan, the construction crew receives site-specific requests from the tribal authorities on how best to avoid impacting local transportation patterns. Generally, installation of FOC occurs within or next to existing roads, but no roads are blocked during operations and access to homes and businesses are maintained. During trenching, if access across the trench is needed, a piece of equipment is placed to bridge the trench. A spotter and cones are used to ensure safety by temporarily diverting vehicle or foot traffic around construction areas. These impacts would be temporary. Overall, there would be no substantial impacts to transportation. The Project would result in minor additional traffic as construction crews complete terrestrial FOC installation within each of the Project communities. The proposed action would not change local travel patterns or increase travel distances to access public facilities.

3.13.2.2 No Action Alternative

The no action alternative would have no impact on local transportation routes because there would be no increase in vehicle traffic nor any alteration to road access or traffic patterns.

3.14 Human Health and Safety

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

3.14.1.1 Affected Environment

GCI operates limited cellular and microwave facilities in each of the communities served by the Proposed Action. Research into the potential human health effects with regard to electromagnetic radiation from cell towers and microwave towers is inconclusive.

3.14.1.2 Environmental Consequences

Non-powered cable would be deployed, which does not carry any electric current or cause any electromagnetic fields on the seafloor. Additionally, the proposed project would not construct any new cellular or microwave towers; therefore, this was not evaluated further.

3.14.2 Environmental Risk Management

NEPA requires all applicants for federal financial assistance to be reviewed for, among other things, any risks to health and safety. Environmental due diligence actions are related to hazardous substances and waste, and petroleum waste products – hereafter referred collectively as “hazardous materials.”

3.14.2.1 Affected Environment

Hazardous waste site databases are and managed by the DEC or the federal government and were reviewed to determine if any reported sites are within 1,500 ft of the FOC alignment, CLS,

or BMH. This search radius is based on DEC requirements for de-watering permits and approved contaminated sites management plan (CSMP) prior to construction. Only sites managed by DEC that have a status of "active" or institutional controls (IC)[1] are subject to this requirement.

DEC Contaminated Sites

The DEC contaminated sites mapper and database was reviewed and determined 28 active sites (one in Ouzinkie, three in Chignik Lake, and 24 in Cold Bay) and two IC sites (in Cold Bay) are within 1,500 ft of the Project (Table 15) and shown in Figure Set 4 (Appendix A) (DEC 2023). A detailed summary of each contaminated site is included in Appendix I.

Formerly Used Defense Sites

The USACE database was reviewed and identified two sites managed by the USACE under the Formerly Used Defense Sites (FUDS) program, which are also associated with two DEC-managed sites as identified in Table 13 (USACE 2023).

- Port Lions FUDS: The property was obtained from Wakefield Fisheries and included an existing 8 ft x 12 ft building. The Air Force added electronic equipment, towers mounted on a concrete base, and concrete guy anchors. The site was sold to to RCA Alaska Communications, Inc.
- Cold Bay FUDS: Fort Randall consists of 2,200 square miles (1,411,250 acres) on the Alaskan Peninsula between Bristol Bay to the north and the Pacific Ocean to the south. Department of Defense activity at Cold Bay began in the 1940s with a naval reservation and Air Force activity, and a distant early warning system in the 1950s. The runway is currently used by the Federal Aviation Administration as a stopover for aircraft traveling from the U.S. to Europe or Asia, and the DOT&PF owns and manages the airport.

Table 15: Contaminated Sites within 1,500 feet of the Proposed Project

Site Name	Hazard ID	Associated Community	Status	Approximate Distance to Project (ft)
City of Ouzinkie Former BIA Affairs Tank Farm	25768	Ouzinkie	Active	22
Chignik Lake Tribal Council Old TF	3786	Chignik Lake	Active	35
Chignik Lake ANTHC Water Line Upgrade	26533	Chignik Lake	Active	158
Chignik Lake Fuel Transfer	3787	Chignik Lake	Active	41
ADOT&PF Cold Bay Airport	2461	Cold Bay	Active	71
ADOT&PF Cold Bay Airport Abandoned Fire Station	27198	Cold Bay	Active	80
ADOT&PF Cold Bay Airport Sitewide PFAS	27764	Cold Bay	Active	485
ADOT&PF Cold Bay Airport Facility UST #1	26184	Cold Bay	Institutional Controls	35

[1] An IC is instituted when contamination remains above the established cleanup levels without an unacceptable risk to human health or the environment. Sites with ICs usually require coordination with ADEC if construction is on or immediately adjacent to the site boundary. ICs may also be implemented when contaminants remain after cleanup is completed to the extent practical.

ADOT&PF Cold Bay Airport Maintenance Facility AST	26185	Cold Bay	Active	35
AT&T Alascom Cold Bay ES & Camp	1038	Cold Bay	Institutional Controls	75
Cold Bay Frosty Fuel Return Pipeline Spill	1548	Cold Bay	Active	94
Cold Bay Frosty Fuel Tank Farm	1570	Cold Bay	Active	27
Cold Bay RRS POL Tank Farm (ST05)	2834	Cold Bay	Active	1,047
Cold Bay Fort Randall-E-West Runway[1]	2863	Cold Bay	Active	527
FAA Cold Bay Station Bldg 101	25688	Cold Bay	Active	126
FAA Cold Bay Station Bldg 102	25689	Cold Bay	Active	133
FAA Cold Bay Station Bldg 103	25690	Cold Bay	Active	87
FAA Cold Bay Station Bldg 104	25691	Cold Bay	Active	126
FAA Cold Bay Station Bldg 107	25692	Cold Bay	Active	62
FAA Cold Bay Station Bldg 139	25693	Cold Bay	Active	145
FAA Cold Bay Station Bldg 207	25694	Cold Bay	Active	14
FAA Cold Bay Station Bldg 208	25695	Cold Bay	Active	258
FAA Cold Bay Station Bldg 416	25697	Cold Bay	Active	723
FAA Cold Bay Station Bldg 601 Former ASTs	25698	Cold Bay	Active	2
FAA Cold Bay Station Bldg 601 Dry Well	25699	Cold Bay	Active	2
FAA Cold Bay Station Bldg 601 Floor Drains	25700	Cold Bay	Active	2
FAA Cold Bay Station Bldg 601 Gas Shed	25701	Cold Bay	Active	110
FAA Cold Bay Station Flight Service Station	26032	Cold Bay	Active	121
Peninsula Airways Cold Bay Airport Block 3 Lot 3B	26671	Cold Bay	Active	17
Cold Bay Frosty Fuels Tank Farm Dock Pipeline	26673	Cold Bay	Active	781
Cold Bay Fort Randall-Beach Seep[a]	2859	Cold Bay	Active	749

[1] FUDS site

3.14.2.2 Environmental Consequences

3.14.2.2.1 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.

DEC Contaminated Sites

A CSMP was developed for the Proposed Action with a focus on activities in Ouzinkie, Chignik Lake, and Cold Bay to outline the proposed strategies for handling potentially contaminated media during the project. The CSMP was submitted to DEC March 19, 2024, for approval prior to construction. Dewatering is not anticipated to occur either during installation of fiber or vaults as fiber can be laid in wet conditions and vaults can be moved to avoid wet conditions. All trenches will be backfilled with original soils. Ultimately, mitigation measures will effectively bypass any encountered groundwater issues and negate the need for any active dewatering processes.

Adherence to the CSMP would ensure that hazardous materials associated with DEC contaminated sites would have no significant effects on the Proposed Action because it would incorporate BMPs and hazard mitigation measures. The CSMP is included in Appendix I.

FUDS Sites

The Port Lions FUDS is closed and no FUDS work has been done in the area or is anticipated; while the Cold Bay FUDS site has the potential of unexploded ordinance on historical military sites and work under FUDS has not completed cleanup work in the project area (email communication Richard Ragle, Appendix I). Mitigation of potential encounters is achieved by incorporation of the "Recognize, Retreat, and Report" (3R) program into daily safety briefings (Appendix I). The Cold Bay Airfield includes gun emplacements near the project area which have not been investigated in the FUDS program. A 1944 Fire Control Installation Map of Cold Bay Harbor Defenses shows that there was a subterranean cable and a submarine cable along Project FOC routes. The Cold Bay- Fort Randall FUDS report is included in Appendix I. The Project would have no significant effect on FUDS sites because of avoidance and mitigation measures, and FUDS-related hazards would have no significant effect on the Proposed Action because of mitigation through the 3R program.

3.14.2.2.2 No Action Alternative

The no action alternative would not involve dewatering or soil-disturbing activities; therefore, there would be no effect on, and no effect from, hazardous waste because there is no risk of encountering contamination from off-site sources.

4 CUMULATIVE EFFECTS

The cumulative effects assessment considers the effects of the proposed action in combination with the effects of past, present, and reasonably foreseeable future actions (RFFAs) (Table 13). 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 a project for which there is an existing proposal, a project currently in the NEPA process, or a project to which resources have been committed (such as funding).

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. All RFFAs are listed in Table 16.

Table 16: Reasonably Foreseeable Future Actions That May Cause Cumulative Impacts

Project Name	Community	Description	Status
Electric Distribution System[1]	Ouzinkie	Direct burial concentric neutral 7,200-volt power lines	Not started
Alternative Energy Wind Generation[1]	Ouzinkie	Addition of wind power to Spruce Island in an area with high potential for wind generation	Not started
Dock Infrastructure Replacement[2]	Cold Bay	Construction of a new dock	Survey and Design
Airport Improvement Project[3]	False Pass	Proposed airport reconstruction with a longer runway	Proposed
AU-A	Marine	marine mammal effects	Present

[1] City of Ouzinkie Capital Improvement Project List FY 2019-2024
[2] Alaska Senator Lisa Murkowski press release 10.31.23
[3]Aleutians East Borough Projects

4.1 Wetlands

The Project would not contribute significantly to cumulative impacts on wetlands for the following reasons: 1) impacts from all communities would result in less than 1 acre 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.

4.2 Biological Resources

4.2.1 Marine Mammals

The project would contribute to cumulative effects through an incremental increase in disturbance and displacement due to project-related 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 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.

4.2.2 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 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. Re-vegetation of disturbed areas will occur as soon as practicable with local and native species.
    ii. If a suspected military munition is encountered, the FUDS safety guide (3Rs of Explosives Safety) will be followed (Appendix I).
    iii. 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 CWA, Section 307).
    iv. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.
    v. Heavy equipment working in wetlands or mudflats must be placed on mats.
    vi. A SWPPP, when needed, would be developed to outline appropriate soil erosion and sediment controls to be used and maintained in effective operating condition during construction.
    vii. All exposed soil and other fills, as well as any work below ordinary high water mark or HTL, will be permanently stabilized at the earliest practicable date. When possible, work within WOTUS will be performed during periods of low flow or no flow, or during low tides.
    viii. 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.
    ix. The activity is to be properly maintained to ensure public safety and compliance with NWP general conditions.
    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. Fish Habitat Mitigation Measures
    i. All instream activity below MHW in the Chignik River shall be conducted from June 1 to July 7, 2024, or June 1 to June 30, 2025
    ii. Vehicles and equipment shall not be fueled or services below MHW in the Chignik River; and vehicles with fuel, oil, or hydraulic fluid leaks, shall not be operated or moved by the river.
    iii. The ADF&G Habitat Section must be contacted by phone (907-267-2805) or emailed (jeanett.alas.@alaska.gov) at lease three days prior to beginning permitted activities.
3. USACE NWP Regional Conditions

i. Trenches may not be constructed or backfilled in such a manner as to drain WOTUS (e.g., backfilling with extensive gravel layers to create 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).

4. Mitigation and Commitments Specific to NMFS and USFWS per the ESA:
    i. During cable-laying operations, it is unsafe to stop activities; therefore, there are no shut down procedures for this project. PSOs will observe a 1,500-m (4,921-ft.) monitoring zone and report sightings to NMFS.
    ii. Prior to the start of cable-laying operations, or when activities have been stopped for longer than a 30-minute period, PSOs will clear the 1,500-m (4,921-ft.) monitoring zone for a period of 30 minutes when activities have been stopped for longer than a 30-minute period. 1,500 m (4,921 ft.) is the distance to which NMFS generally agrees PSOs can adequately observe the smaller marine mammals. Clearing the zone means no marine mammals have been observed within the zone for that 30-minute period. If a marine mammal is observed in the zone, activities may not start until:
        a. It is visually observed to have left the zone or
        b. Has not been seen within the zone for 15 minutes in the case of pinnipeds, sea otters, and harbor porpoise, or
        c. Has not been seen within the zone for 30 minutes in the case of cetaceans.
    iii. Any sightings of sea otters within 157 feet would be reported to USFWS within 24 hours.
    iv. Consistent with safe navigation, project vessels will avoid travelling within 5.6 km (3 nm) of any of Steller sea lion rookeries or major haulouts (to reduce the risks of disturbance of Steller sea lions and collision with protected species).

v. If travel within 5.6 km (3 nm) of major rookeries or major haulouts is unavoidable, transiting vessels will reduce speed to 16.6 km/hour (9 knots) or less while within 5.6 km (3 nm) of those locations. Vessels laying cables are already operating at speeds less than 5.6 km/hour (3 knots).

vi. Vessels will not allow tow lines to remain in the water, and no trash or other debris will be thrown overboard, thereby reducing the potential for marine mammal entanglement.

vii. The transit route for the vessels will avoid known Steller sea lion BIAs and designated critical habitat to the extent practicable.

viii. Vessels may not be operated in such a way as to separate members of a group of marine mammals from other members of the group.

ix. Vessels should take reasonable steps to alert other vessels in the vicinity of whale(s), and report any stranded, dead, or injured ESA-listed whale or pinniped to the Alaska Marine Mammal Stranding Hotline at 877-925-7773.

x. Vessels will not transit within North Pacific right whale critical habitat.

xi. Vessel operators will be instructed to operate their vessel thrusters (both main drive and dynamic positioning) at the minimum power necessary to accomplish the work, to reduce potential acoustic disturbance.

xii. Artificial lighting will be reduced or shielded so it is not projected skyward to reduce attracting birds.

xiii. Although take is not authorized, if an ESA-listed marine mammal is taken (e.g., struck by a vessel), it must be reported to NMFS within 24 hours. The following will be included when reporting take of an ESA-listed species:

   a. Number of ESA-listed animals taken.
   b. The date, time, and location of the take.
   c. The cause of the take (e.g., vessel strike).
   d. The time the animal(s) was first observed and last seen.
   e. Mitigation measures implemented prior to and after the animal was taken.
   f. Contact information for PSOs, if any, at the time of the collision, ship's Pilot at the time of the collision, or ship's Captain.

xiv. Unicom will have contracted two PSOs (one on watch at a time) on the cable laying ship. A PSO will be on watch during all daylight hours. Cable-laying activities will take place 24 hours per day in the summer. PSOs will:

   a. be trained in marine mammal identification and behaviors.
   b. have no other primary duty than to watch for and report on events related to marine mammals.
   c. work in shifts lasting no longer than 4 hours with at least a 1-hour break between shifts and will not perform duties as a PSO for more than 12 hours in a 24-hour period (to reduce PSO fatigue).
   d. have the following to aid in determining the location of observed ESA-listed species, to act if ESA-listed species enter the 1,500-m (4,921-ft.) monitoring zone, and to record these events:
      - Binoculars, range finder, GPS, compass
      - Two-way radio communication with construction foreman/superintendent

- A logbook of all activities which will be made available to NMFS upon request.

e. record all marine mammals observed using NMFS-approved observation forms. Sightings of North Pacific right whales will be transmitted to NMFS within 24 hours. These sighting reports will include:

- Species, group size, age/size/sex categories (if determinable), behavior when first sighted and after initial sighting, heading (if consistent), bearing and distance from the PSO, apparent reaction to activities (e.g., none, avoidance, approach, paralleling, etc.), closest point of approach, and behavioral pace.
- Time, location, speed, activity of the vessel, sea state, ice cover, visibility, and sun glare.
- The positions of other vessel(s) in the vicinity of the PSO location.
- The vessel's position, speed, water depth, sea state, ice cover, visibility, and sun glare will also be recorded at the start and end of each observation watch, every 30 minutes during a watch, and whenever there is a change in any of those variables.

xv. Because sightings of North Pacific right whales are uncommon, and photographs that allow for identification of individual whales from markings are extremely valuable, photographs will be taken if feasible, but in a way that does not involve disturbing the animal (e.g., if vessel speed and course changes are not otherwise warranted, they will not take place for the purpose of positioning a photographer to take better photos). Any photographs taken of North Pacific right whales will be submitted to NMFS.

xvi. Reports will be sent to NMFS on a weekly and monthly basis during active in-water work. An end-of-season report will be sent to NMFS summarizing the sightings and activities.

xvii. The results of the surveys will be used to minimize the extent to which trenching is necessary, thereby reducing impact on marine mammal habitat.

xviii. To avoid impacts to sunflower sea stars, the following measures would be implemented

a. Prior (but no later than 24 hours) to hand-jetting, a sunflower sea star survey would be conducted to determine if any individuals are present and within the FOC alignment. Surveyors would systematically examine all substrate surfaces through transects along isobaths, with 2 m separation between each transect line, until the area that will be covered with fill is surveyed. Surveys may be done on foot at low tide or by divers or an ROV for areas where the substrate is not visible by foot during low tide.

b. Any sunflower sea stars found will be gently moved into a container of water collected at the site and taken to a location away from the area to be filled (or dredged, modified/disturbed) and gently released onto the substrate. Individuals will be held in a nylon net within a bucket of the water for no more than 10 minutes. The number and approximate diameter of sunflower sea stars moved will be recorded and reported to NMFS

c. If it appears that a sunflower sea star has sea star wasting syndrome or if any dead sunflower sea stars are observed, take pictures of the individuals and count how many appear to be infected, but do not touch or move these individuals.

5. 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.

6. Mitigation and Commitments Specific to the Programmatic Agreement executed under Section 106 of NHPA

a. Per the PA, 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 National Register of Historic Places (NRHP), in consultation with SHPO.

ii. 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.

iii. 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

7. Mitigation and Commitments Specific to the CSMP

i. Construction personnel will make visual and olfactory observations of stockpiled material to determine whether contamination is present. If contamination is encountered, vaults will be moved to avoid it and construction supervisor will notify the Unicom project manager immediately and the Unicom project manager will notify ADEC CSP office (907-269-7503). Unicom will relay all available information to the ADEC including suspected contamination based on visual and olfactory observations (petroleum/non-petroleum), address or GPS coordinates of excavation where contaminated soil was encountered approximate volume of excavated contaminated soil, and depth that contamination was encountered within the trench.

ii. Following notification, the ADEC may grant approval for petroleum-contaminated soil to be returned to trench so long as the following conditions outlined in the "Leaving or Returning Contaminated Material to the Excavation" section of the 2018 Tech Memo are met (DEC 2017).

6 CONSULTATION AND CORRESPONDENCE

A large outreach effort was conducted from 2017-2021 across southwestern Alaska and the Aleutian chain to support the AU-A project, which is detailed in Appendix A. Additional outreach conducted since 2022 is summarized in this chapter.

6.1 Stakeholder Communication

Public outreach was conducted through the following methods

- Newsletters and Press Releases
    - An e-newsletter update is regularly sent to key stakeholders in each project community
    - More than 13 press releases specific to the Proposed Action have been issued in 2023.
    - GCI hosts a project specific website: https://www.gci.com/aleutianfiberproject
- Virtual meetings
    - Bi-monthly virtual meetings for municipal and tribal leaders from all communities in this project.
    - May 11, 2023: Virtual event with Ouzinkie stakeholders.
    - June 29, 2023: Virtual meeting with stakeholders in Port Lions
    - July 11, 2023: Virtual meeting with stakeholders in Chignik Lagoon.
    - September 14, 2023: Virtual meeting with stakeholders from all Aleutian project communities.
    - October 2023: Presented at virtual Kodiak Archipelago Leadership Association.
    - December 14, 2023: Hosting virtual meeting with stakeholders from all Aleutian project communities.
    - February 22, 2024: Virtual event with Ouzinkie stakeholders.
- Site Visits and Calls
    - April 19, 2023: Had a call with Tribal admin of Ouzinkie coordinating a stakeholder meeting with Native Village of Port Lions.
    - June 26, 2023: Project engineer met with elders in Chignik Lagoon.
    - July 2023: Project team visit to Port Lions
    - August 2023: Roundtable event in Kodiak
    - September 16, 2023: Meeting with stakeholders in Port Lions including all Tribal members.
- Conferences
    - The project was presented at multiple regional organization gatherings and meetings where take stakeholder feedback was solicited using information tables and/or presentations, including the following:

- Alaska Federation of Natives (Oct 18-20, 2023): In addition to having an information booth, GCI had a special reception for the project on closing night for residents who live in communities served by the Proposed Action
- Southwest Alaska Municipal Conference (March 2023): GCI had a booth and presentation

- Other
  - Tribal resolutions were obtained from all communities as well as letters of support from municipalities, boroughs, businesses, health care organizations, nonprofit organizations, and Alaska Native Corporations (both village and regional).

6.2 Agency Consultation

Table 17 summarizes relevant communication with representatives from federal, state, local entities and correspondence with other interested stakeholders.

Table 17: Summary of Agency Coordination Contacts

Entity	Regulatory Responsibility	Representative	Response	Correspondence
DEC	Contaminated Sites	Bill O'Connell, Alena Voigt, Alyssa Wood	Information related to groundwater in Cold Bay and site-specific information about contaminated sites within 1,500 of the project	Emails included in Appendix J
ADF&G	Fish habitat/ fisheries	Jeanette Alas/ Tyler Polum/Carl Burnside	Guidance on Title 16 permit requirements	Emails included in Appendix J
USFWS	Endangered Species Act (Marine Impacts)	Doug Cooper	Confirmation that a revised Biological Assessment would suffice	Email included in Appendix J
USFWS	Alaska Maritime National Wildlife Refuge	Jeff Williams	Provided maps of areas to avoid	Email included in Appendix J
NMFS	Marine Mammal Protection Act and Endangered Species Act	Greg Balough, Lead Davis, Bonnie Easley-Appleyard	No IHA needed	Email included in Appendix J
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	Nicholas Baggett	Permitting Project Manager (October 2023 – May 2024)	Included in Appendix C
USACE	FUDS	Richard Ragle	Provided guidance on FUDS in Cold Bay	Email included in Appendix I

Notes: 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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7 REFERENCES

ACDCED 2023. Alaska Department of Community, Commerce, and Economic Development, Division of Community Affairs https://dcced.maps.arcgis.com/apps/webappviewer.

AKEPIC. 2023. Alaska Center for Conservation Science; Non-Native Plant Data Portal. Accessed October 17, 2023: https://aknhp.uaa.alaska.edu/

ADF&G. 2024. Birds. Retrieved from Alaska Department of Fish and Game. Accessed March 6, 2024: https://www.adfg.alaska.gov/index.cfm?adfg=animals.listbirds

Alaska Department of Transportation & Public Facilities. 2019. Bald Eagle Nesting During Construction. April 2021.

Alaska Office of History and Archaeology. 1977. Archaeological Survey Projects, 1977. Miscellaneous Publications History and Archaeology Series No. 18. Report available on file at the Alaska Office of History and Archaeology, Anchorage offices.

- 2023. Alaska Heritage Resources Survey. Alaska Heritage Resources Survey Portal. Anchorage, Alaska: Department of Natural Resources. Restricted online database.

Aleutians East Borough. 2021. Aleutians East Borough (including the Cities of Akutan, King Cove, False Pass, and Sand Point, and the Native Village of Nelson Lagoon) Multi-Jurisdictional Hazard Mitigation Plan Update. Prepared by the AEB Mitigation Planning Team in Collaboration with LeMay Engineering & Consulting, Inc. November 2021.

ASRC Energy Services.2016.Cultural Resources Monitoring Report Water and Sewer System Upgrades Chignik Lake, Alaska. Written for the Alaska Native Tribal Health Consortium. Report available on file at the Alaska Office of History and Archaeology, Anchorage offices.

Audubon. 2024. Guide to North American Birds. Accessed March 6, 2024: https://www.audubon.org/bird-guide

Batary, P. 2004. Evidence of Edge Effect on Avian Nest Success. Conservation Biology, Volume 18 No. 2, pp 389-400 April 2024.

Black, Lydia, Richard A. Pierce, Katherine L. Arndt, and Sarah McGowan. 1999. The History and Ethnohistory of the Aleutians East Borough. Vol. no. 49.;no. 49;. Kingston, Ont; Fairbanks, Alaska; Limestone Press.

BLM. 2023. BLM National Data map viewer. Last accessed October 5, 2023: https://blmegis.maps.arcgis.com/apps/webappviewer/index.html?id=6f0da4c7931440a8a80bfe20eddd7550

BroadbandNow. 2023. Internet Providers. https://broadbandnow.com/. Accessed on October 1, 2023.

CEQ. 1997. Considering Cumulative Effects under the National Environmental Policy Act. Washington, D.C.

Chignik Lagoon Village Council. 2016. Community Development Strategic Plan. Prepared by the Chignik Lagoon Village Council with a Community Development Planning Grant from the Bristol Bay Native Association. March 2016

City of Cold Bay. 2022. Local Hazard Mitigation Plan.

City of Port Lions. 1997. Port Lions Comprehensive Development Plan. Prepared for The City of Port Lions (Originally adopted January 1982) and revised by the Kodiak Island Borough Community Development Department. November 1997.

City of Port Lions. 2003. Port Lions Comprehensive Community Plan. Prepared with assistance by the Kodiak Island Housing Authority & Alisha Drabek. June 18, 2003

Clark, Donald W. and Frederick Milan. 1974. Koniag Prehistory- An Archaeological Investigation at Late Prehistoric Sites on Kodiak Island, Alaska. Verlag W. Kohlhammer GmbH, Berlin, Germany.

Cooper, Doreen C., Mark Cassell, and Adam Cox. 2015. Archaeological Monitoring for Sanitation Facilities Construction, Chignik Lake, Alaska, 2014. Written by Territory Heritage Resource Consulting for the Alaska Native Tribal Health Consortium. Report available on file at the Alaska Office of History and Archaeology, Anchorage.

Cornell Lab. (2024, March). Cornell Lab All About Birds. Accessed March 6, 2024: https://www.allaboutbirds.org/guide/

Davis, Richard, and Richard Knecht. 2010. Continuity and change in the eastern Aleutian archaeological sequence. Human Biology 82(5- 6):507-524.

DEC. 2017. Managing Petroleum-Contaminated Soil, Water, or Free Product during Public Utility and Right-of-Way Construction and Maintenance Projects.

DEC. 2023. Division of Spill Prevention and Response: Contaminated Sites Database. Accessed November 28, 2023

DEC. 2024a. Air Pollution in Alaska Communities. Air Non-Point & Mobile Sources. Accessed February 5, 2024: https://dec.alaska.gov/air/anpms/communities/

DEC. 2024b. Rural Communities-Dust. Air Non-Point & Mobile Sources. Accessed February 5, 2024: https://dec.alaska.gov/air/anpms/communities/pm10-rural/

Dixon, Greg. 1977. Archaeological Reconnaissance of the Unalaska Amaknak Bridge Project. Manuscript on file, Alaska Division of Parks, Office of History and Archaeology, Anchorage.

DNR. 2023(a). Alaska Mapper. Last Accessed October 5, 2023: https://mapper.dnr.alaska.gov/

DNR. 2023(b). Recorder's Office. Last Accessed October 5, 2023: https://dnr.alaska.gov/ssd/recoff/search/

DOT&PF. 2008. Fase Pass Airport Master Plan Environmental Assessment. June 2008. DOT&PF Project 56614

DOWL HKM. 2012. Geotechnical Exploration: Cold Bay Airport Improvements Project. Cold Bay, Alaska. Project No. 51942. Prepared for DOT&PF.

Dumond, Don. 1975. Archaeological Research on the Alaska Peninsula, 1975. Department of Anthropology, University of Oregon, Eugene, Oregon. December 15, 1975.

EPA. 2023. EJSCREEN: Environmental Justice Screening and Mapping Tool. Accessed October 17, 2023: https://www.epa.gov/ejscreen

Gallant, A.L., E.F. Binnian, J.M. Omernik, and M.B. Shasby. 1995. Ecoregions of Alaska. US Government Printing Office. https://pubs.usgs.gov/pp/1567/report.pdf.

Gillispie, Thomas E. 2018. An Overview of Alaskan's Prehistoric Cultures. Office of History and Archaeology Report 173. Anchorage, AK.

Guinn, Jeremy E. 2013. Generational Habituations and Current Bald Eagle Populations. April 2021.

Hanson, Diane and K. Flemming. 2007. Archaeological Survey Of Two Alternatives For A Wastewater Outfall At False Pass, Unimak Island, Alaska, Written For The City Of False Pass.

Jones, Dorothy Miriam. 1970. A Study of Social and Economic Problems in Unalaska, an Aleut Village. Ph.D. Dissertation, Department of Social Work. University of California, Berkley.

Knecht, Richard and Richard Davis. 2001.Prehistoric Sequence for the Eastern Aleutians. In Archaeology in the Aleut Zone of Alaska, Don Dumond, editor, pp 269-288. University of Oregon Anthropological Papers No. 58. Eugene.

Kodiak Island Borough. 2018. Multi-Jurisdictional Hazard Mitigation Plan Update. May 2018

Kopperl, Robert. 2003. Cultural complexity and resource intensification on Kodiak Island, Alaska. PhD Dissertation, University of Washington.

Maschner, Herbert. 2004. Traditions Past and Present: Allen McCartney and the Izembek Phase of the Western Alaska Peninsula. Arctic Anthropology, Vol. 41, No. 2, pp. 98-111.

McCartney, Allen P.1971. Proposed Western Aleutian Phase in the Near Islands, Alaska. Arctic Anthropology 8(2):92-142. University of Wisconsin Press.

- 1984. Prehistory of the Aleutian Region. In Handbook of North American Indians. David Damas, editor. Vol 5. Arctic, 119-137. Smithsonian Institution Press, Washington, D.C.

Merculieff, Ilarion. 2016. Wisdom Keeper: One Man's Journey to Honor the untold History of the Unangan People, Published by North Atlantic Book Berkley California.

National Association of Wetland Managers. 2024. FAQs: Wetland Mapping and the NWI: A Fact Sheet for Tribal Wetland Programs. Accessed March 26, 2024: https://nawm.org/pdf_lib/tribal_wp/faqs_wetland_mapping_and_the_nwi.pdf

Native Village of Chignik Lagoon. 2019. Native Village of Chignik Lagoon Tribal Hazard Mitigation Plan: 2019-2024. Prepared by Bristol Bay Native Association . August 2019.

Native Village of Chignik Lake. 2019. Native Village of Chignik Lake Tribal Hazard Mitigation Plan: 2019-2024. Prepared by Bristol Bay Native Association. August 2019.

NOAA. 2020. Fisheries of the United States; Current Fishery Statistics No. 2018. February 2020

Pewe, T. (1975). Quaternary Geology and Alaska. U.S. Department of the Interior.

Rozak, Ronald T. 1992. Site Assessment: Chignik Lake Switch Gear Station. Prepared for PTI Communications, Inc. August 10, 1992.

Saltonstall, Patrick G., and Amy F. Steffian. 2006. The Archaeology of Horseshoe Cove: Excavations at KOD-415, Uganik Island, Kodiak Archipelago, Alaska. Alaska Region Occasional Papers in Alaskan Field Archaeology. US Department of the Interior, Bureau of Indian Affairs. Office of Regional Archaeology, Anchorage.

Tennessen, David Charles. 2009. Stone Tools and Behavioral Ecology on Alaska's Katmai Coast. Ph.D. dissertation, Department of Anthropology, University of Minnesota

Tozzi, Nicole and Daniel Thompson. 2012. Cultural Resource Investigation of the Chignik Lake Airport Resurfacing DOT&PF Project #54193, OHA Short Report-2012-01. Written for the Alaska Office of History and Archaeology. Report available on file at the Alaska Office of History and Archaeology, Anchorage offices. University of Alaska. 2018. Wetlands across Alaska: Statewide wetland map and Assessment of rare wetland ecosystems. Alaska Natural Heritage Program. December 11, 2018

USGS. 2024. Geologic Map of Alaska. Alaska Resource Data File. Accessed February 7, 2024: https://alaska.usgs.gov/science/geology/state_map/interactive_map/AKgeologic_map.html

USACE. 2023a. FUDS Geographic Information System. Accessed November 28, 2023: https://www.usace.army.mil/Missions/Environmental/Formerly-Used-Defense-Sites/FUDS-GIS/

USACE. 2023. Cold Bay – Fort Randall; Formerly Used Defense Sites Program Management Action Plan Published by: U.S. Army Corps of Engineers, Environmental Programs Data as of 2021 Annual Report to Congress. Accessed October 5, 2023: fudsportal.usace.army.mil/ems/inventory/map?id=62163

USACE. 2024. Flood Risk Management Resources, Glossary; Alaska District Website. Accessed February 8, 2024: https://www.poa.usace.army.mil/About/Offices/Engineering/Floodplain-Management

USDA. 2004. Land Resource Regions and Major Land Resource Areas of Alaska. Natural Resources Conservation Service. October 2004.

U.S. Department of Commerce. 1984. Outer Continental Shelt Environmental Assessment Program. National Oceanic and Atmospheric Administration, National Ocean Service, Office of Oceanography and Marine Assessment, Ocean Assessments Division, Alaska Office.

U.S. Department of Transportation. Anton Larsen Bay Road Extension; Kodiak Island Borough, Alaska Environmental Assessment. AK TR OUZi 2017(1). December 2019

USFWS. 2023a. National Wetlands Inventory 2023 Report by Alaska Regional Wetlands Coordinator. Prepared for the Alaska Wetlands Working Group. December 6, 2023.

USFWS. 2023b. Documented Eagle Nest Sites. Accessed: October 11, 2023: https://data-seakgis.opendata.arcgis.com/datasets/documented-eagle-nest-sites?geometry=170.225%2C58.074%2C-131.460%2C65.327vc

USFWS. 2024. National Wetlands Inventory Mapper. Accessed: February 8, 2024: https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/

Wahrhaftig, C. (1965). Physiographic Division of Alaska. Geologic Survey Professional Paper, 34-40.

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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 II Environmental Assessment

Name	Agency	Role	Profession
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