



U.S. Department of the Interior
Bureau of Land Management

Willow Master Development Plan

Supplemental Environmental Impact Statement

FINAL

Volume 2: Appendix A.1

Figures 1.4.1 to 2.7.1B

January 2023

Prepared by:

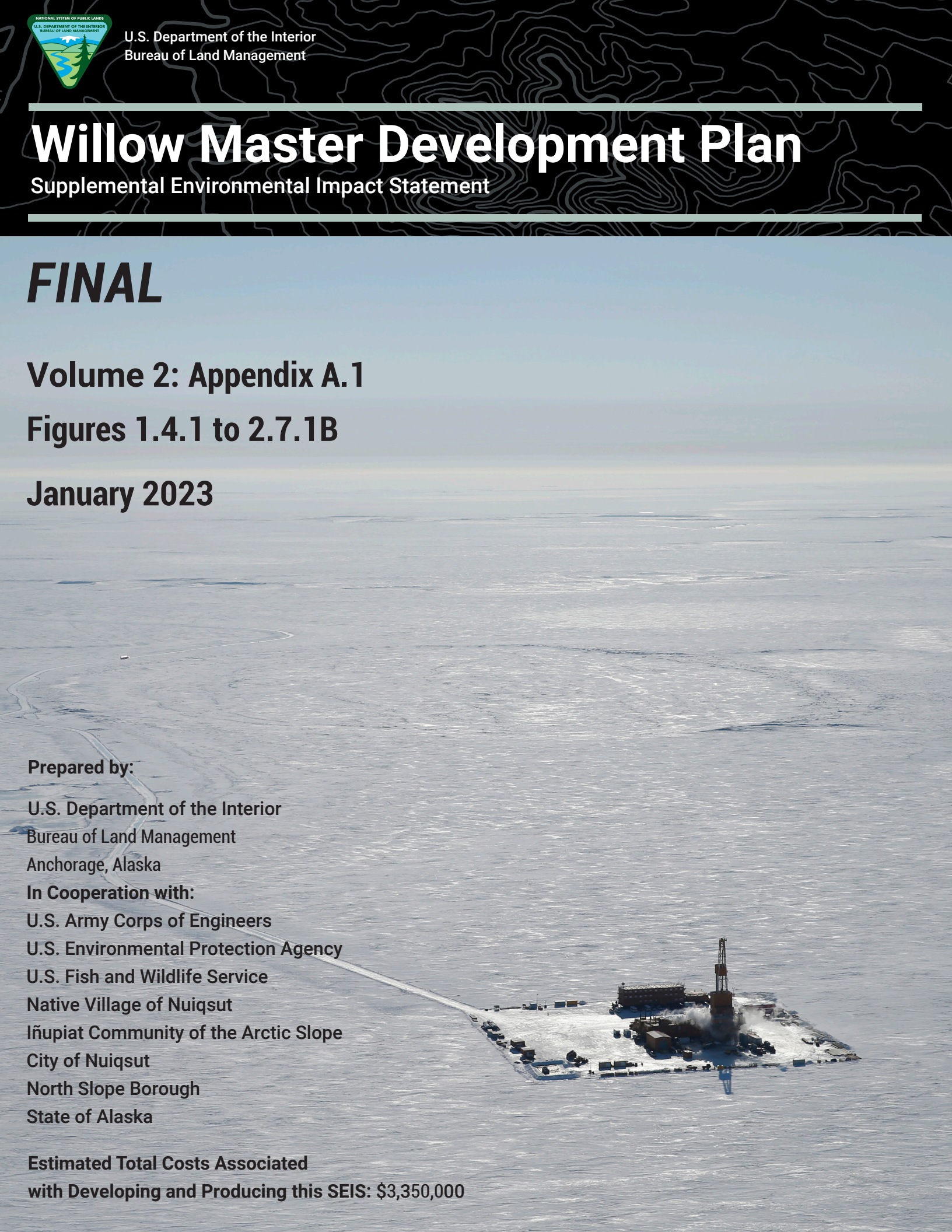
U.S. Department of the Interior
Bureau of Land Management
Anchorage, Alaska

In Cooperation with:

U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
Native Village of Nuiqsut
Iñupiat Community of the Arctic Slope
City of Nuiqsut
North Slope Borough
State of Alaska

Estimated Total Costs Associated

with Developing and Producing this SEIS: \$3,350,000



Mission

To sustain the health, diversity, and productivity of the public lands for the future use and enjoyment of present and future generations.

Cover Photo Illustration: North Slope Alaska oil rig during winter drilling.

Photo by: Judy Patrick, courtesy of ConocoPhillips.

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DOI-BLM-AK-0000-2018-0004-EIS
BLM/AK/PL-22/032+1610+F010

Willow Master Development Plan

Appendix A.1

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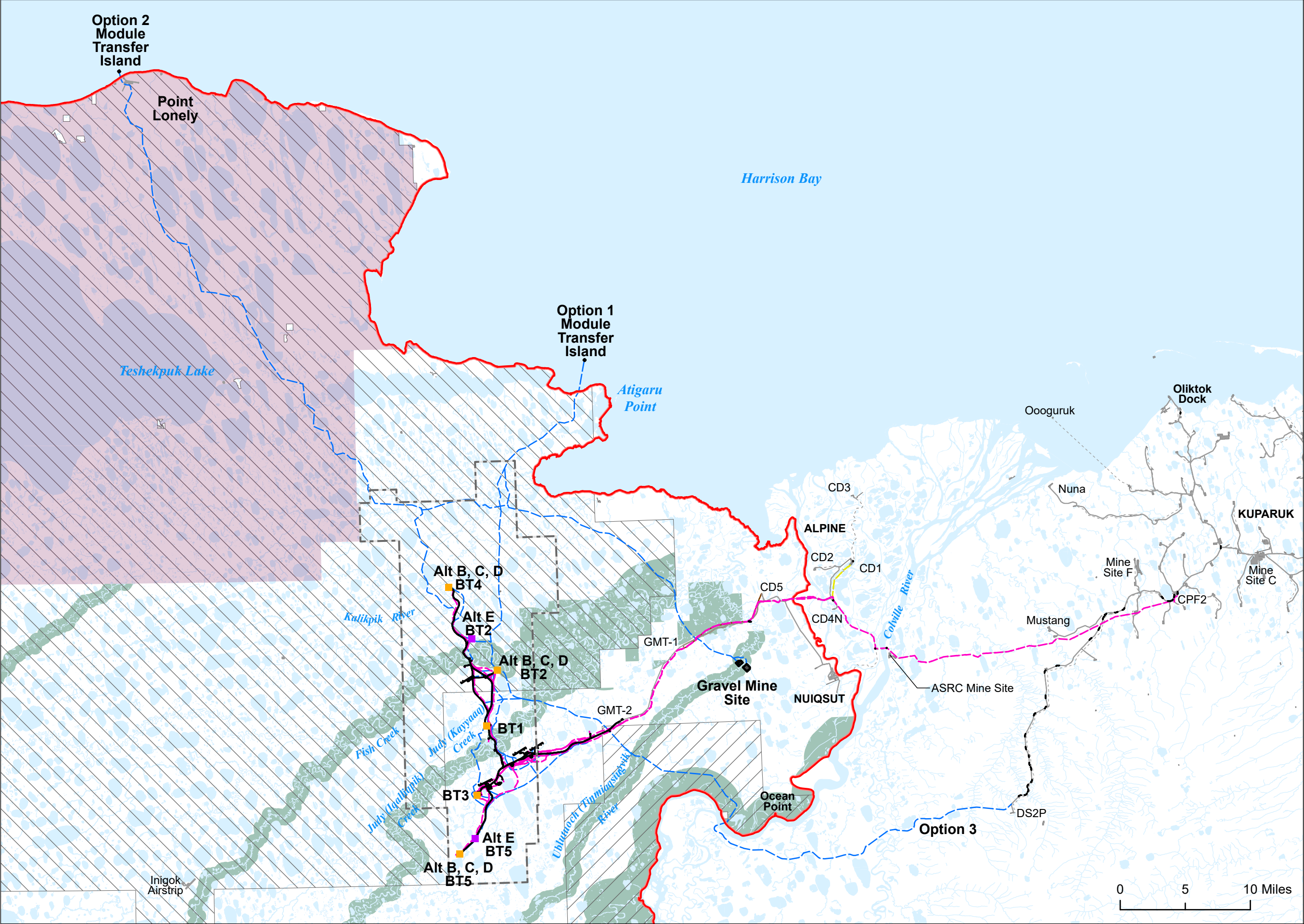
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Willow Proposed Development Features

- Drill Site (Not to Scale)
- Alt E Drill Site (Not to Scale)
- Ice Road
- Gravel Footprint

Other Infrastructure

- Existing Road
- Existing Pipeline
- Existing Infrastructure

Oil and Gas Lease Unit

- Bear Tooth

Required Operating Procedure

- K-1: River Setbacks
- K-9: No New Infrastructure

NPR-A Special Areas

- Colville River Special Area
- Teshekpuk Lake Special Area

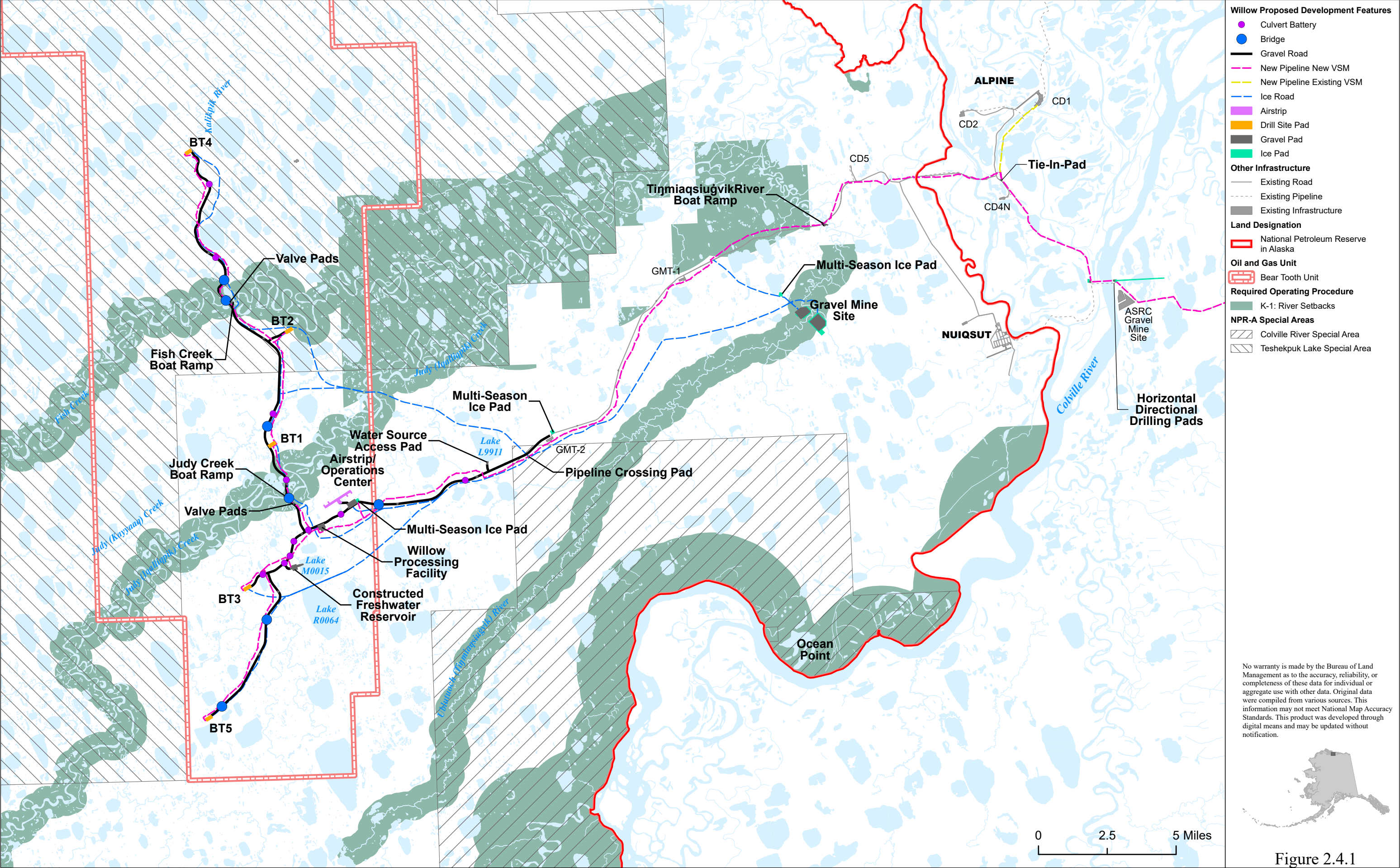
Land Designation

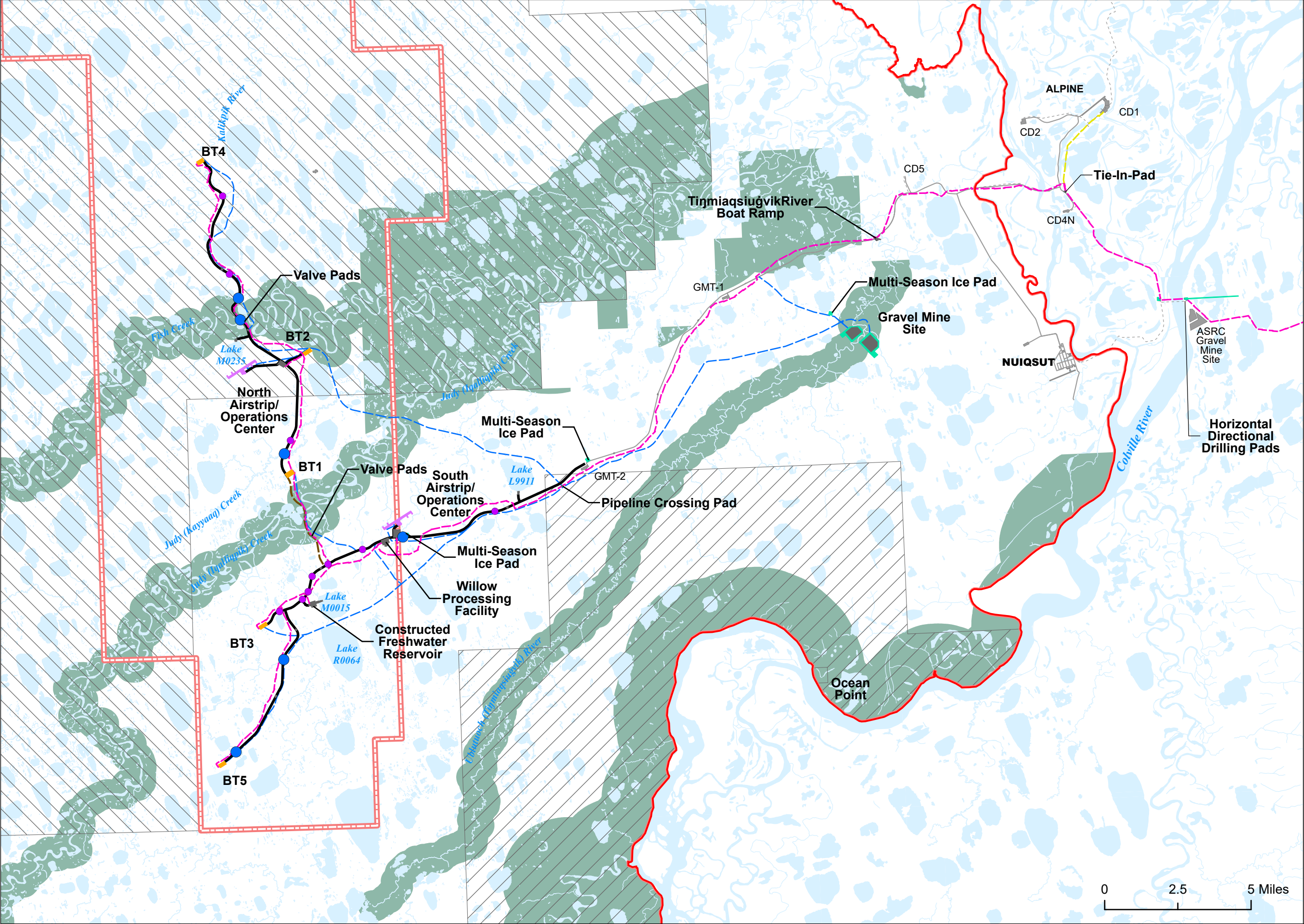
- National Petroleum Reserve in Alaska

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Figure 1.4.1





Willow Proposed Development Features

- Culvert Battery
- Bridge
- Gravel Road
- New Pipeline New VSM
- New Pipeline Existing VSM
- Ice Road
- Annual Resupply Ice Road
- Airstrip
- Drill Site Pad
- Gravel Pad
- Ice Pad

Other Infrastructure

- Existing Road
- Existing Pipeline
- Existing Infrastructure

Land Designation

- National Petroleum Reserve in Alaska

Oil and Gas Unit

- Bear Tooth Unit

Required Operating Procedure

- K-1: River Setbacks

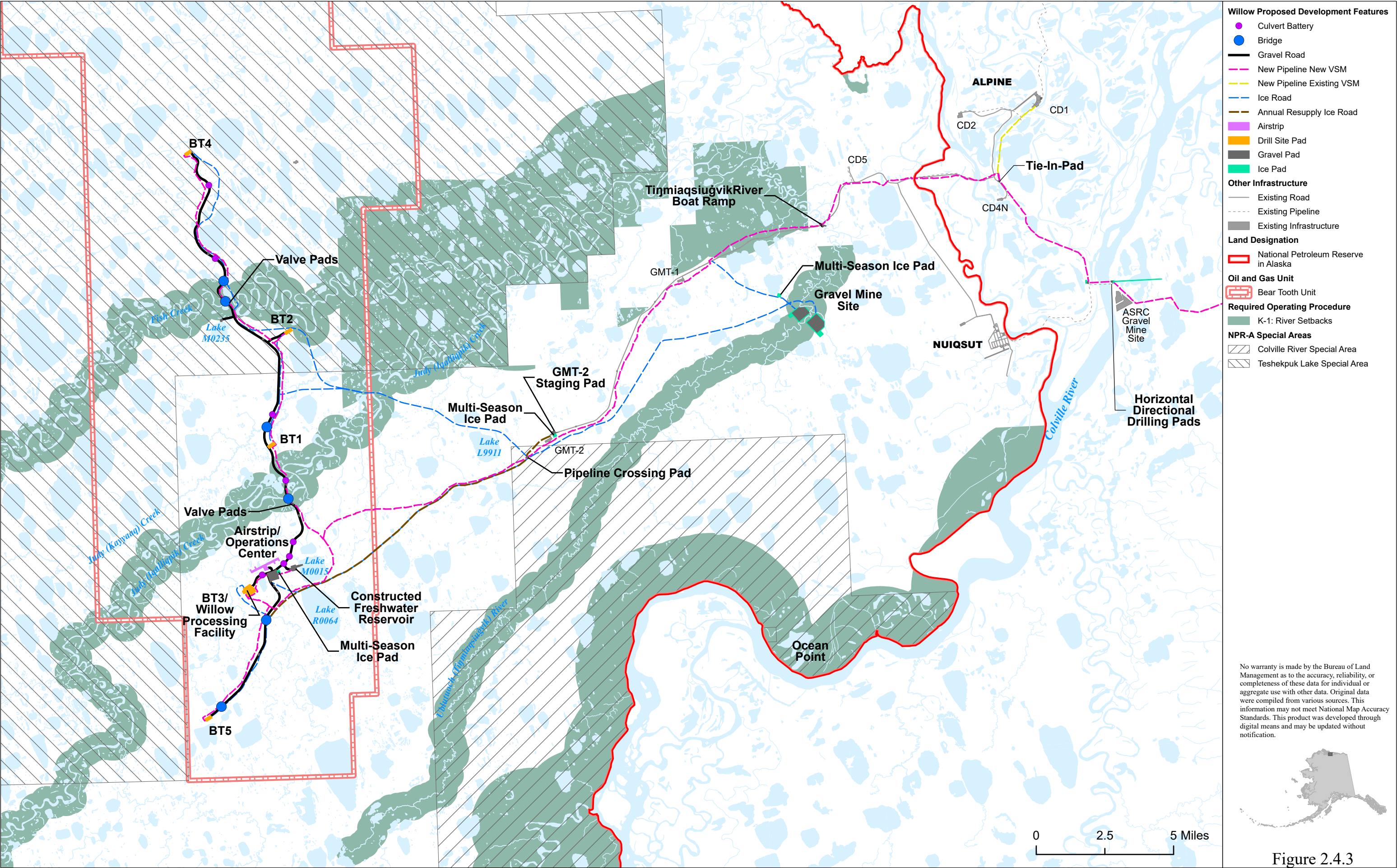
NPR-A Special Areas

- Colville River Special Area
- Teshkepkuk Lake Special Area

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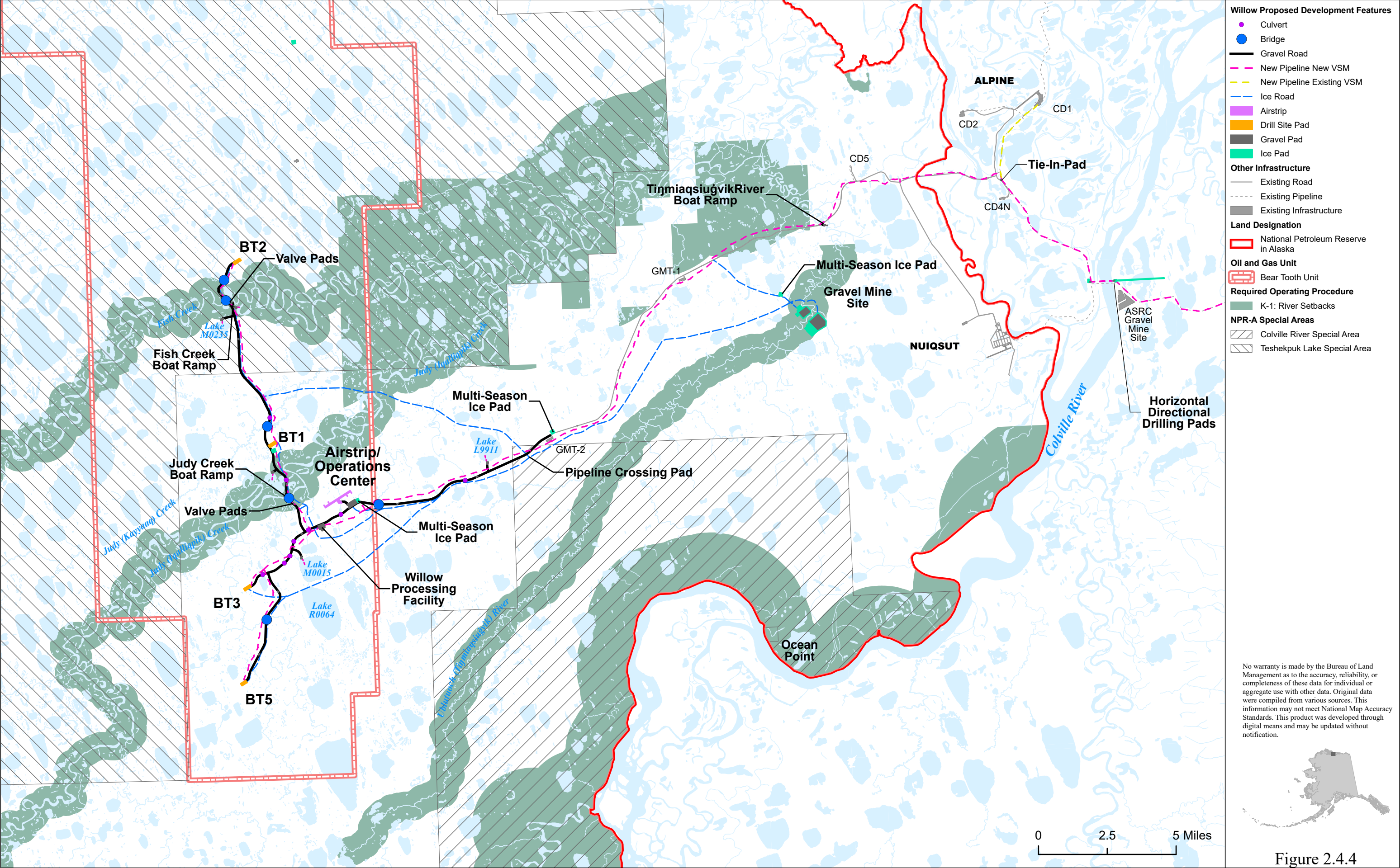
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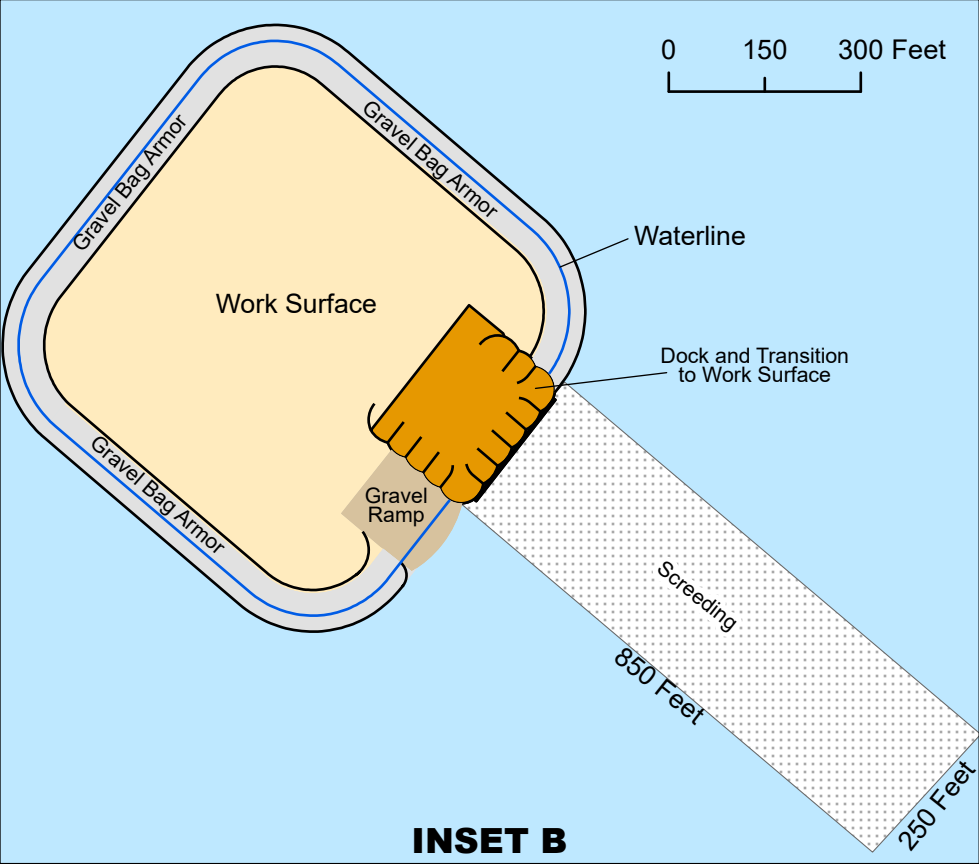
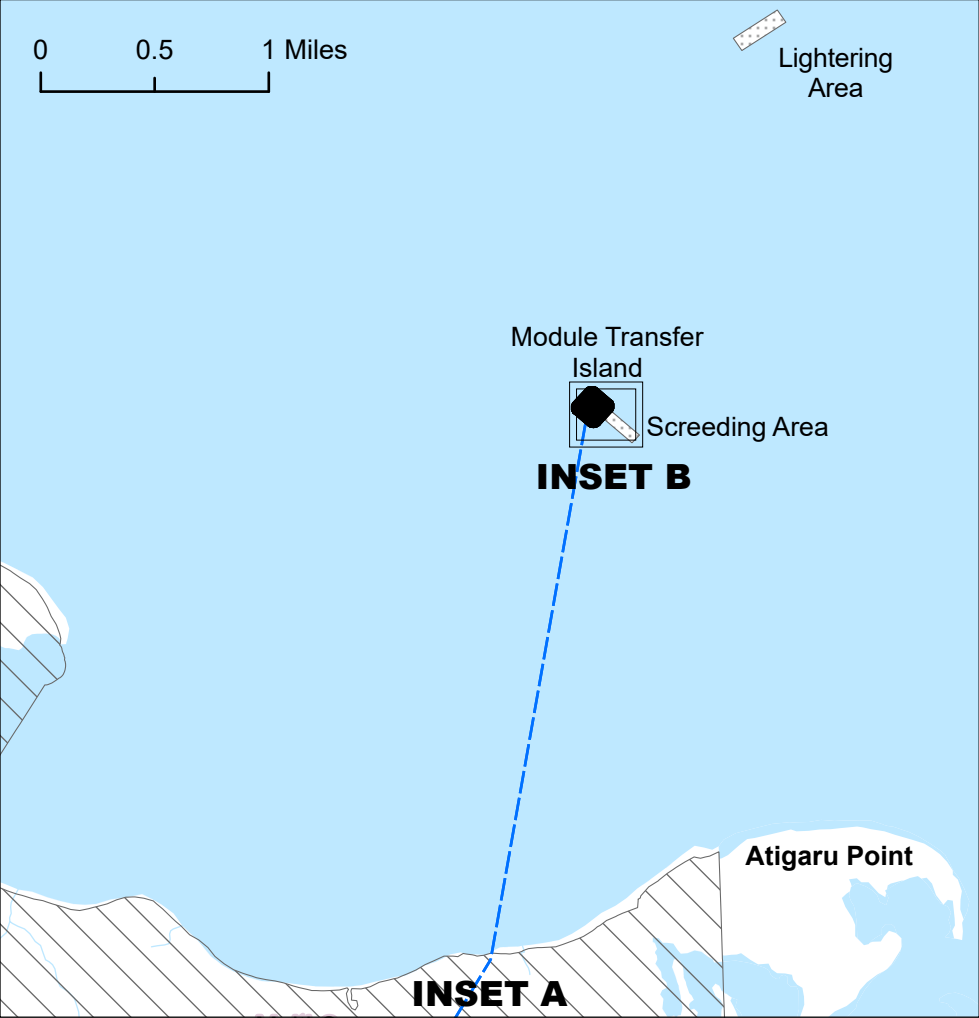
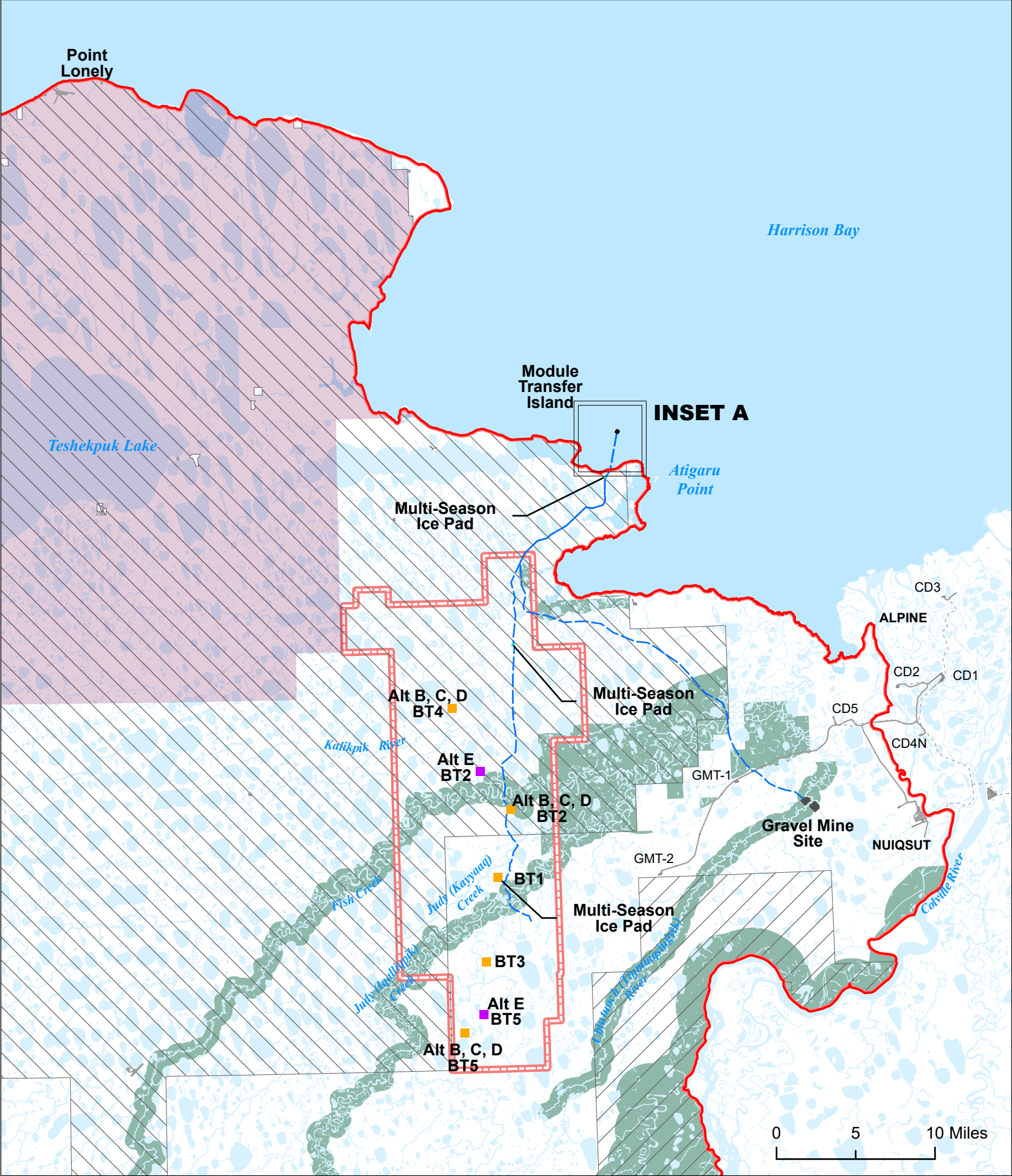


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Figure 2.4.3



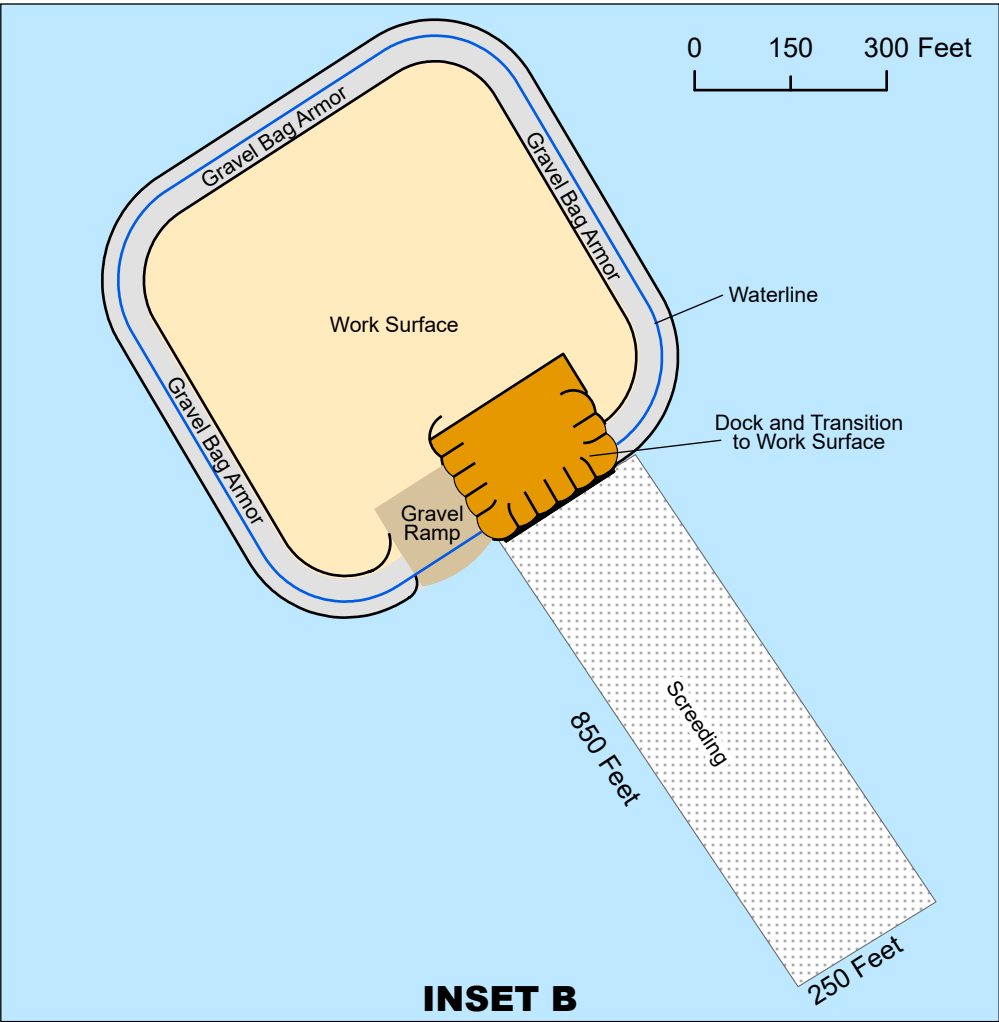
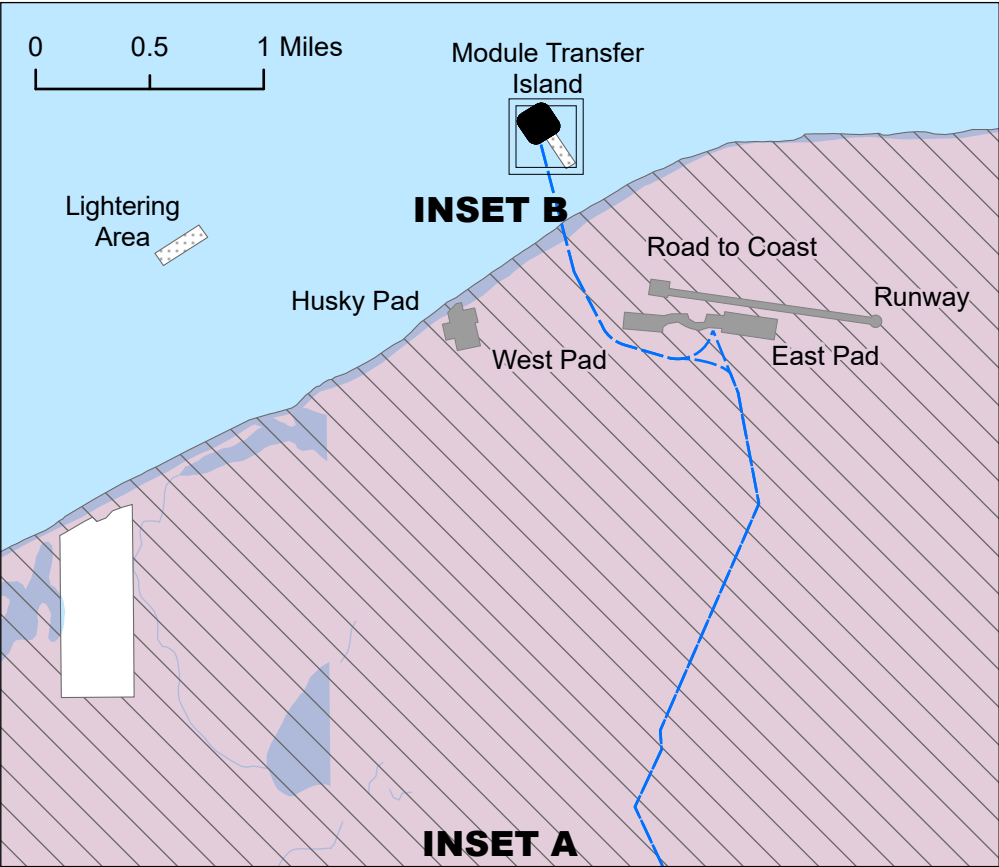
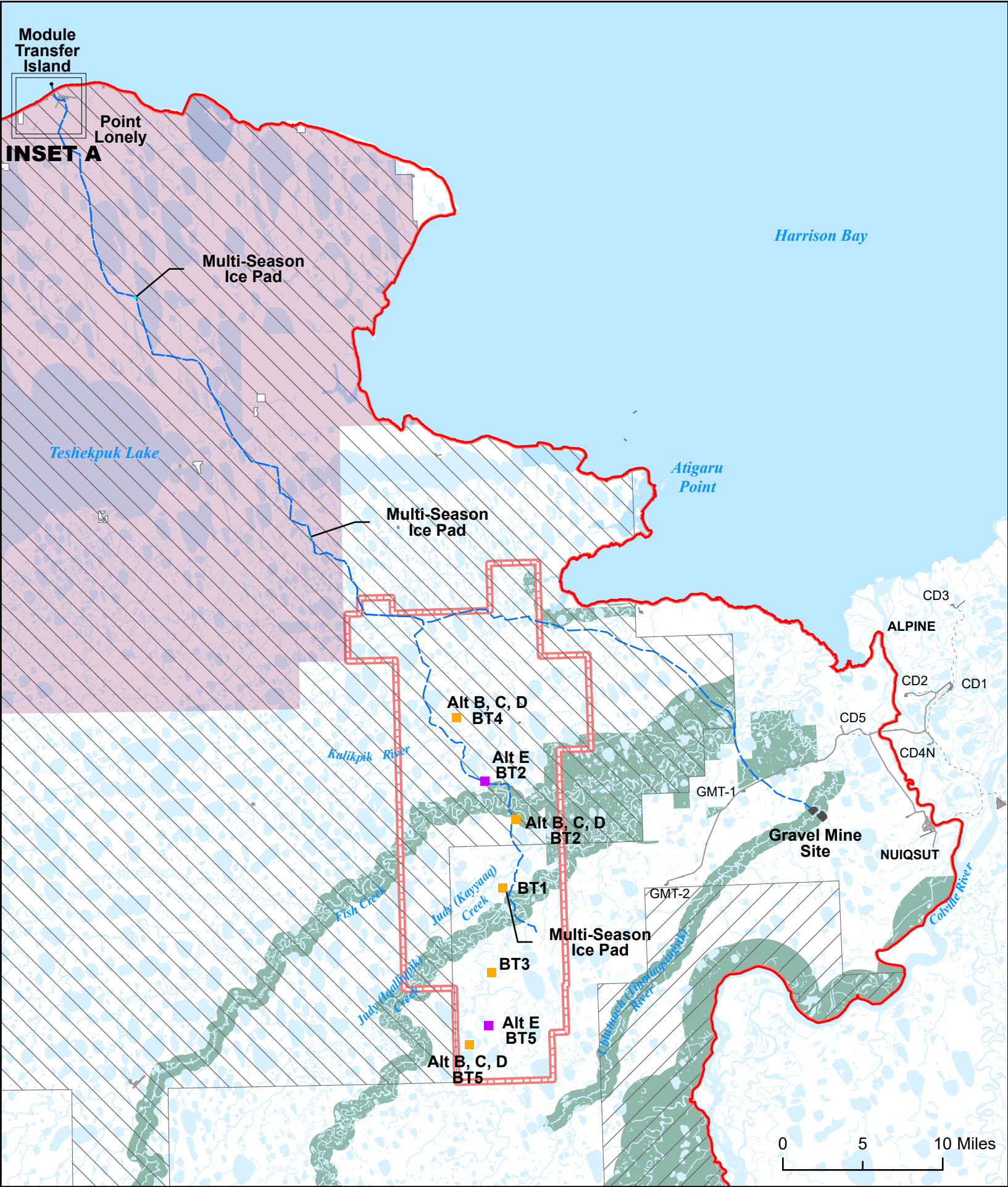


- Willow Proposed Development Features**
- Drill Site (Not to Scale)
 - Alt E Drill Site (Not to Scale)
 - Ice Road
 - Module Transfer Island
 - Gravel Mine Site
 - Ice Pad
- Other Infrastructure**
- Existing Road
 - Existing Pipeline
 - Existing Infrastructure
- Land Designation**
- National Petroleum Reserve in Alaska
- Oil and Gas Unit**
- Bear Tooth Unit
- Required Operating Procedure**
- K-1: River Setbacks
 - K-9: No New Infrastructure
- NPR-A Special Areas**
- Colville River Special Area
 - Teshekpuk Lake Special Area

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Figure 2.4.5

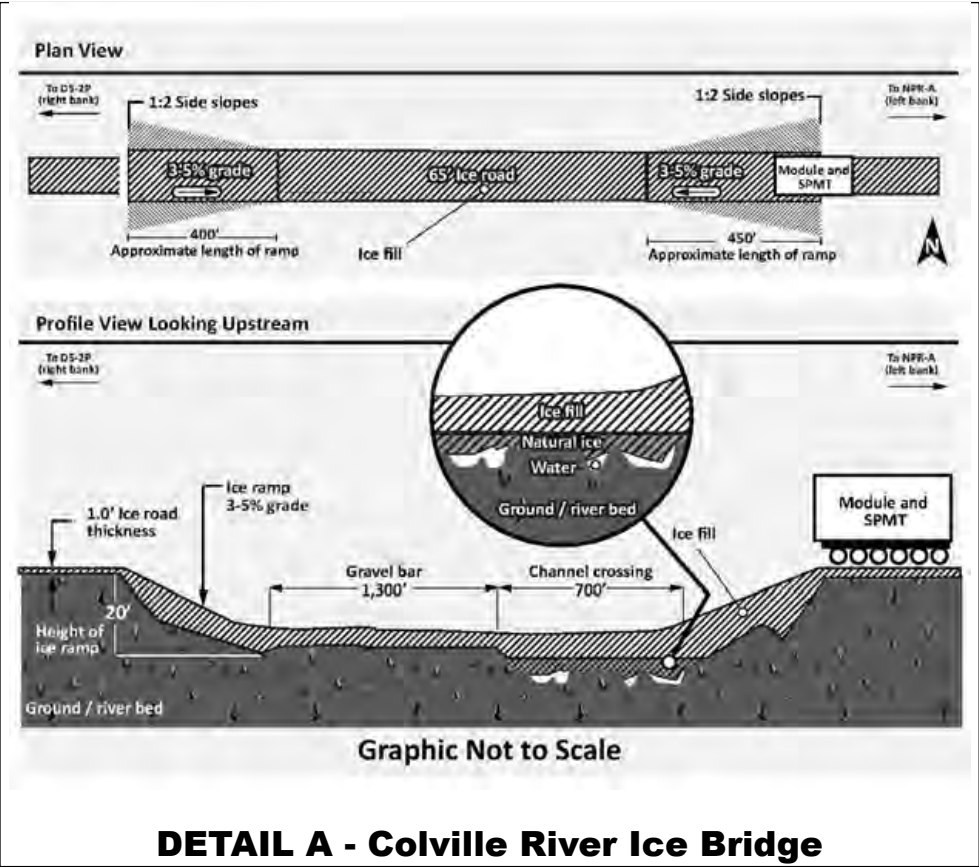
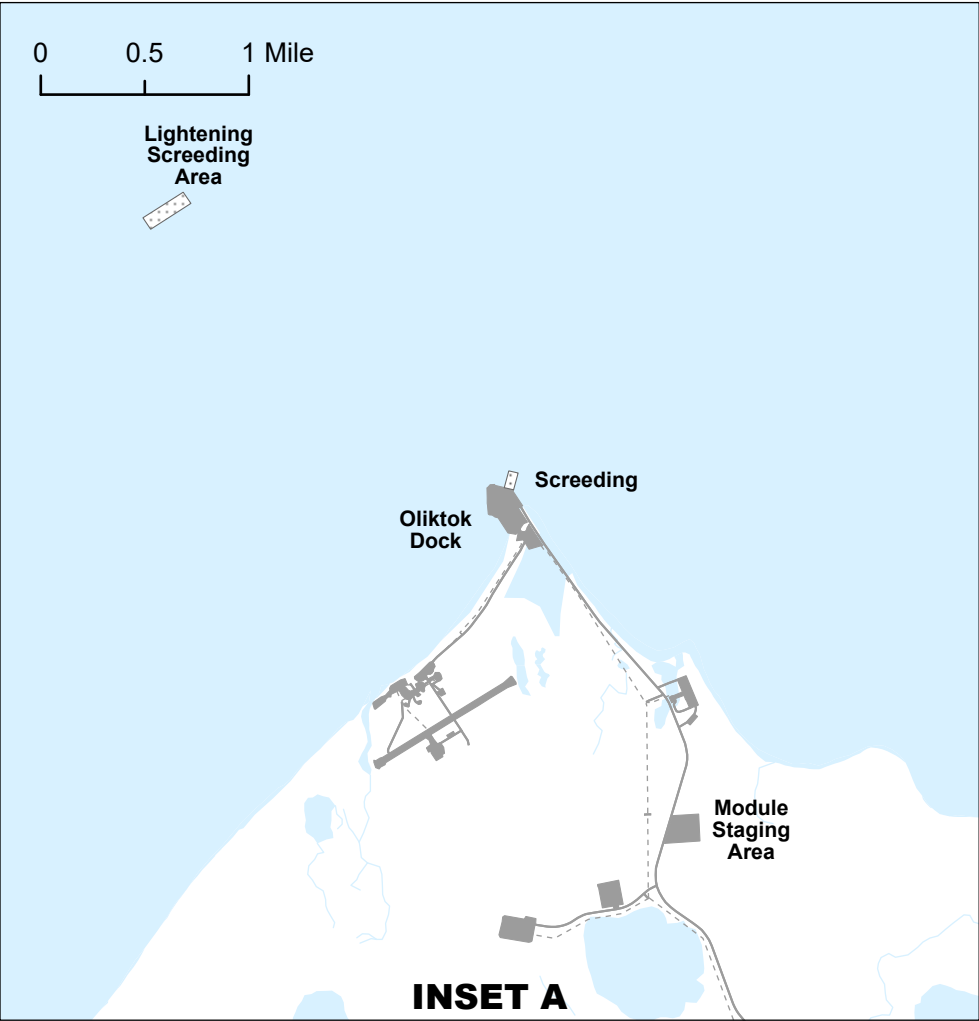


- Willow Proposed Development Features**
- Drill Site (Not to Scale)
 - Alt E Drill Site (Not to Scale)
 - Ice Road
 - Lonely Nearshore Staging Area
 - Gravel Mine Site
 - Screeding
 - Ice Pad
- Other Infrastructure**
- Existing Road
 - Existing Pipeline
 - Existing Infrastructure
- Land Designation**
- National Petroleum Reserve in Alaska
- Oil and Gas Unit**
- Bear Tooth Unit
- Required Operating Procedure**
- K-1: River Setbacks
 - K-9: No New Infrastructure
- NPR-A Special Areas**
- Colville River Special Area
 - Teshekpuk Lake Special Area

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Figure 2.4.6



- Willow Proposed Development Features**
- Drill Site (Not to Scale)
 - Alt E Drill Site (Not to Scale)
 - Ice Road
 - Screeding
- Other Infrastructure**
- Existing Road
 - Existing Pipeline
 - Existing Infrastructure
- Land Designation**
- National Petroleum Reserve in Alaska
- Oil and Gas Unit**
- Bear Tooth Unit
- Required Operating Procedure**
- K-1: River Setbacks
 - K-9: No New Infrastructure
- NPR-A Special Areas**
- Colville River Special Area
 - Teshekpuk Lake Special Area

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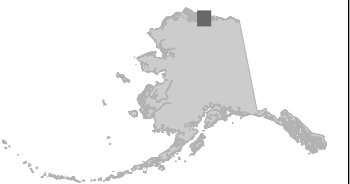
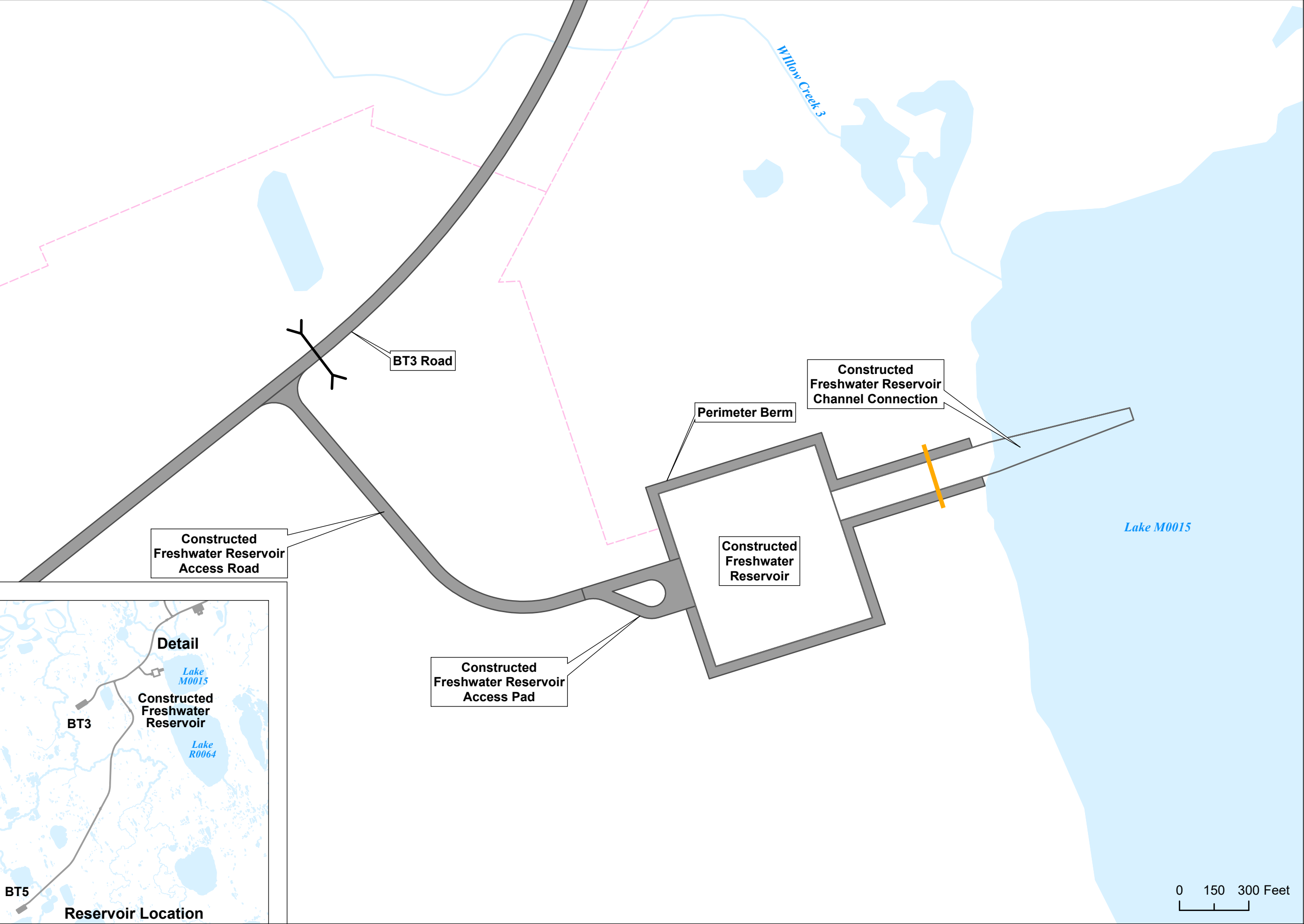


Figure 2.4.7



Willow Proposed Development Features

- Culvert Battery
- Weir
- New Pipeline New VSM
- Gravel Footprint

Notes:
Alternative B is shown as a reference.
The freshwater reservoir would be the same for alternatives C and D.

The constructed freshwater reservoir would apply to Alternatives B, C, and D.

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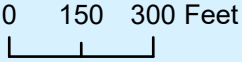
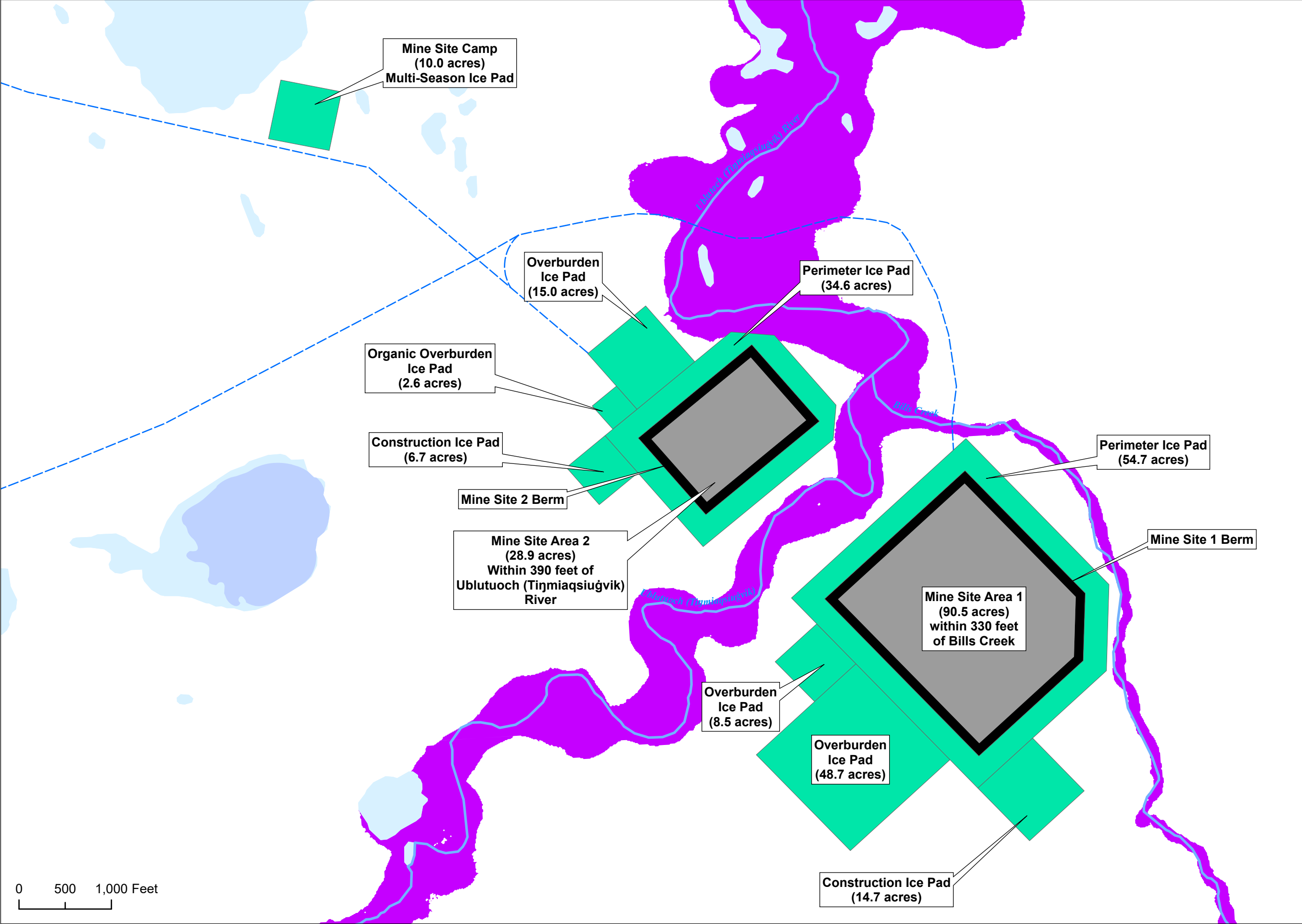


Figure 2.5.1



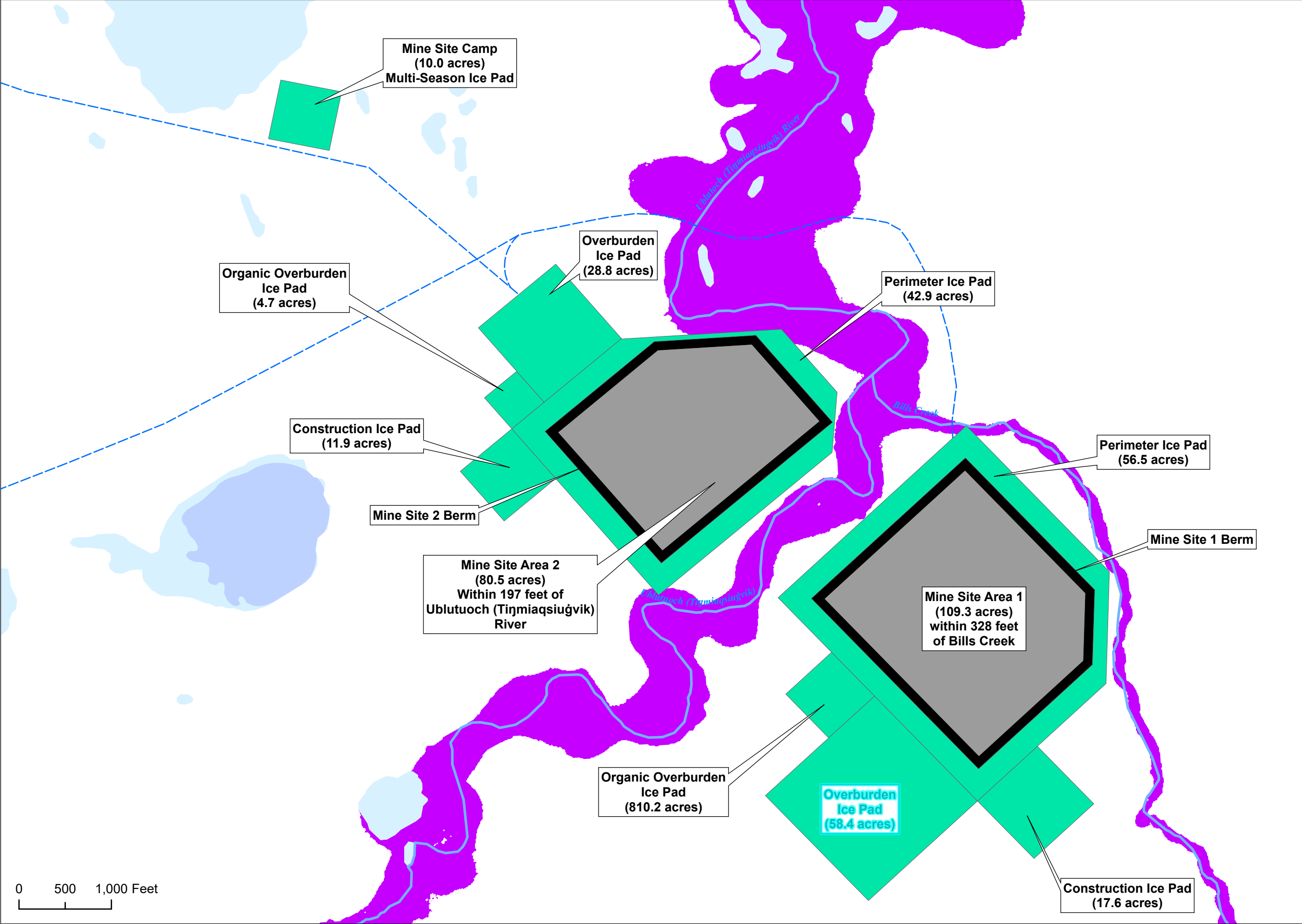
- Willow Proposed Development Features**
- Alt B
 - Excavation
 - Berm
 - Ice Pad
- Waterbodies**
- Anadromous Stream
 - Winter Liquid Water Availability
- Floodplain**
- 50-Year
 - 100-Year

Data Source:
North Slope Science Initiative (2009)
Alaska Department of Fish and Game (2018)

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Figure 2.5.2A



Willow Proposed Development Features

- Ice Road
- Excavation
- Berm
- Ice Pad Alts C & D

Waterbodies

- Anadromous Stream
- Winter Liquid Water Availability

Floodplain

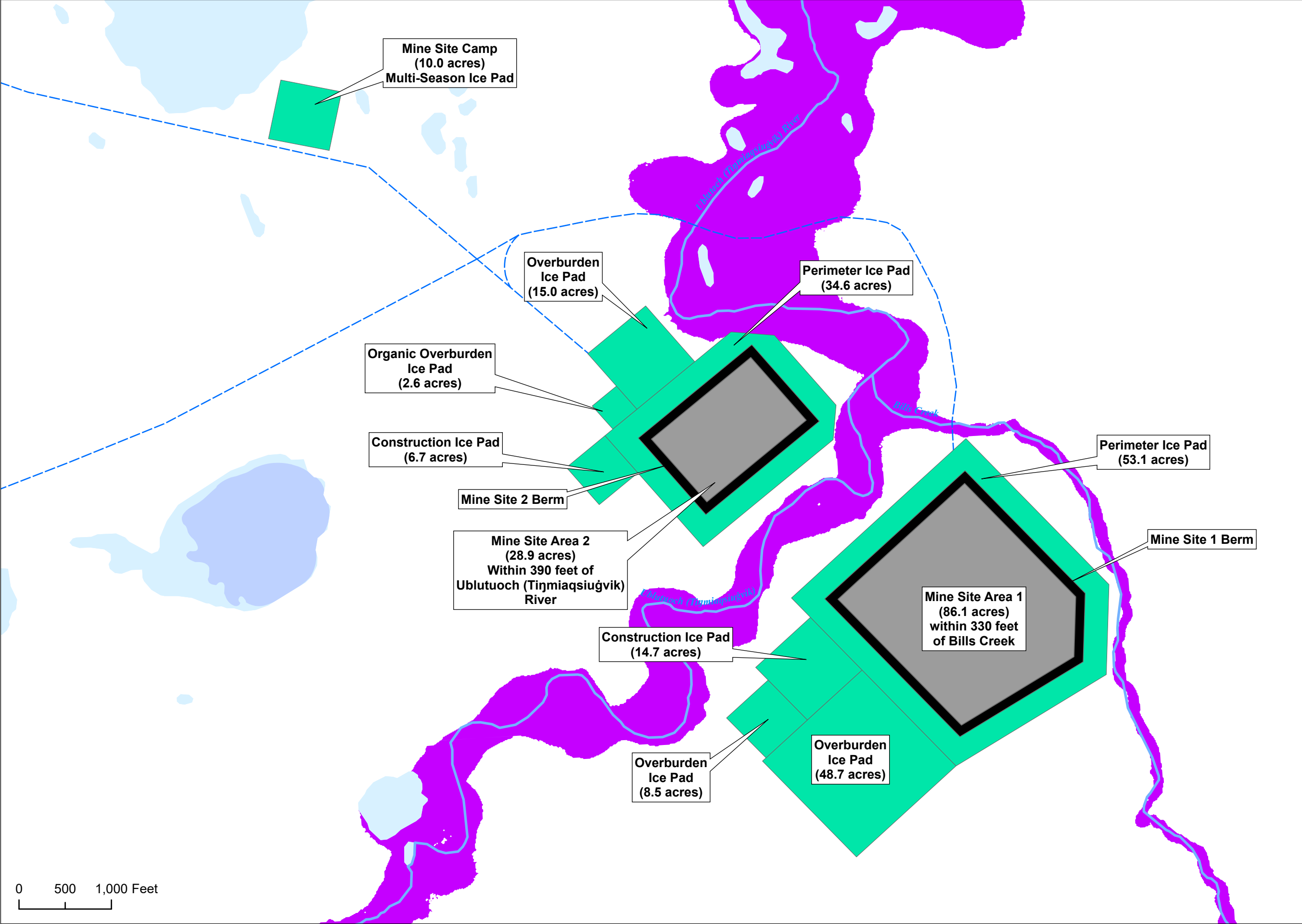
- 50-Year
- 100-Year

Data Source:
North Slope Science Initiative (2009)
Alaska Department of Fish and Game (2018)

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Figure 2.5.2B



Willow Proposed Development Features

- Ice Road
- Excavation
- Berm
- Ice Pad

Waterbodies

- Anadromous Stream
- Winter Liquid Water Availability

Floodplain

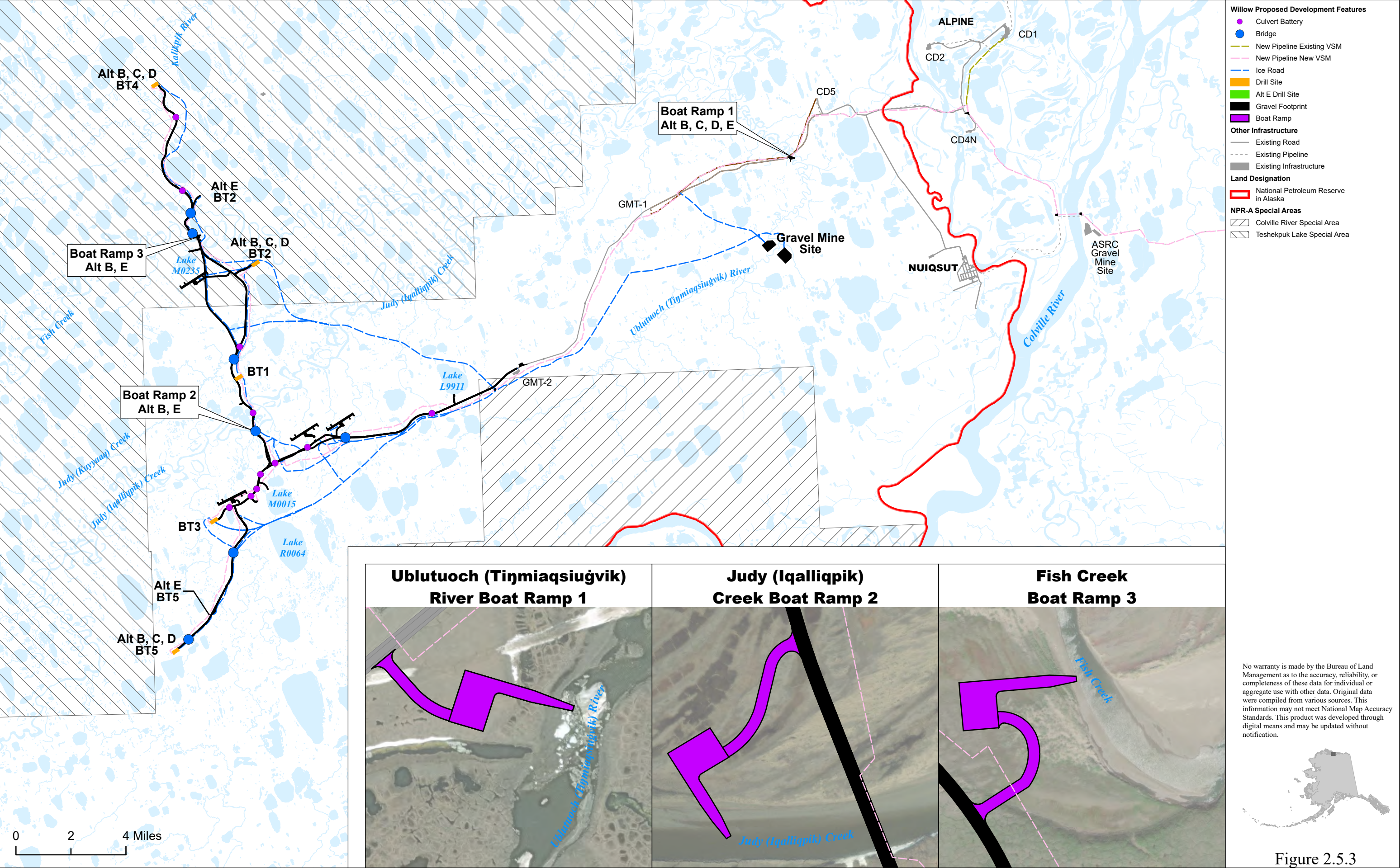
- 50-Year
- 100-Year

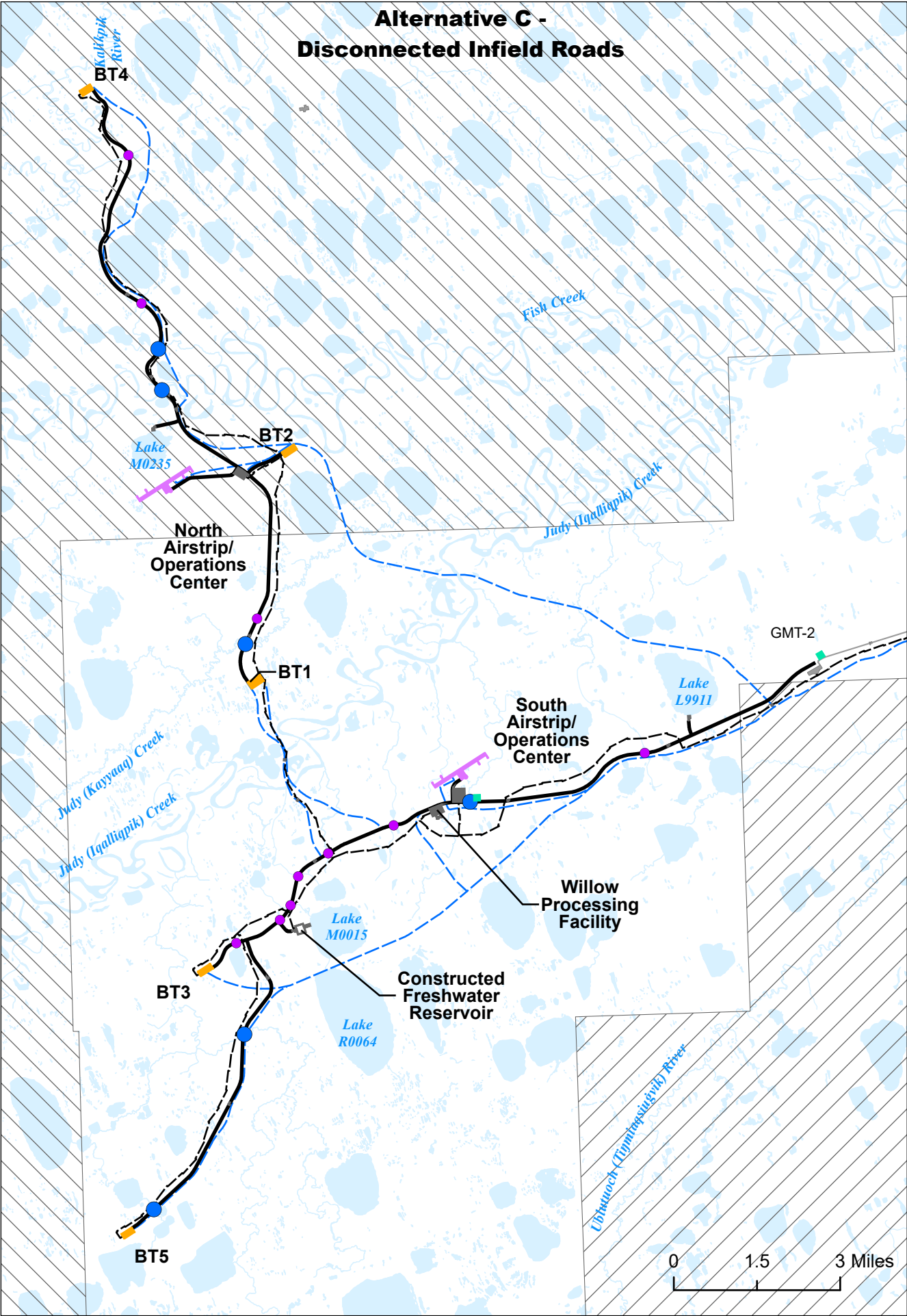
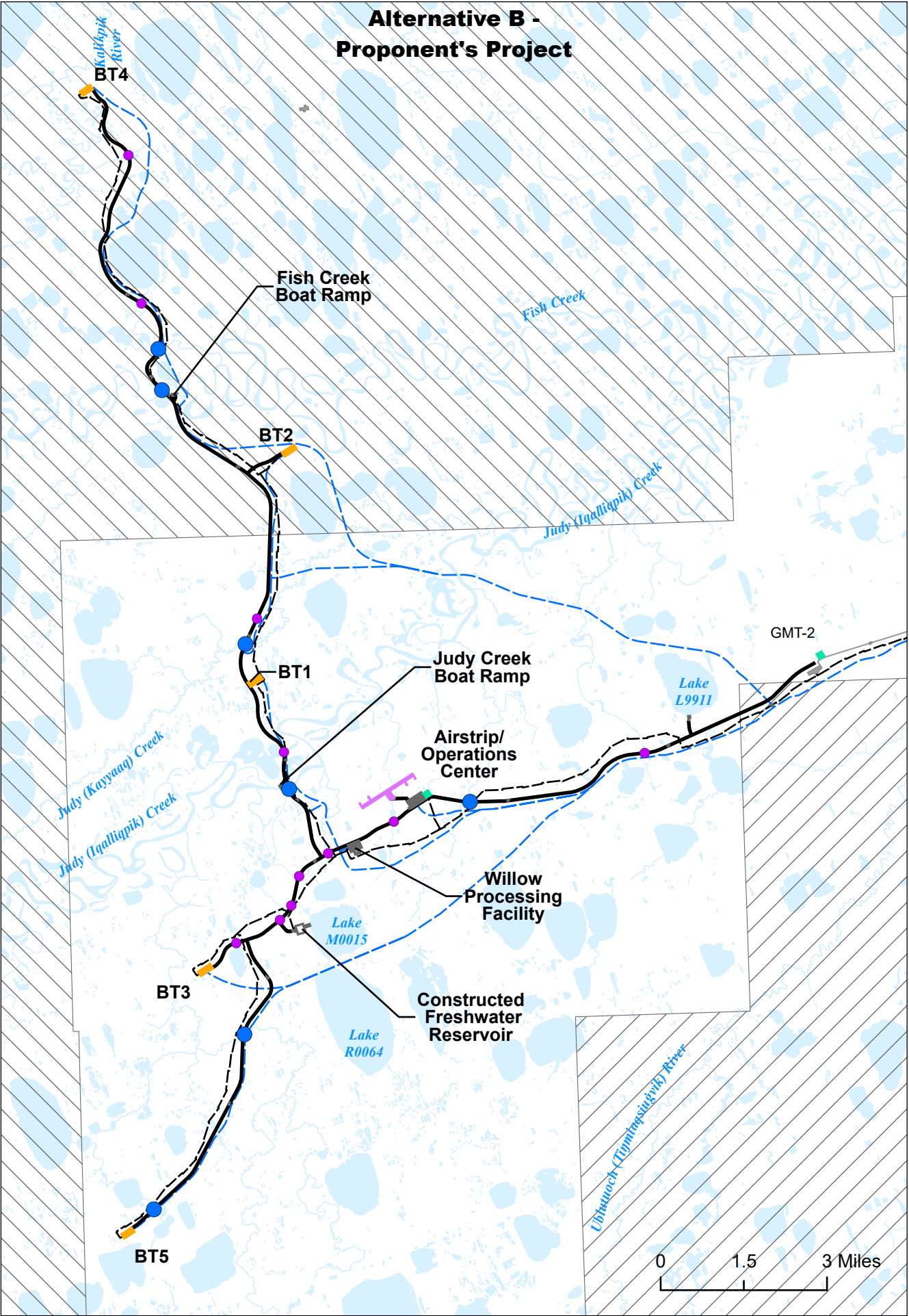
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Figure 2.5.2C





Willow Proposed Development Features

- Culvert Battery
- Bridge
- Gravel Road
- Pipeline
- Ice Road
- Airstrip
- Drill Site Pad
- Gravel Pad
- Ice Pad

Other Infrastructure

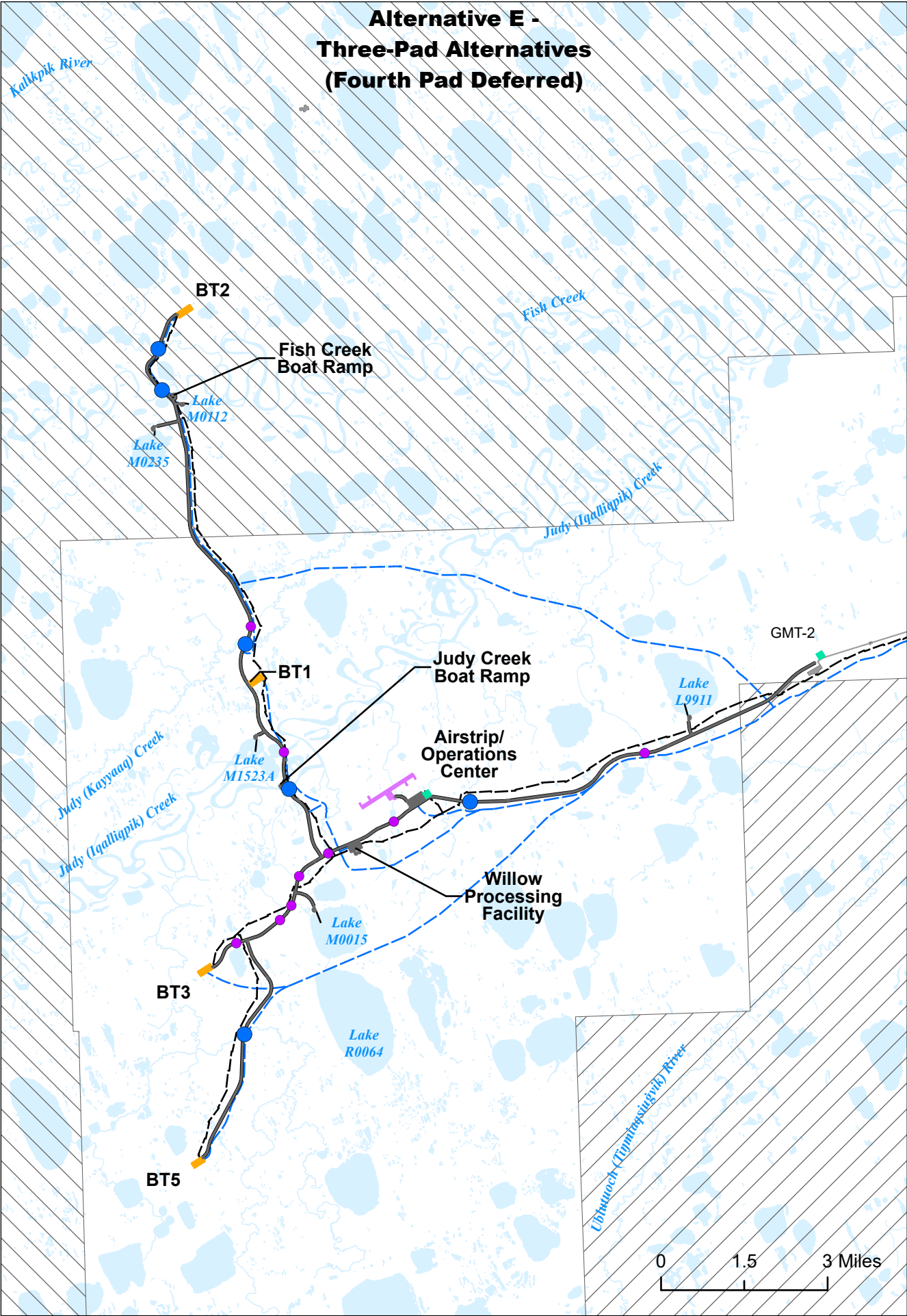
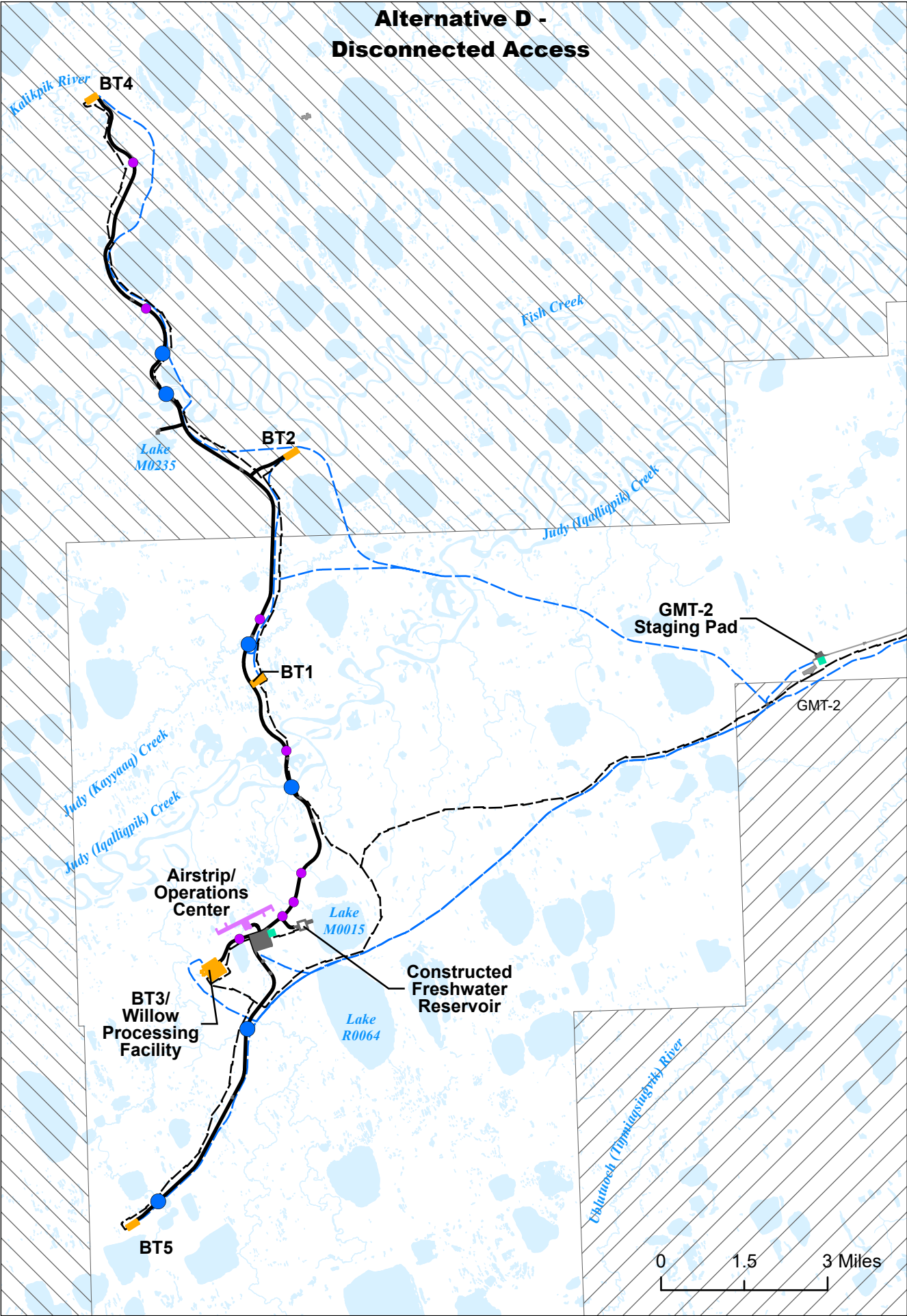
- Existing Road
- Existing Pipeline
- Existing Infrastructure

NPR-A Special Areas

- Colville River Special Area
- Teshekpuk Lake Special Area

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Figure 2.7.1A



Willow Proposed Development Features

- Culvert
- Bridge
- Gravel Road
- Pipeline
- Ice Road
- Airstrip
- Drill Site Pad
- Gravel Pad
- Ice Pad

Other Infrastructure

- Existing Road
- Existing Pipeline
- Existing Infrastructure

NPR-A Special Areas

- Colville River Special Area
- Teshekpuk Lake Special Area

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Figure 2.7.1B