

Appendix A – Figures

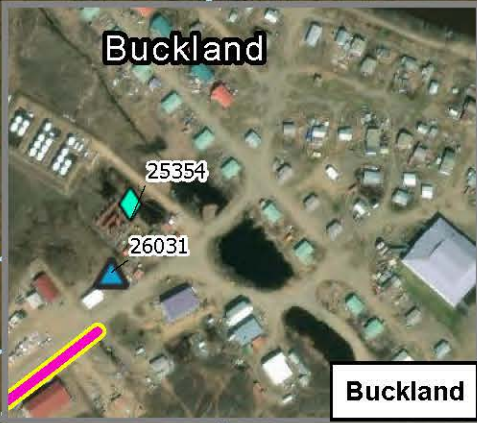
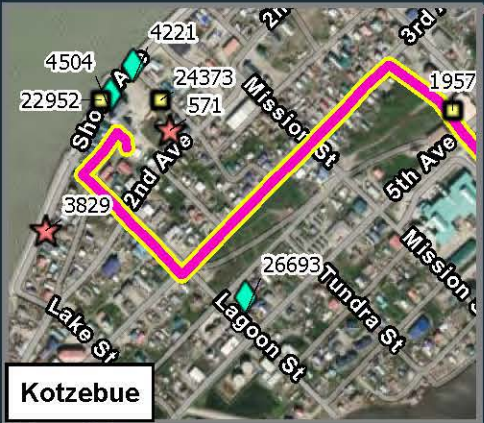
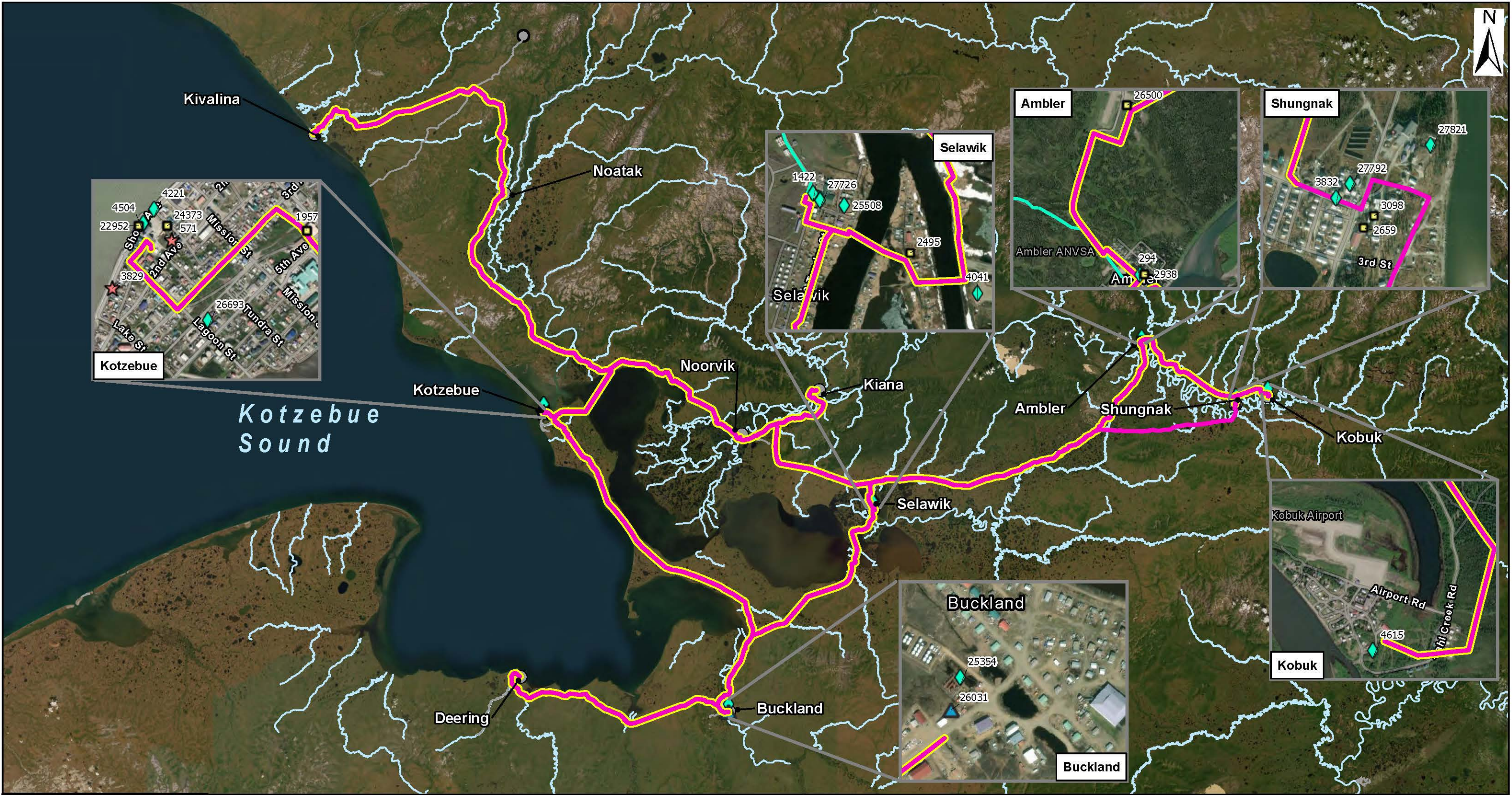


Legend		
— Alternative 1	Land Ownership	 Fish and Wildlife Service
— Alternative 2		 National Park Service
● Fiber Mile Markers (10 Mile Intervals)	 Native Lands	— Major Streams & Rivers
● Community	 Bureau of Land Management	

Notes:

1. Coordinate system is NAD 1983 Alaska Albers, Unit: Meters
2. Background imagery is from AGC Imagery, 2020.
3. Stream data is from USGS National Hydrography Dataset (NHD).
4. Land boundaries originate from the Surface Management Agency (SMA) layer available through the Bureau of Land Management's (BLM) Spatial Data Management System (SDMS).

Project Overview Map	
NANA Regional Broadband Network Project	
Date: 10/6/2025	FIGURE 1
Scale: 1:1,250,000 1 inch equals 20 miles	



Legend			Contaminated Sites Map	
Legend Alternative 1 (Magenta line) Alternative 2 (Yellow line) Major Streams and Rivers (Blue line) Cleanup Complete (Yellow square) Cleanup Complete - Institutional Controls (Red star) Informational (Blue triangle) Community (Grey circle) ADOT Roads (Grey line) Contaminated Sites Active (Magenta diamond) Cleanup Complete (Yellow square)			Contaminated Sites Map NANA Region Middle Mile Fiber Optic Project Date: 10/6/2025 Scale: 1:1,250,000 1 inch equals 20 miles FIGURE 3.1.2-1	

0 15 30 60 Miles

Notes:
1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. Stream data is from Alaska Department of Fish and Game (ADF&G) & USGS National Hydrography Dataset (NHD)
4. Anadromous Waters Catalog (AWC) is created by and updated by the Alaska Department of Fish and Game.



Legend

Alternative 1

Alternative 2

Major Streams & Rivers

Soil Erodibility Factor

0-0.10

0.11-0.20

0.21-0.30

0.31-0.39

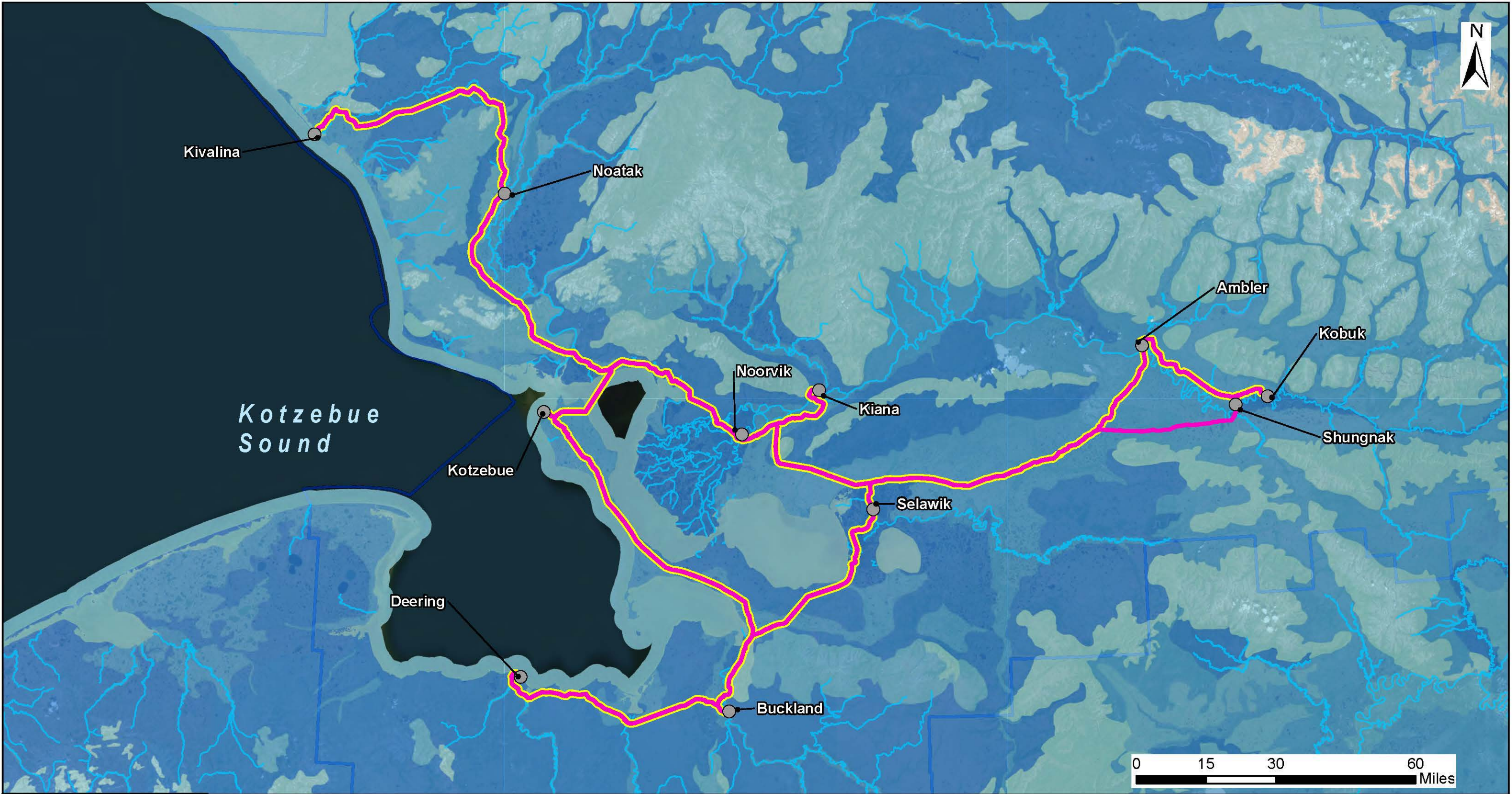
0.40-0.49

0.50-0.64

Community

Notes:
1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. The soil erodibility factor (K factor) is one of five components used in the Universal Soil Loss Equation (USLE), which quantifies how susceptible soil particles are to detachment and transport by water. The U.S. Department of Agriculture (USDA) utilizes the K factor in identifying highly erodible lands, with mapped values typically incremented at 0.10 K units to reflect varying degrees of soil vulnerability across landscapes.

Soil Erodibility		
NANA Regional Broadband Network Project		
Date: 10/6/2025		FIGURE 3.1.3-1
Scale: 1:1,250,000 1 inch equals 20 miles		



Legend

Alternative 1

Alternative 2

Community

Northwest Arctic Borough Boundary

Soil Hydric Class

Not Hydric

Partially Hydric (1 - 25%)

Partially Hydric (26 - 50%)

Mostly Hydric (51 - 75%)

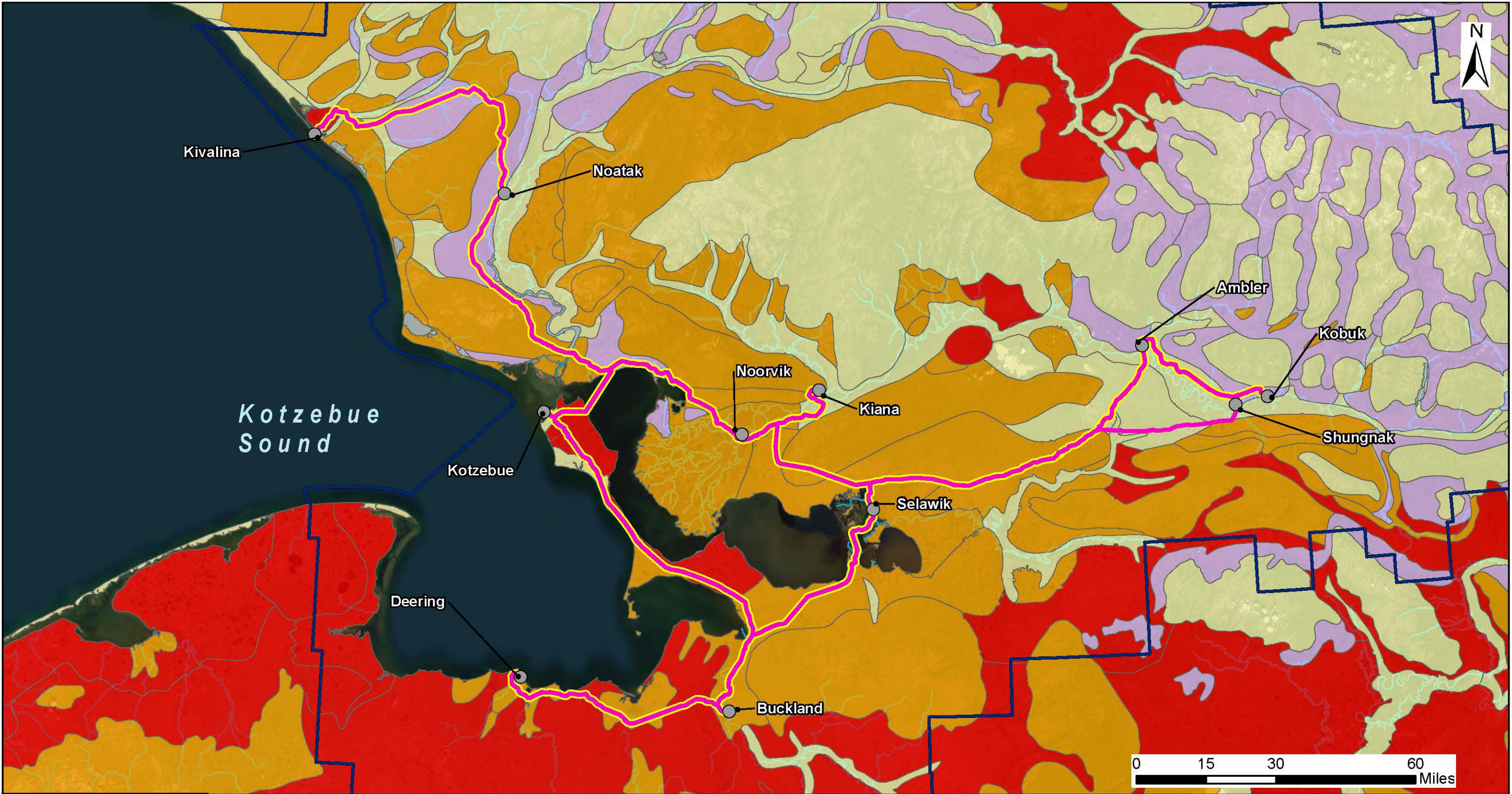
Mostly Hydric (76 - 95%)

All Hydric

Major Streams & Rivers

Notes:
1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. This layer was created using data from the National Gridded Soil Survey Geographic (gNATSGO) database, derived from 30-meter resolution rasters produced by the NRCS. It displays the presence of hydric soils based on the gSSURGO field Hydric Classification Presence (hydclprs), shown as a percentage per map unit. Hydric soils develop under prolonged saturation or flooding conditions.

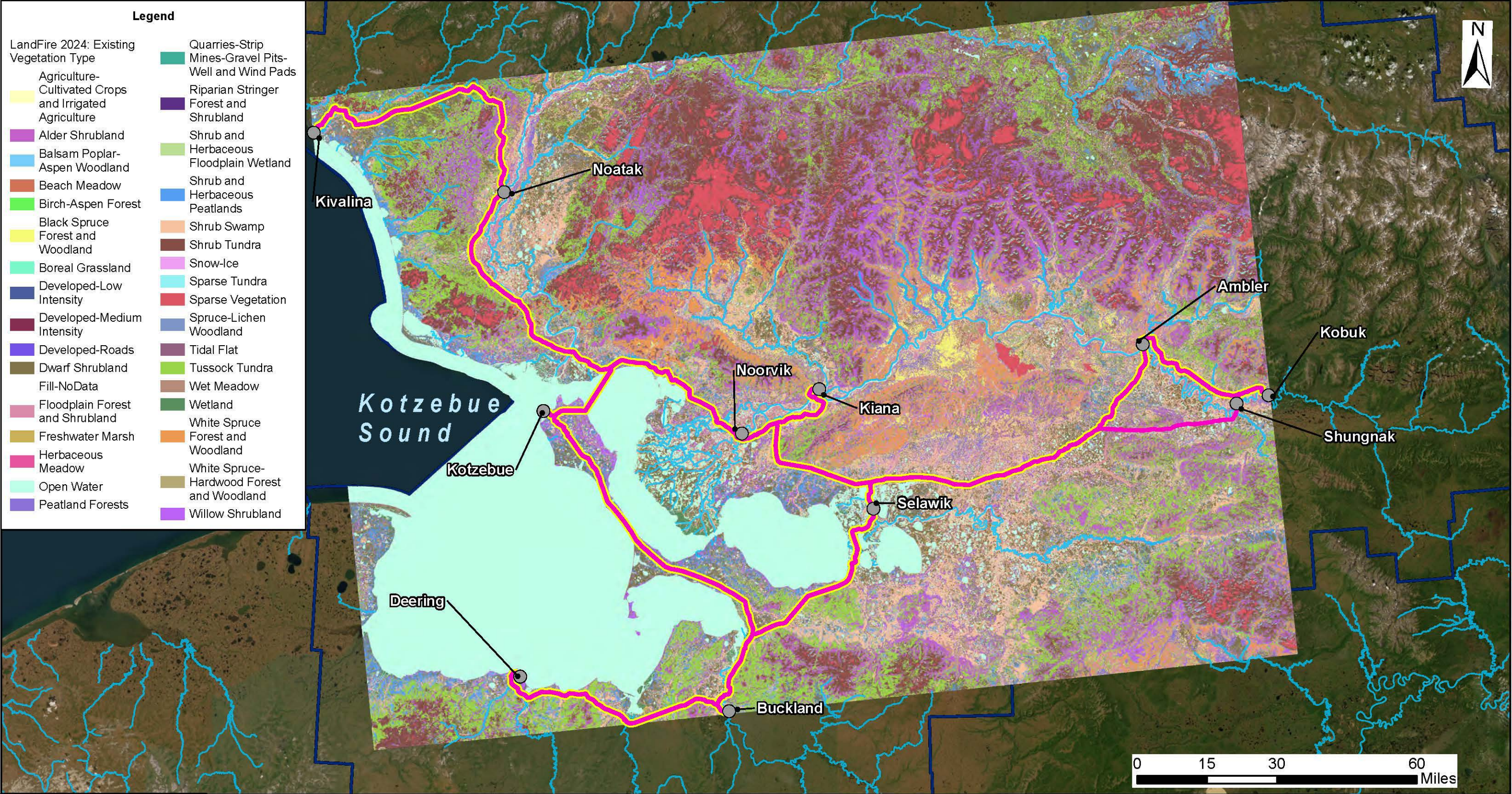
Soil Hydric Class		
NANA Regional Broadband Network Project		
Date: 10/6/2025		FIGURE 3.1.3-2
Scale: 1:1,250,000 1 inch equals 20 miles		



- Legend**
- Alternative 1 (pink line)
 - Alternative 2 (yellow line)
 - Northwest Arctic Borough Boundary (blue outline)
 - Community (black dot)
 - Ground Ice Volume
 - Variable (purple)
 - High (<40%) (red)
 - Moderate (10-40%) (orange)
 - Low (<10%) (light yellow)
 - Unfrozen (grey)
 - Major Streams & Rivers (blue line)

Notes:
1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. Data refers to access ice in the top 5 meters of the soil.
Jorgenson, M. T., M. Kanevskiy, Y. Shur, J. Grunblatt, C.-L. Ping, and G. Michaelson. 2015. Permafrost database development, characterization, and mapping for northern Alaska. Final report prepared for U.S. Fish and Wildlife Service, Anchorage, AK. June 2015.

Ground Ice Content	
NANA Regional Broadband Network Project	
Date: 10/6/2025	FIGURE 3.1.3-3
Scale: 1:1,250,000 1 inch equals 20 miles	



Notes:
1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. LandFire (2024). Existing Vegetation Cover.
U.S. Department of Agriculture, Forest Service; U.S. Department of the Interior.

LandFire 2024 Existing Vegetation Type	
NANA Regional Broadband Network Project	
Date: 10/6/2025	FIGURE 3.2.1-1
Scale: 1:1,250,000 1 inch equals 20 miles	



- Legend**
- Alternative 1
 - Alternative 2
 - Northwest Arctic Borough Boundary
 - Community
 - Major Streams & Rivers
 - Height of Woody Vegetation >0.2 meters (8 in)

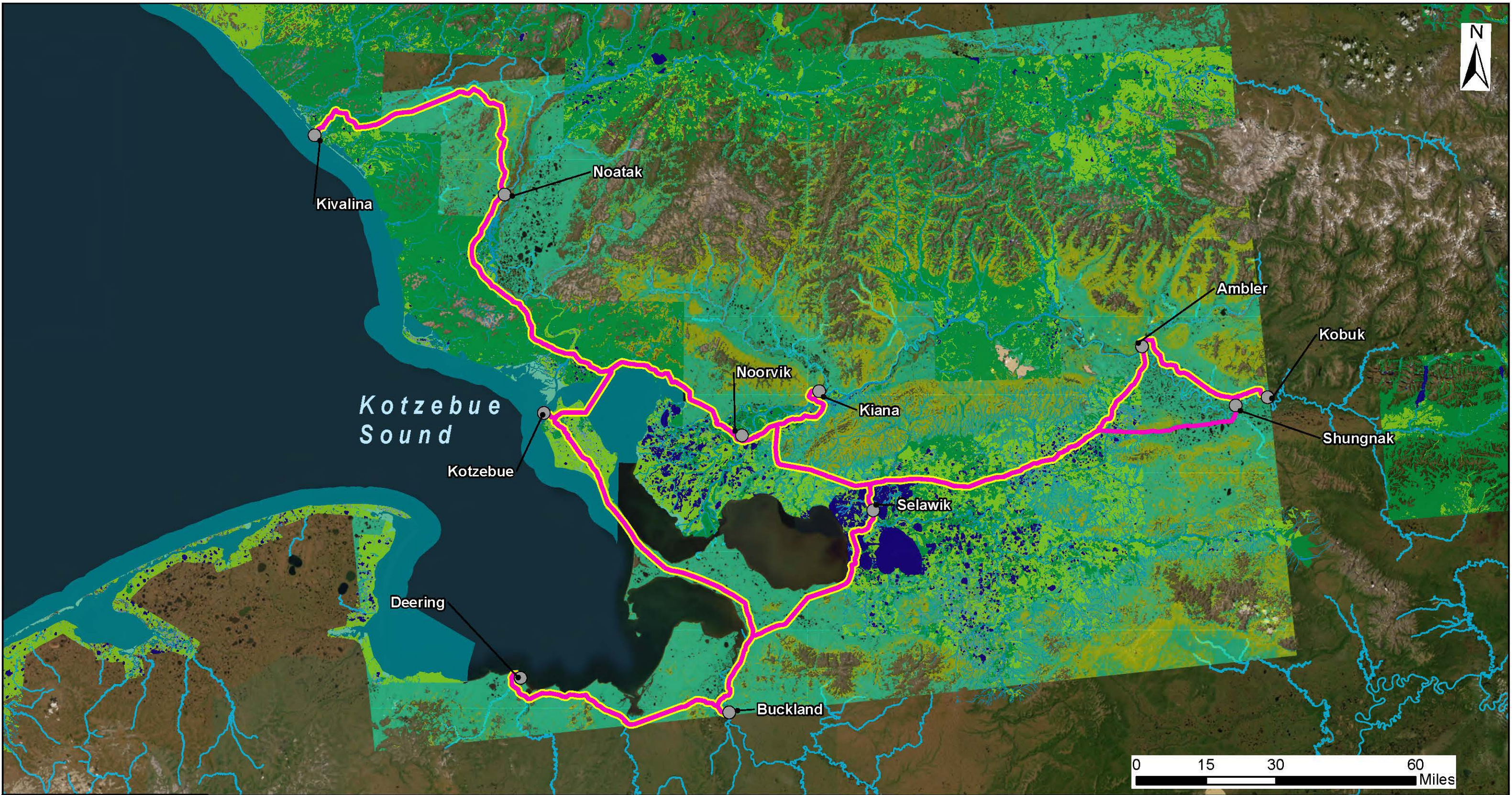
Notes:
1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. LANDFIRE (2024) Existing Vegetation Height, which provides spatial data on average plant canopy height across the landscape.

Areas Where Mechanical Clearing of Vegetation may be Required
NANA Regional Broadband Network Project

Date:
10/6/2025

Scale: 1:1,250,000
1 inch equals 20 miles

FIGURE 3.2.1-2

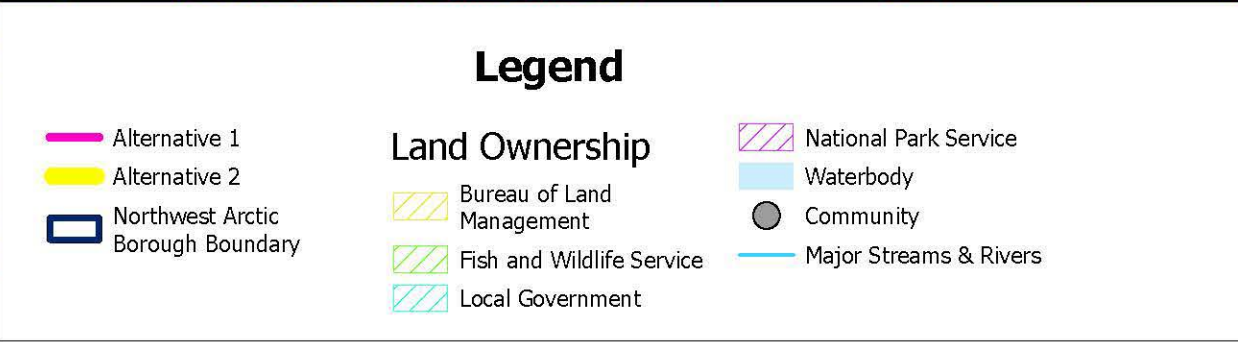
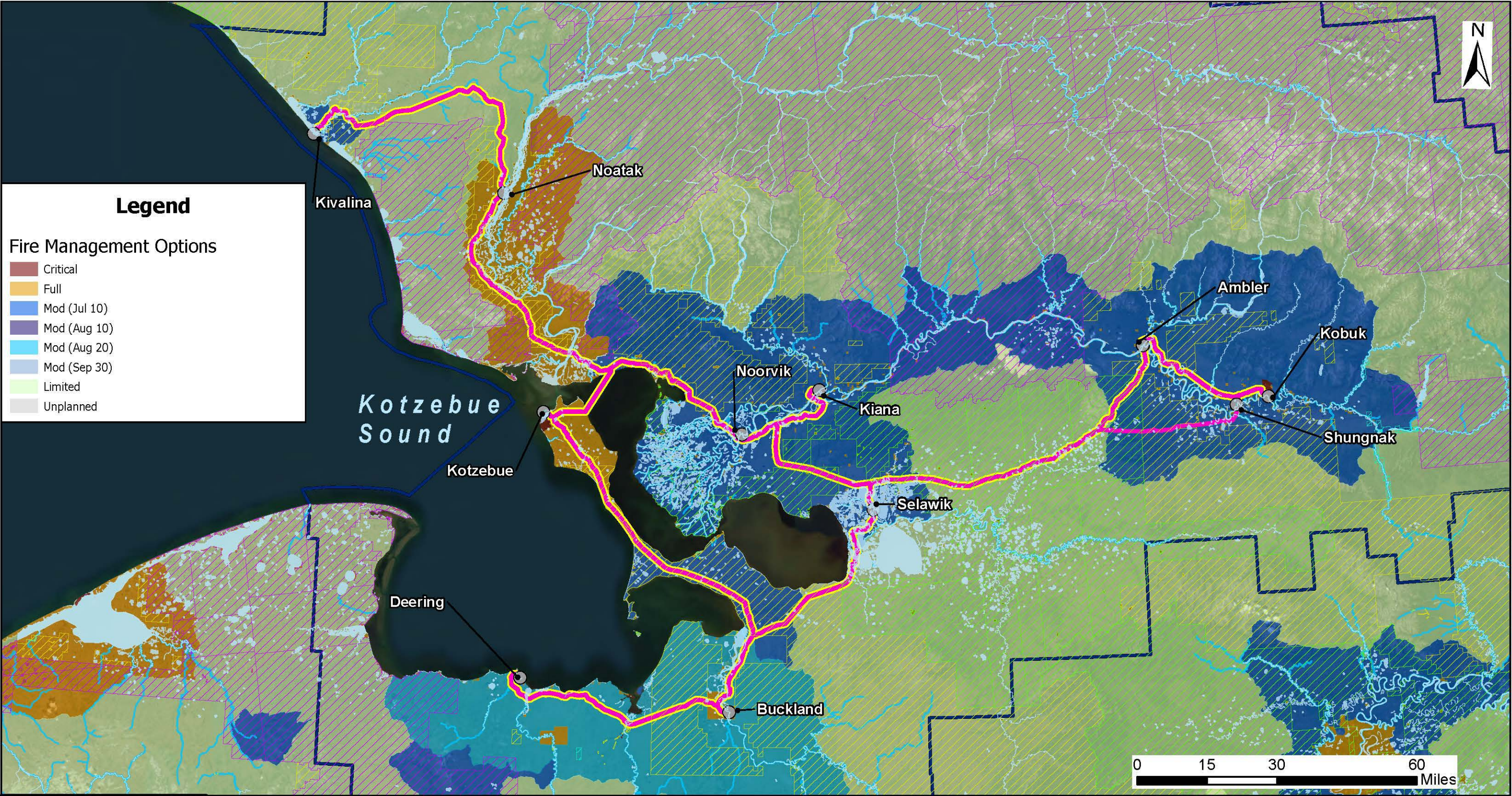


Legend			
Alternative 1	Likely Wetland Status	Wetland (NWI)	Freshwater
Alternative 2	Floodplain	Estuarine and Marine Deepwater	Forested/Shrub Wetland
Major Streams & Rivers	Riparian	Estuarine and Marine Wetland	Freshwater Pond
Community	Upland	Freshwater Emergent Wetland	Lake
	Wetland		Riverine

Notes:

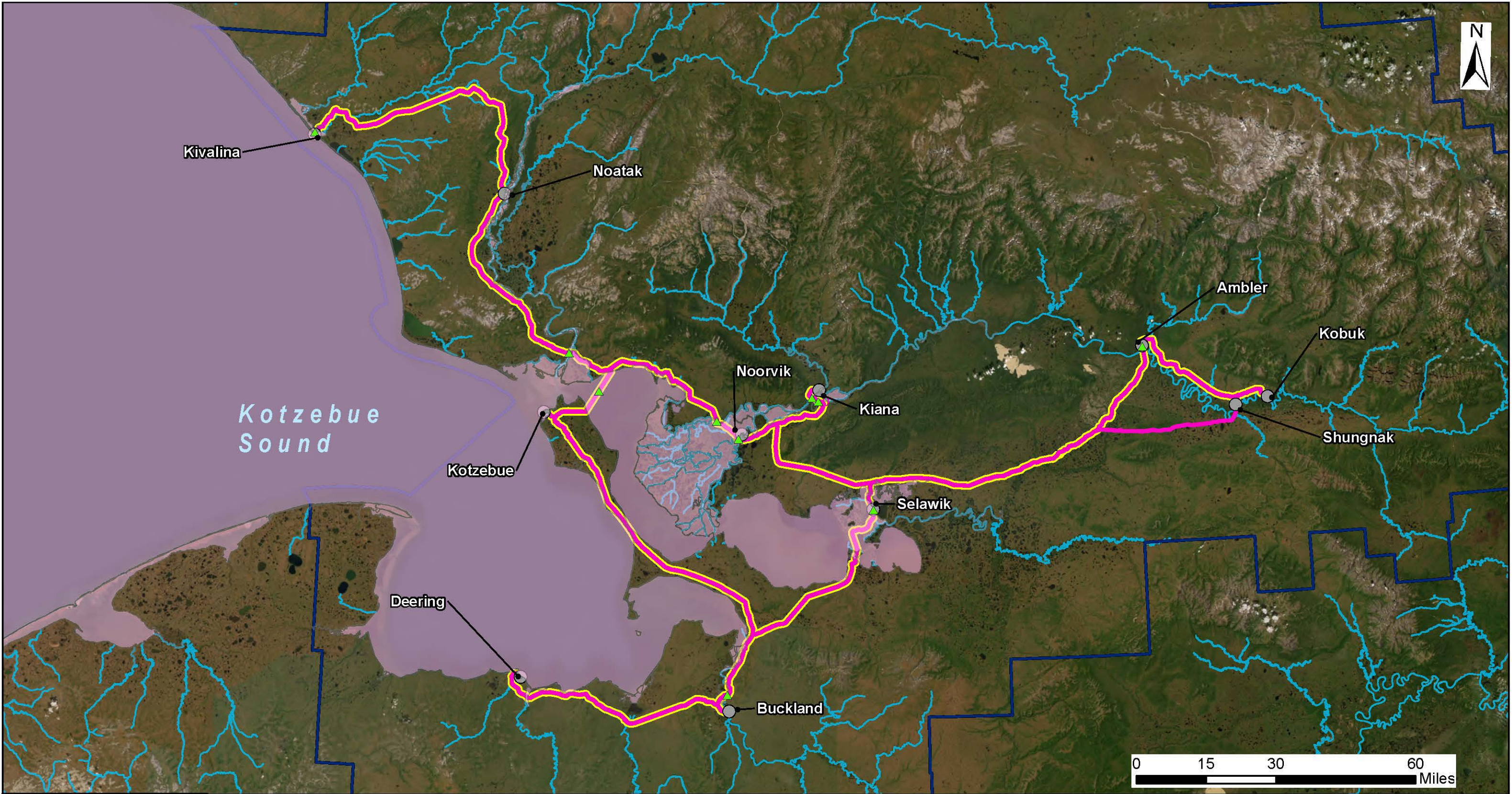
1. Coordinate system is NAD 1983 Alaska Albers Unit: Meters
2. Background imagery is from AGC Imagery, 2020.
3. U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data were used where available, with additional wetland areas mapped using vegetation information derived from LANDFIRE datasets.

National Wetlands Inventory		
NANA Regional Broadband Network Project		
Date: 10/6/2025		FIGURE 3.2.1-3
Scale: 1:1,250,000 1 inch equals 20 miles		



Notes:
1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. Within the BLM Statewide Assessment of Terrestrial Areas (SATA), fire management options are evaluated based on the mode of disturbance (MOD) and whether the area is classified as critical or moderate, guiding strategies for prevention, preparedness, suppression, and restoration.

Fire Management	
NANA Regional Broadband Network Project	
Date: 10/6/2025	FIGURE 3.2.1-4
Scale: 1:1,250,000 1 inch equals 20 miles	



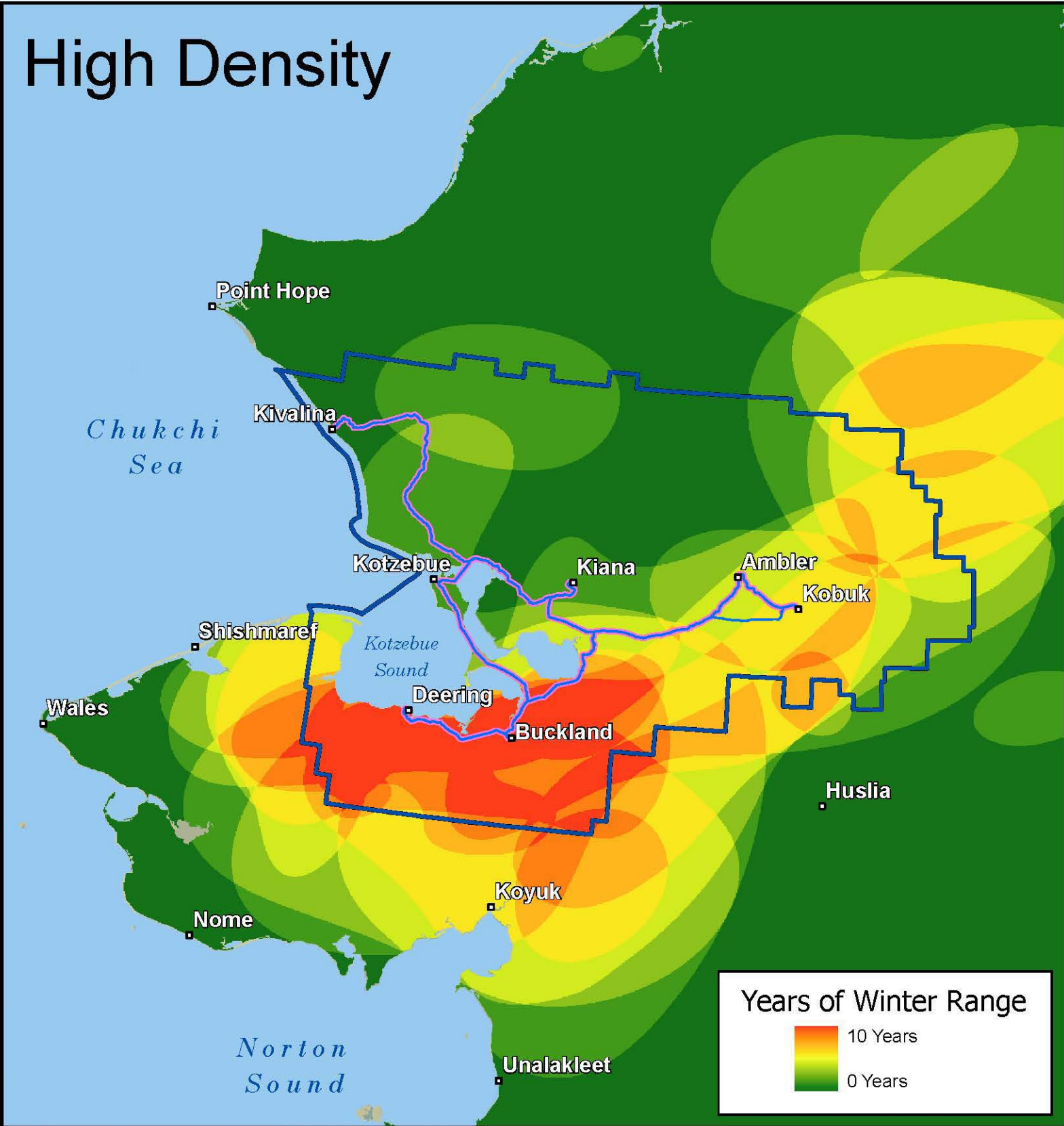
Legend		
Alternative 1	Community	Alaska Essential Fish Habitat
Alternative 2	Anadromous Waters	Section 10 Crossings
Northwest Arctic Borough Boundary		

Notes:

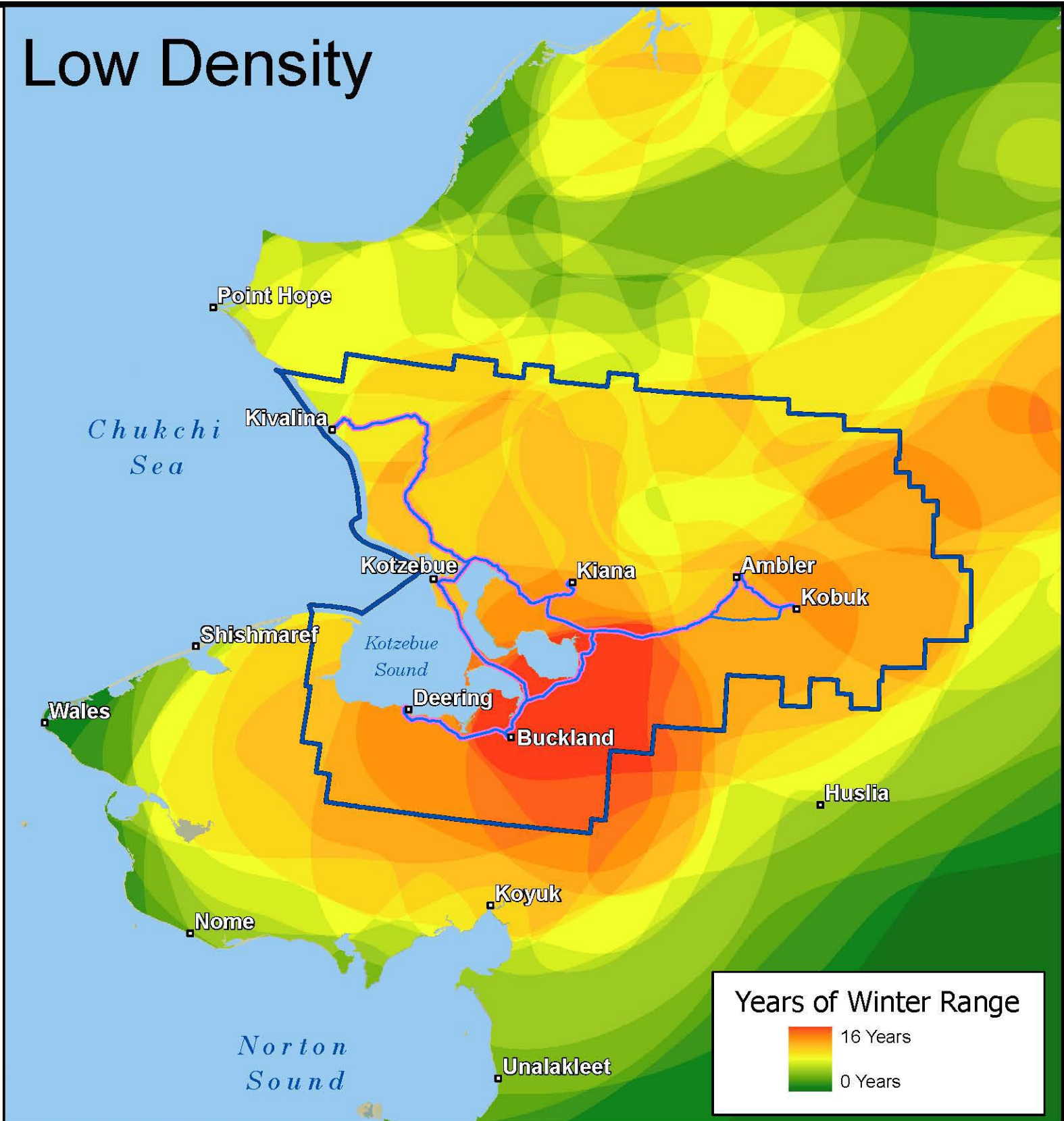
1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. The Alaska Department of Fish and Game's (ADFG) Anadromous water bodies data depict the known anadromous fish bearing lakes and streams within Alaska.
4. Under Section 10 of the Rivers and Harbors Act, any water crossing that spans or disturbs navigable waters requires a permit from the U.S. Army Corps of Engineers to ensure it does not obstruct navigation.

Essential Fish Habitat	
NANA Regional Broadband Network Project	
Date: 10/6/2025	FIGURE 3.2.2-1
Scale: 1:1,250,000 1 inch equals 20 miles	

High Density



Low Density



Area Map

Legend

- Community
- Alternative 1
- Alternative 2
- Northwest Arctic Borough Boundary

0 35 70 140 Miles

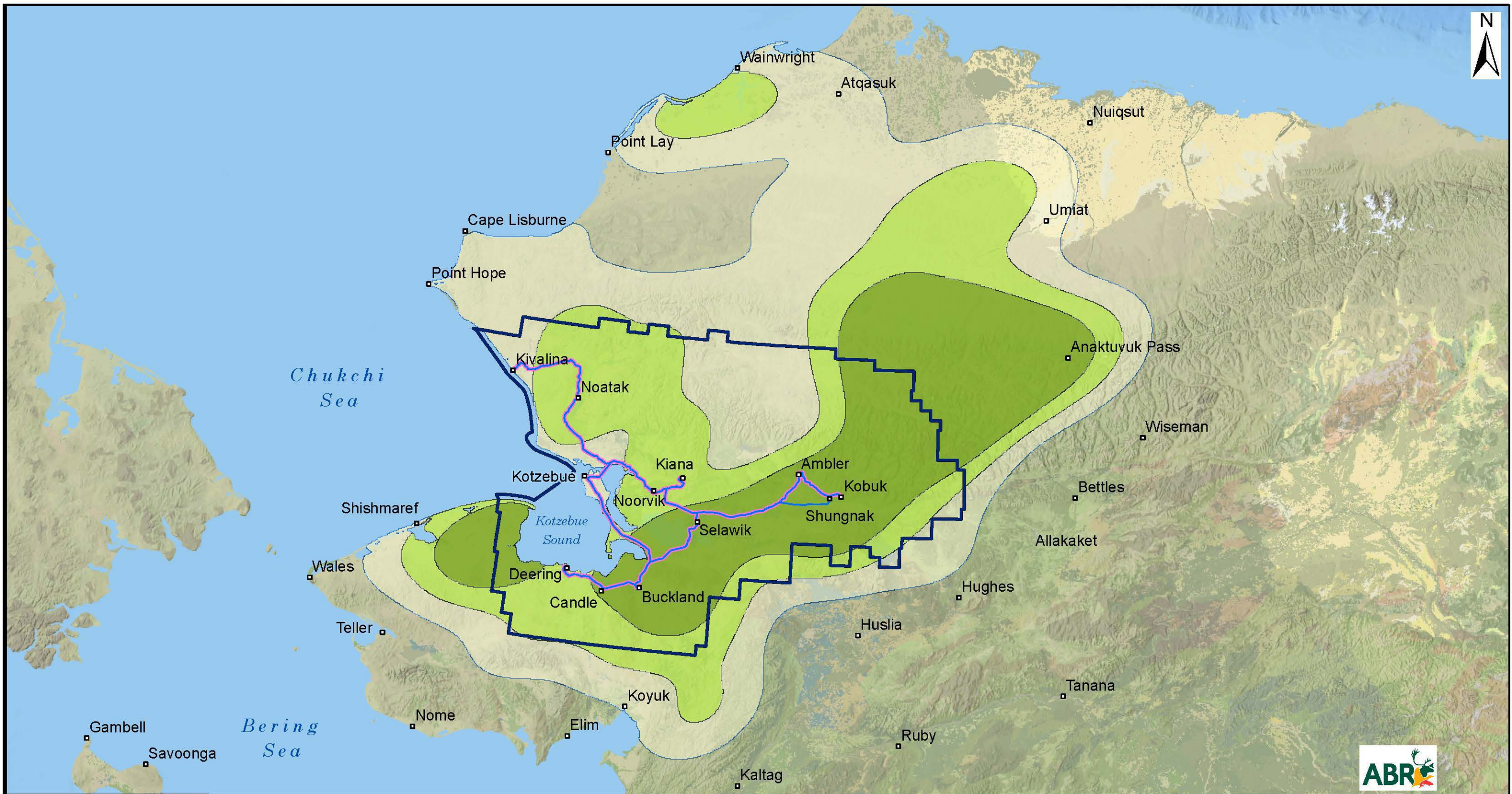
Notes:
1. Coordinate system is NAD 1983 Alaska Albers Unit: Meters
2. Background imagery is from ESRI national Geographic Style Base.
Sources: Esri, USGS
3. The years 1987–2009 were combined into 3 kernels for a total of 16 years or year-groups.

Caribou Winter Range 1987-2022
NANA Region Middle Mile Fiber Optic Project

Date :
9/29/2025

Scale: 1:3,522,379
1 inch equals 56 mile

FIGURE
3.2.4-1



Area Map

Legend

Winter Density 2017–2021

- High
- Medium
- Low

Community

- Northwest Arctic Borough Boundary
- Alternative 1
- Alternative 2

0 35 70 140 Miles

Notes:
1. Coordinate system is NAD 1983 Alaska Albers Unit: Meters
2. Background imagery is from ESRI national Geographic Style Base.
Sources: Esri, USGS

Caribou Winter Range 2017-2021
NANA Region Middle Mile Fiber Optic Project

Date :
9/29/2025

Scale: 1:3,522,379
1 inch equals 56 mile

FIGURE
3.2.4-2



Legend		
Alternative 1	Major Streams & Rivers	Arctic Moose Habitat Range
Alternative 2	Community	Muskox Habitat Range

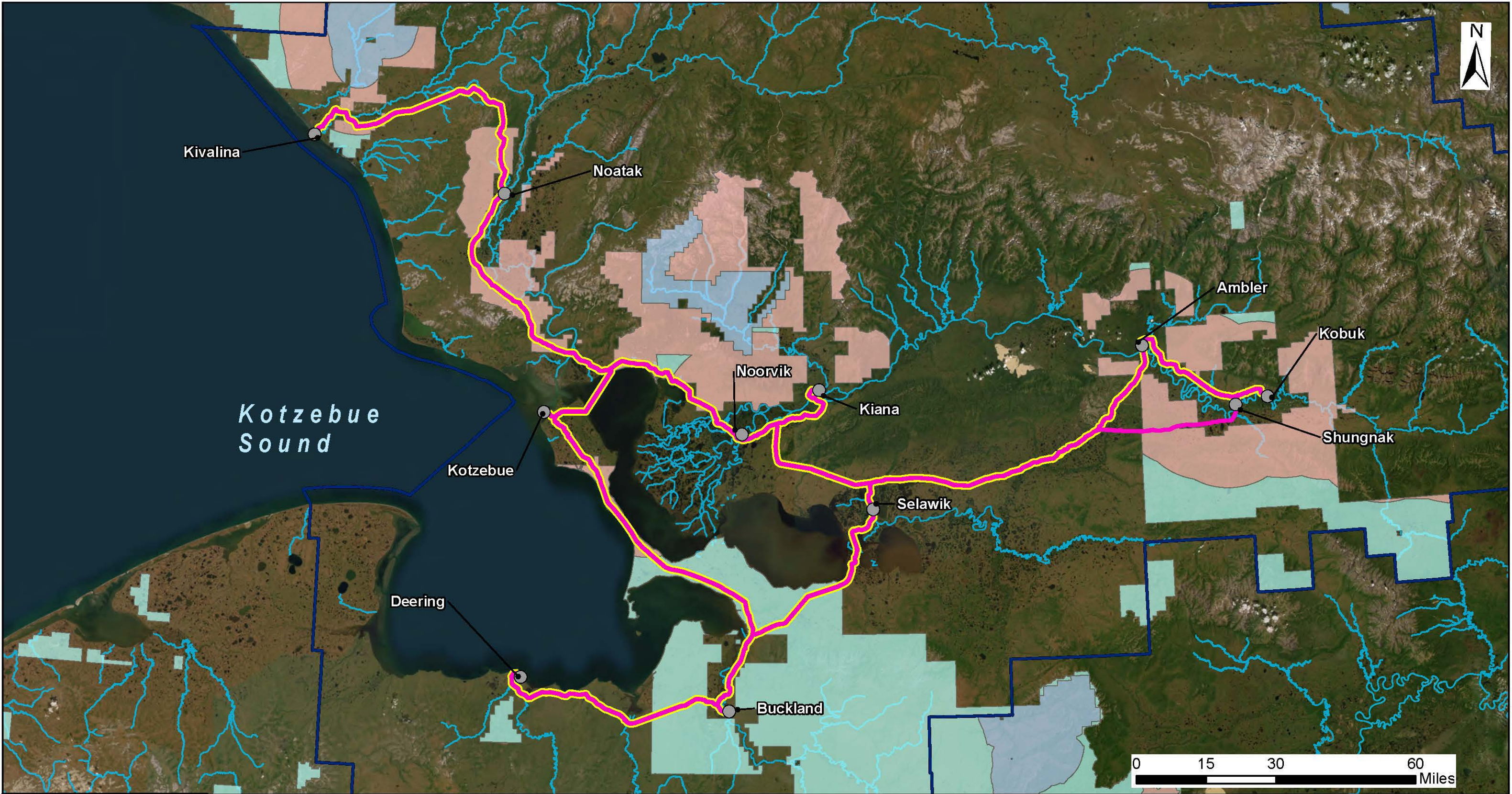
Notes:

1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. Moose and muskox range data were developed from Alaska Department of Fish and Game sources and incorporated into the game management and mammal distribution datasets.

Moose and Muskox Range	
NANA Regional Broadband Network Project	
Date: 10/6/2025	FIGURE 3.2.4-3
Scale: 1:1,250,000 1 inch equals 20 miles	



Legend		Notes: 1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet 2. Background imagery is from AGC Imagery, 2020. 3. Critical habitat designations for the polar bear, Steller's eider, and spectacled eider are vital under the Endangered Species Act because they identify and protect the essential sea-ice, tundra, and coastal marine areas these species need to survive and recover, though no Steller's eider or spectacled eider occur within the project areas.	Threatened and Endangered Species NANA Regional Broadband Network Project	
Alternative 1	Polar Bear Critical Habitat		Date: 10/6/2025	FIGURE 3.2.6
Alternative 2	Community		Scale: 1:1,250,000 1 inch equals 20 miles	
Major Streams & Rivers				



Legend

Alternative 1	BLM VRM Class VRM 1	VRM 3
Alternative 2	VRM 2	VRM 4
Community		Major Streams & Rivers

Notes:
1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. VRM 4 allows modification of the character of the landscape, VRM 3 allows partial retention of the existing character, VRM 2 requires largely retaining the existing character, and VRM 1 calls for preserving the existing character. If there is no VRM, the classification has not yet been determined.

BLM Visual Resource Management (VRM) Map	
NANA Regional Broadband Network Project	
Date: 10/6/2025	FIGURE 3.3.2-1
Scale: 1:1,250,000 1 inch equals 20 miles	

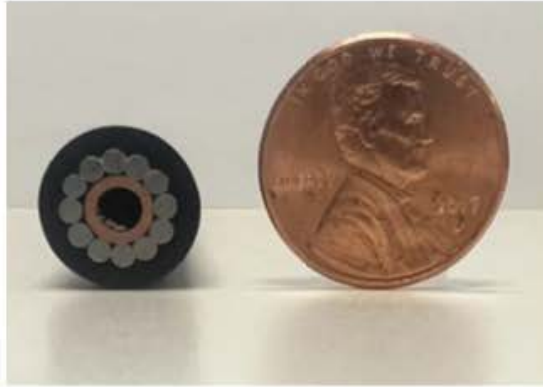


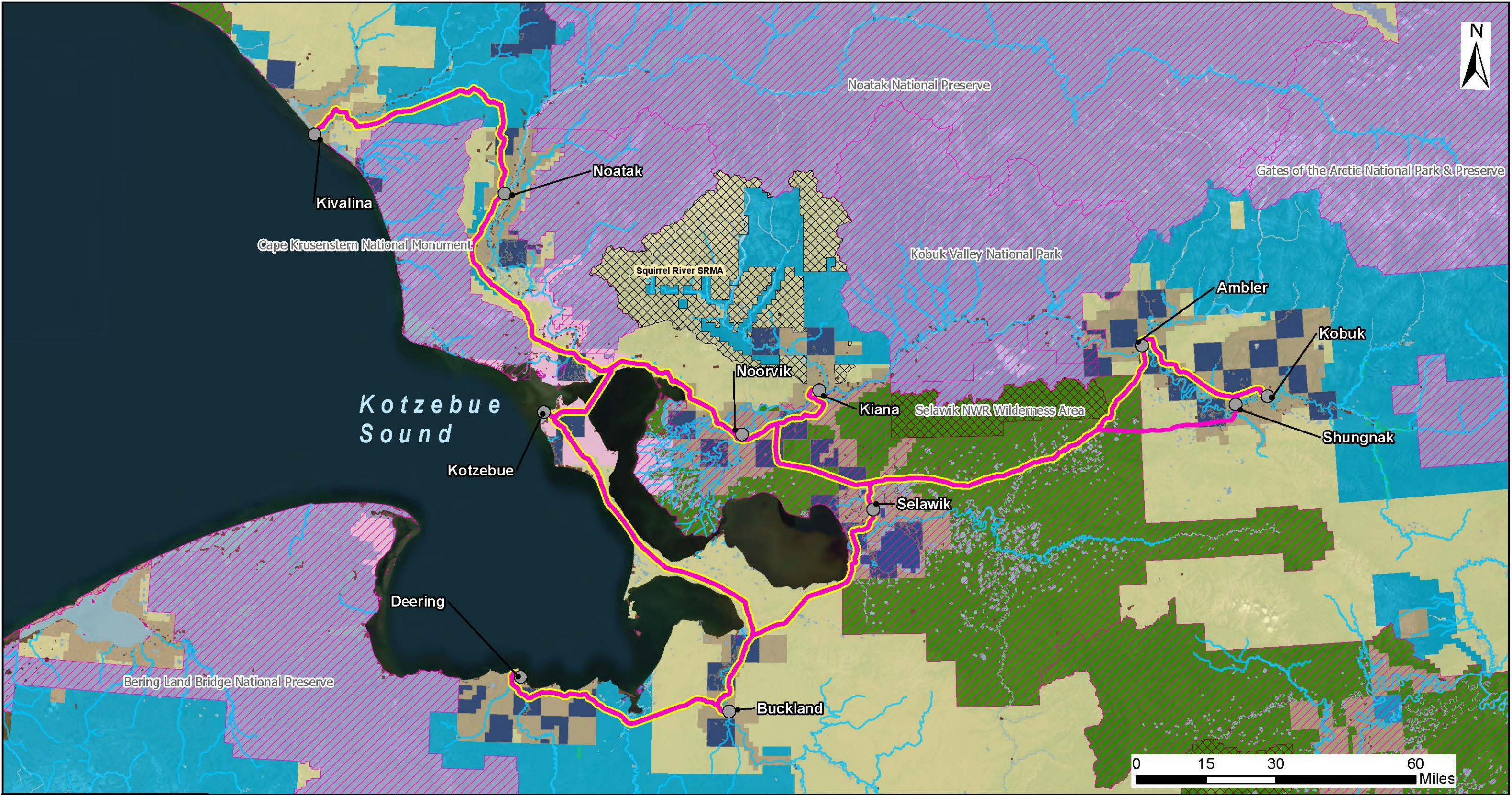
Figure 3.3.2-2: Fiber optic cable.



Figure 3.3.2-3. Photos of the ASTAC GLF one year after placement (July 2023).
(Orange stakes present in these ASTAC photos are not proposed for this project)



Figure 3.3.2-4. Photos of the ASTAC aerial crossings one year after installation (July 2023).



Legend				
Alternative 1	Community	Land Ownership		Fish and Wildlife Service
Alternative 2	Alaska National Parks, Preserves, Monuments and Refuges	Native Allotment	Native Lands	Local Government
Major Streams & Rivers	Alaska National Wilderness Areas	Bureau of Land Management	Department of Defense	National Park Service
Special Recreation Management Area				Other Federal
				Private
				State
				Waterbody
				Kikiktagruk Inupiat Corporation
				NANA Regional Corporation

Notes:

1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. BLM land ownership and National Wilderness Areas, Parks, Monuments, Refuges, and other designated management areas were developed using authoritative federal datasets. These boundaries originate from the Surface Management Agency (SMA) layer available through the Bureau of Land Management's (BLM) Spatial Data Management System (SDMS).

Land Ownership Map	
NANA Regional Broadband Network Project	
Date: 10/6/2025	FIGURE 3.3.3-1
Scale: 1:1,250,000 1 inch equals 20 miles	



Legend			
— Alternative 1	 Zoning Districts	 Transportation Corridor	 Habitat Conservation Districts
— Alternative 2	 General Conservation	 Village District	
— Major Streams & Rivers	 Resource Development	 Northwest Arctic Borough Boundary	
● Community	 Subsistence Conservation	 Subsistence SubDistricts	

Notes:
1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. This dataset includes trails, conservation districts, habitat conservation areas, and subsistence subdistricts within the Northwest Arctic Borough (NAB). The data was generated by the NAB Planning Department using its GIS and planning inventory resources to support regional land management.

NAB Zoning District Map	
NANA Regional Broadband Network Project	
Date: 10/6/2025	FIGURE 3.3.3-2
Scale: 1:1,250,000 1 inch equals 20 miles	



Legend

Alternative 1

Alternative 2

Major Streams & Rivers

Community

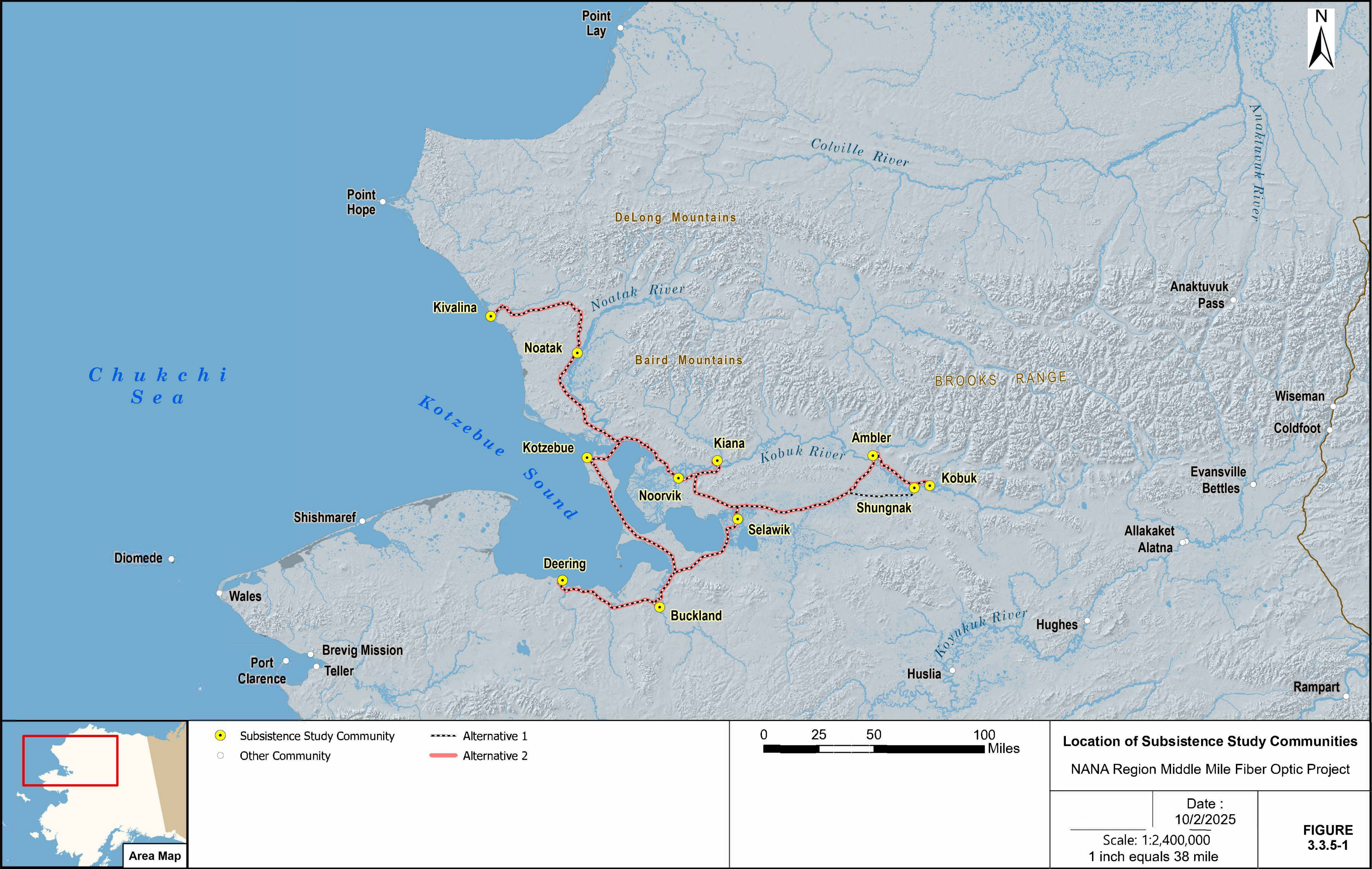
RS2477 Trails

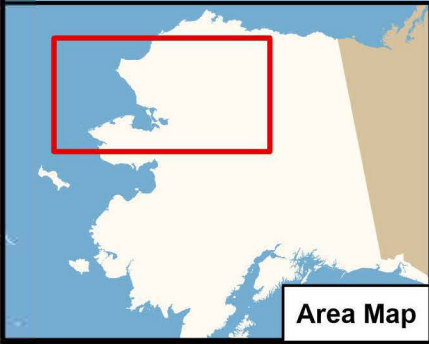
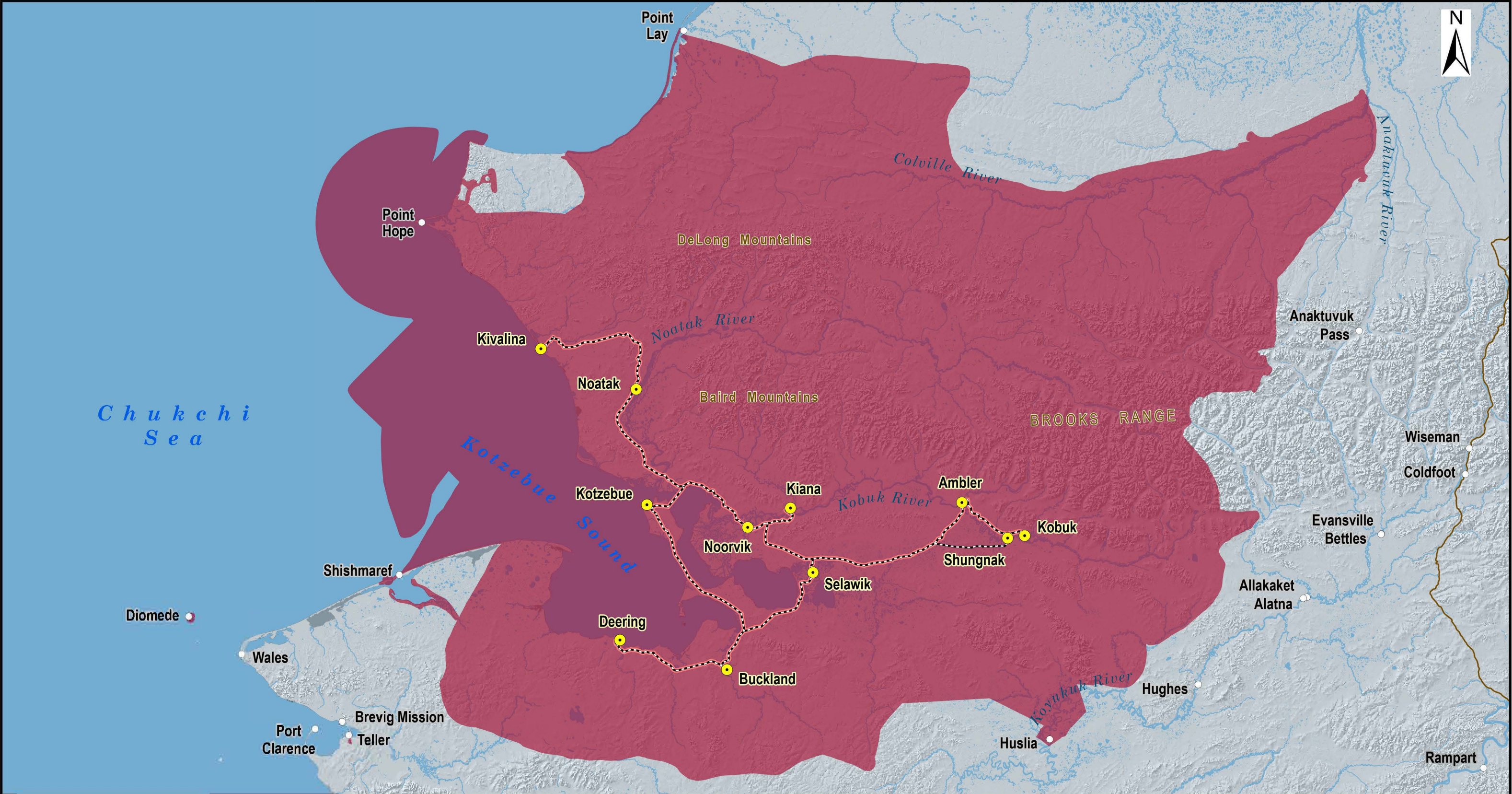
BLM AK Easement 17(b) Line

Wild and Scenic Rivers

Notes:
1. Coordinate system is NAD 1983 State Plane Alaska 7, Unit: Feet
2. Background imagery is from AGC Imagery, 2020.
3. Data includes RS 2477 trails, which are historic public routes established under Revised Statute 2477 and often used for access across federal lands in Alaska. It also features BLM Alaska Easement 17(b) lines, which are legal access corridors reserved under ANCSA to ensure public and Native corporation access across private lands.

Land Use Map		
NANA Regional Broadband Network Project		
Date: 10/6/2025		FIGURE 3.3.3-3
Scale: 1:1,250,000 1 inch equals 20 miles		





Subsistence Use Areas for Study Communities, All Resources ¹	Alternative 1 Alternative 2 Subsistence Study Community Other Community	02550100 Miles ¹Subsistence Data Sources: 1. Braem et al. 2013 2. Braem et al. 2015 3. Braem et al. 2017 4. Braund and Burnham 1983 5. Foote and Williamson 1996 6. Magdanz et al. 2010 7. Mikow and Cunningham 2020 8. Saario and Kessel 1966 9. Satterthwaite-Phillips et al. 2016 10. Schroeder et al. 1987 11. Stephen R. Braund & Associates 2009 12. Watson 2018	Subsistence Use Areas for Study Communities, All Resources NANA Region Middle Mile Fiber Optic Project <table><tr><td></td><td>Date : 9/29/2025</td><td rowspan="2">FIGURE 3.3.5-2</td></tr><tr><td colspan="2">Scale: 1:2,400,000 1 inch equals 38 mile</td></tr></table>		Date : 9/29/2025	FIGURE 3.3.5-2	Scale: 1:2,400,000 1 inch equals 38 mile	
	Date : 9/29/2025	FIGURE 3.3.5-2						
Scale: 1:2,400,000 1 inch equals 38 mile								