

PORT MACKENZIE:

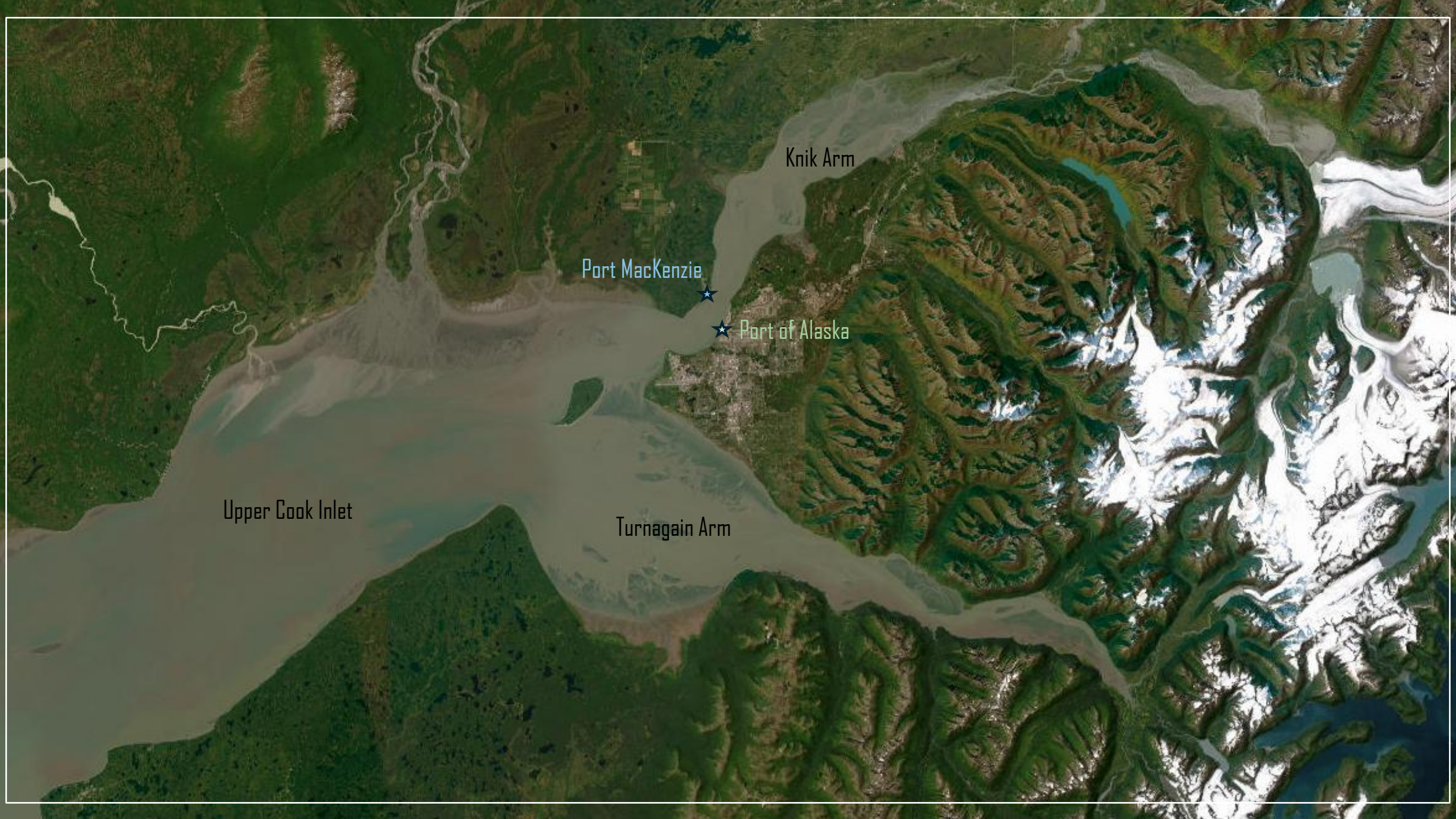
*NAVIGATING TIDES, CURRENTS, AND ICE
IN UPPER COOK INLET*



Cook Inlet Harbor Safety Committee

Thursday, October 16, 2025

David Griffin
Director of Port MacKenzie
Matanuska-Susitna Borough



Knik Arm

Port MacKenzie

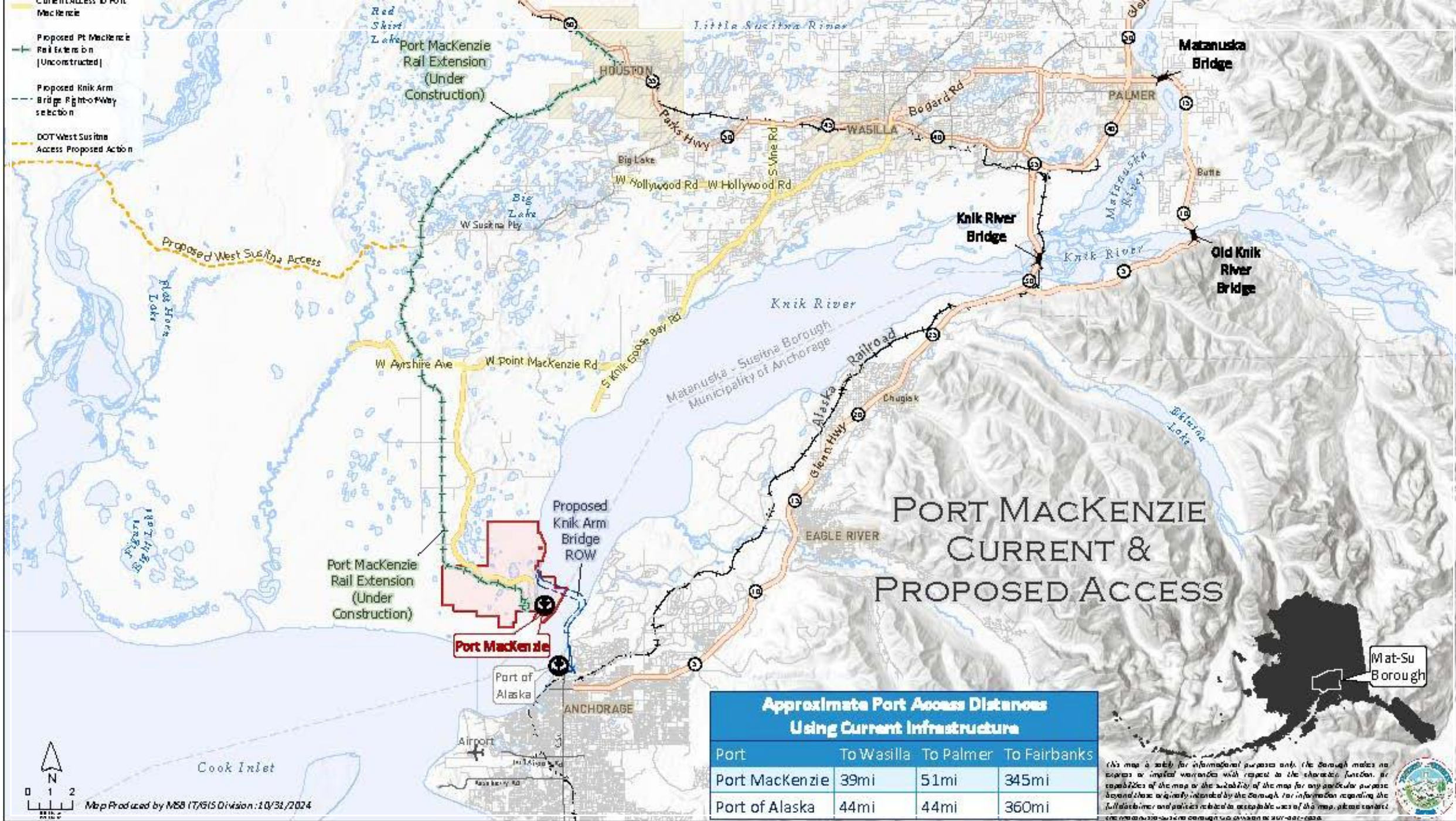
Port of Alaska

Upper Cook Inlet

Turnagain Arm



Port MacKenzie and Port of Alaska (Anchorage) – Only 2 Miles Apart





Paved Access Road, High Mast Lights, Gravel Pad, Three-Phase Power, Terminal Building, and Dock



Port District Uplands

This aerial photograph captures the Port MacKenzie facility. The upper portion of the image shows the 'Port District Uplands', a lush green forested area with a winding road and a golf course in the distance. Below the uplands is a large, flat, sandy area that serves as a construction or staging zone. In the lower-left, a small white building with a blue roof sits on a rocky shore. To its right is the 'Barge Dock', a curved concrete pier with a crane. Extending from the barge dock into the water is the 'Deep Draft Dock', a long pier with multiple cranes and yellow pilings. The water is calm and reflects the sky.

Barge Dock

Deep Draft Dock

Port
MacKenzie



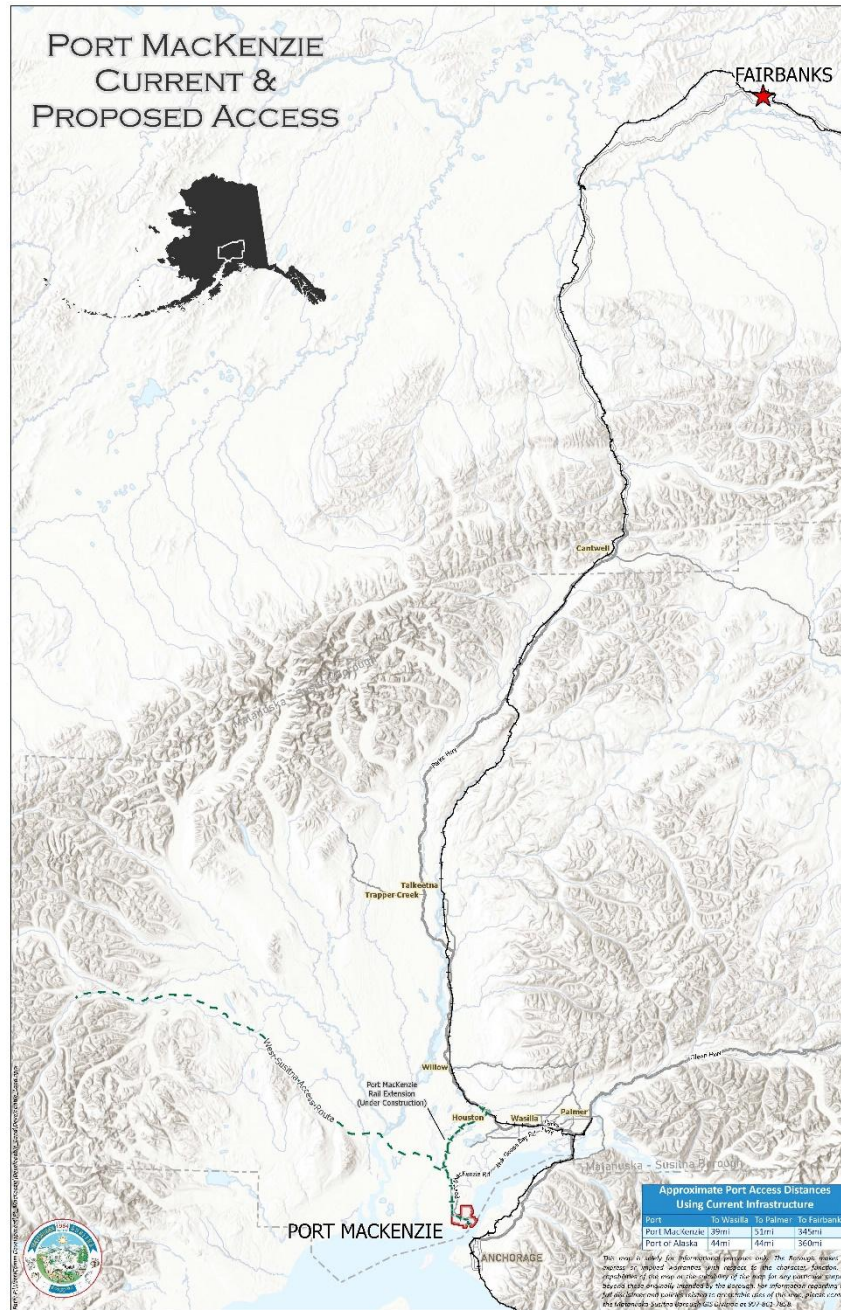
A large black and white cargo ship, the JP Azure, is docked at a deep draft dock. The ship has a pinkish-red hull and is moored with thick ropes. A tugboat is visible to the right. The dock structure includes a trestle, platform, catwalk, and various mooring equipment. The background shows a body of water and distant hills under a cloudy sky.

The Deep Draft Dock Consists of Trestle, Platform, Catwalk, Lighting, Breasting Dolphins, Mooring Dolphins, Motorized Capstans, and Quick Release Mooring Hooks

JP Azure, June 2010 736' Long x 121' Wide, 37.5' Draft



PORT MACKENZIE CURRENT & PROPOSED ACCESS

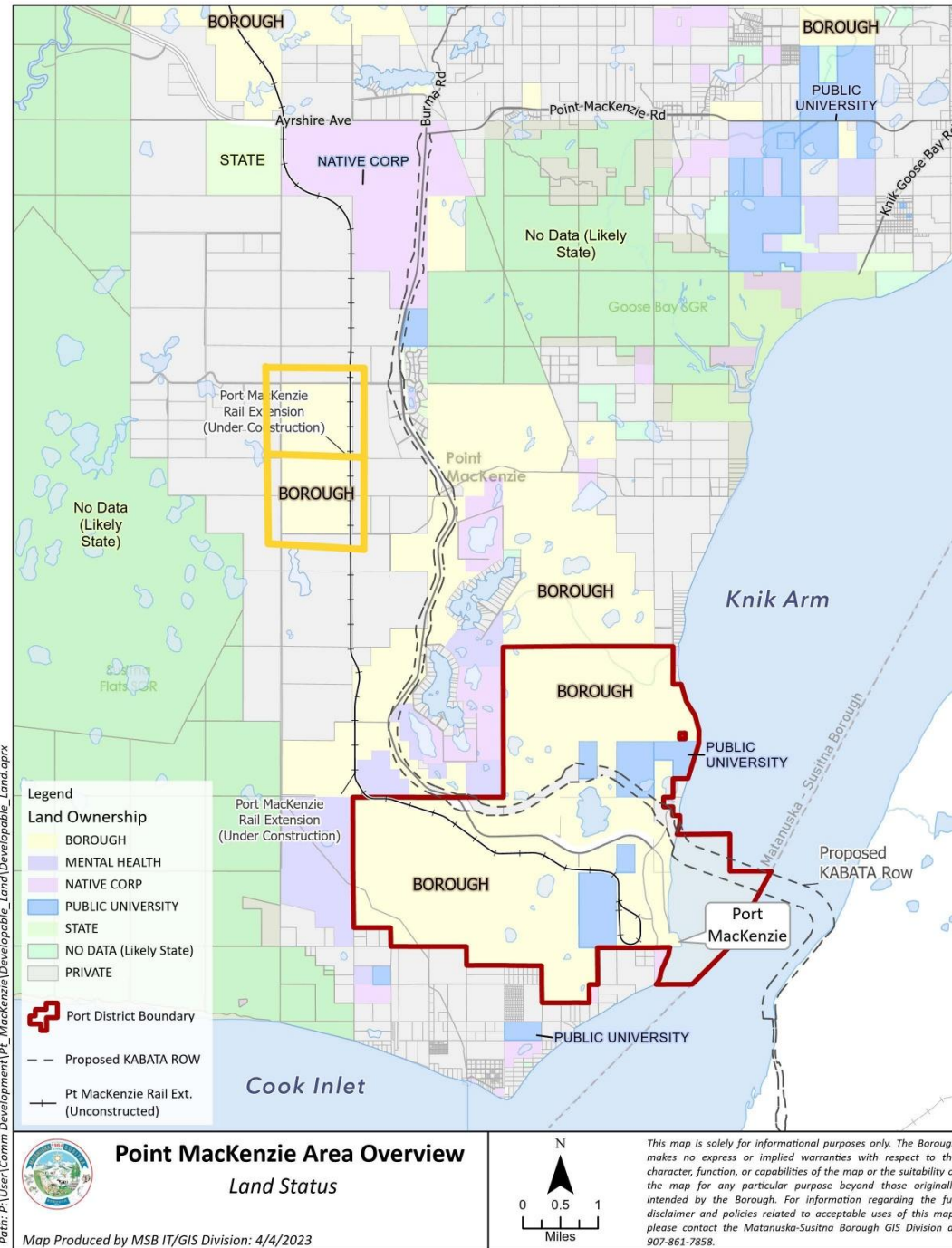


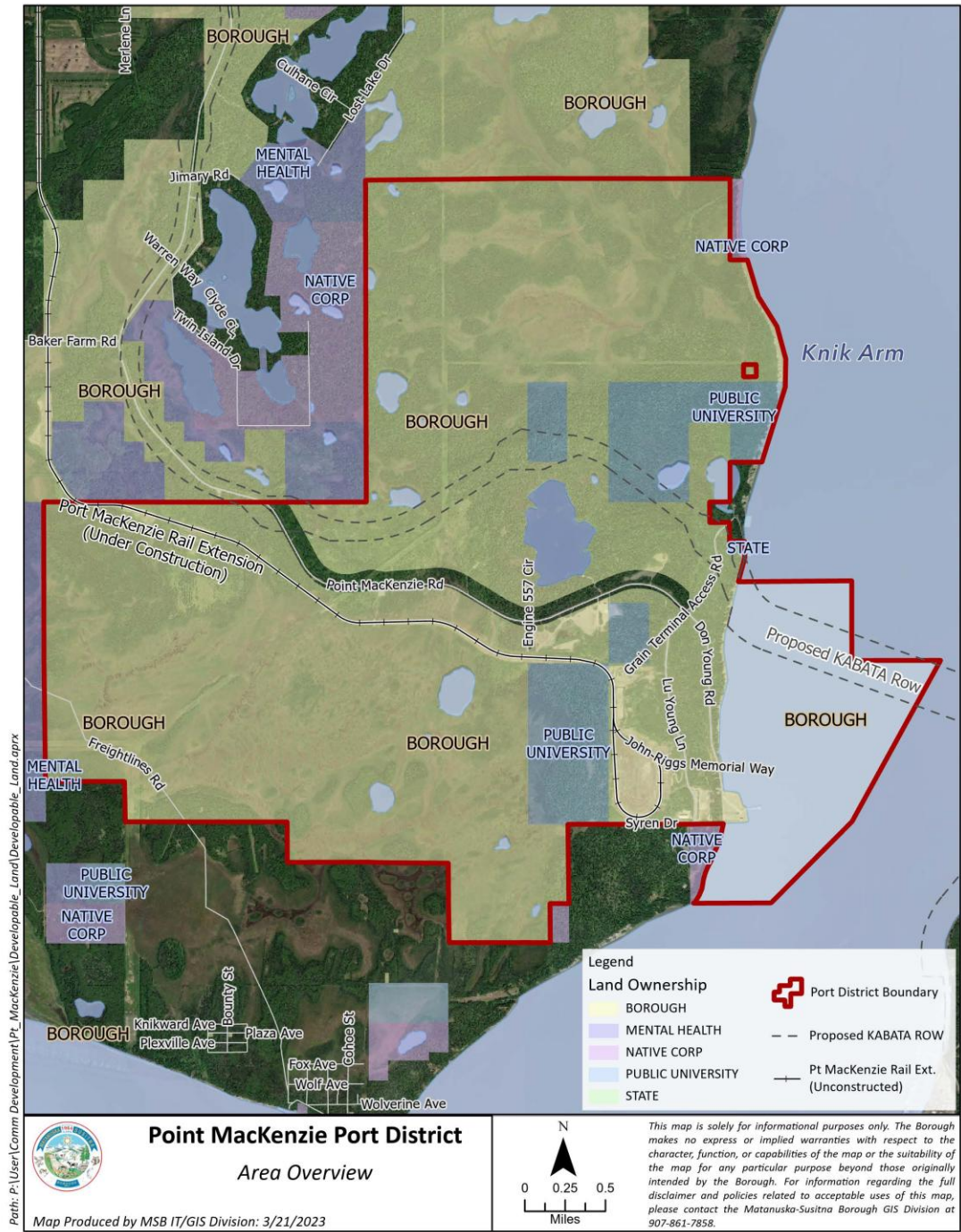
**Approximate Port Access Distances
Using Current Infrastructure**

Port	To Talkeetna	To Palmer	To Fairbanks
Port Mackenzie	85mi	153mi	345mi
Port of Alaska	44mi	64mi	360mi

This map is solely for informational purposes only. The Railroad shows "as shown" or "as planned" distances only subject to the standard disclaimer. All measurements of this map are for informational purposes only. The Railroad does not warrant the accuracy of the map or the distances shown. The Railroad does not warrant the accuracy of the map or the distances shown. The Railroad does not warrant the accuracy of the map or the distances shown.

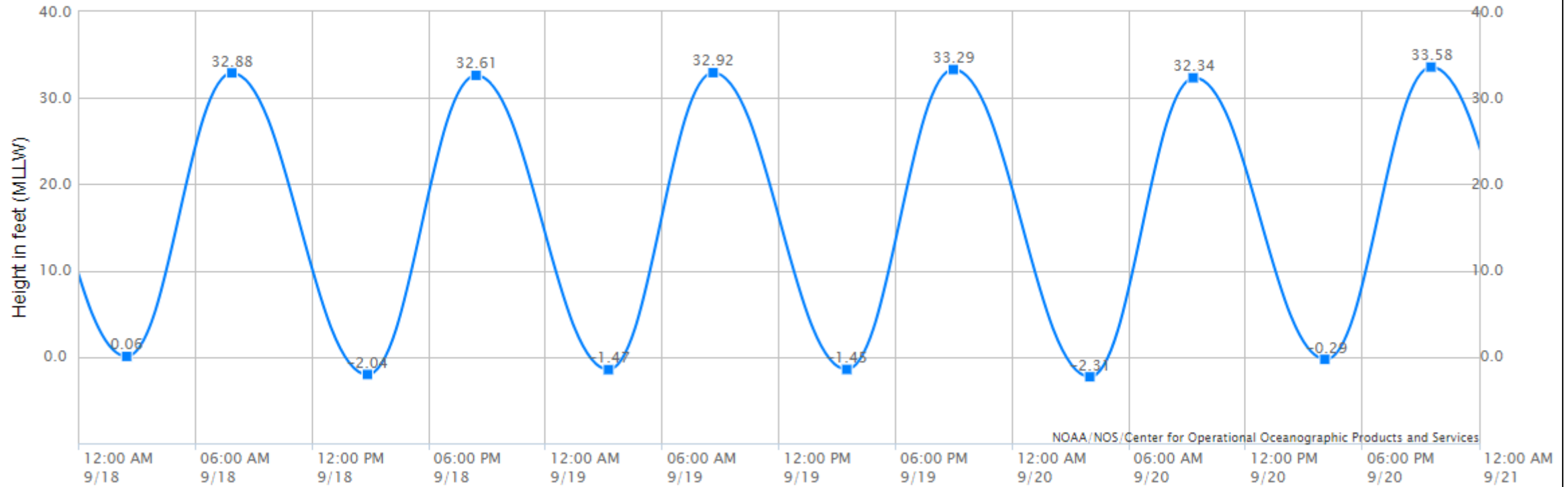
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TIDES

NOAA/NOS/CO-OPS
Tide Predictions at 9455920, Anchorage AK
From 2024/09/18 12:00 AM LST/LDT to 2024/09/20 11:59 PM LST/LDT



Port MacKenzie
(see Figure 1-2) 

Flood Tide
Ebb Tide

Cook Inlet

Anchorage

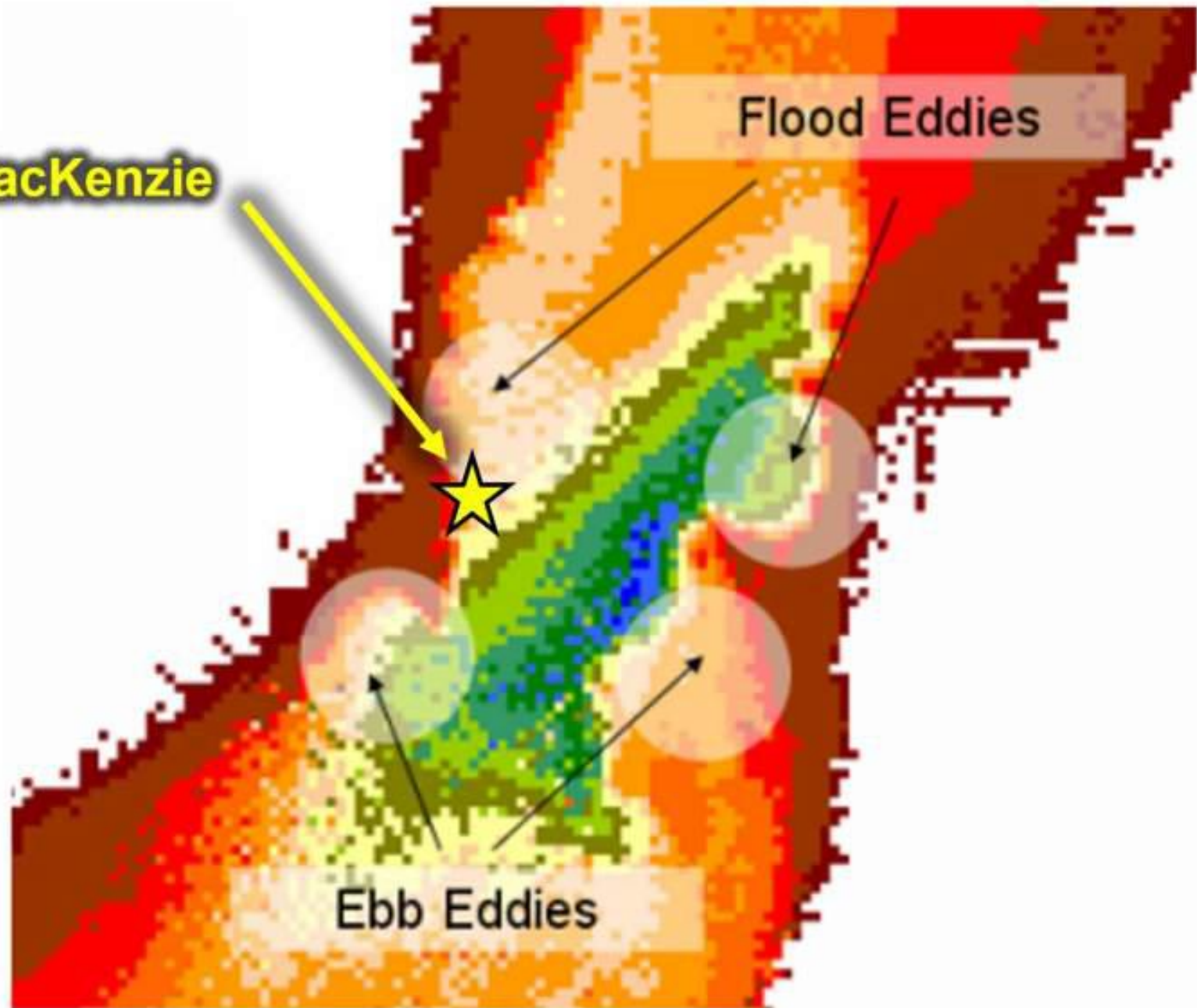


0 2 4 Miles

Port MacKenzie

Flood Eddies

Ebb Eddies





Bow Ramp

High Tide



Barge Dock
375' Long
-20' at MLLW

Tidal Fluctuations Average 30'+ Tide Cycle
Outgoing Tide (Ebb) Avg. Speed 5-7 Knots
Incoming Tide (Flood) Avg. Speed 3-4 Knots

Industrial Brio, July 2014
390' Long x 64' Wide, 25' Draft

Deep Draft Dock Piles
Exposed at Low Tide

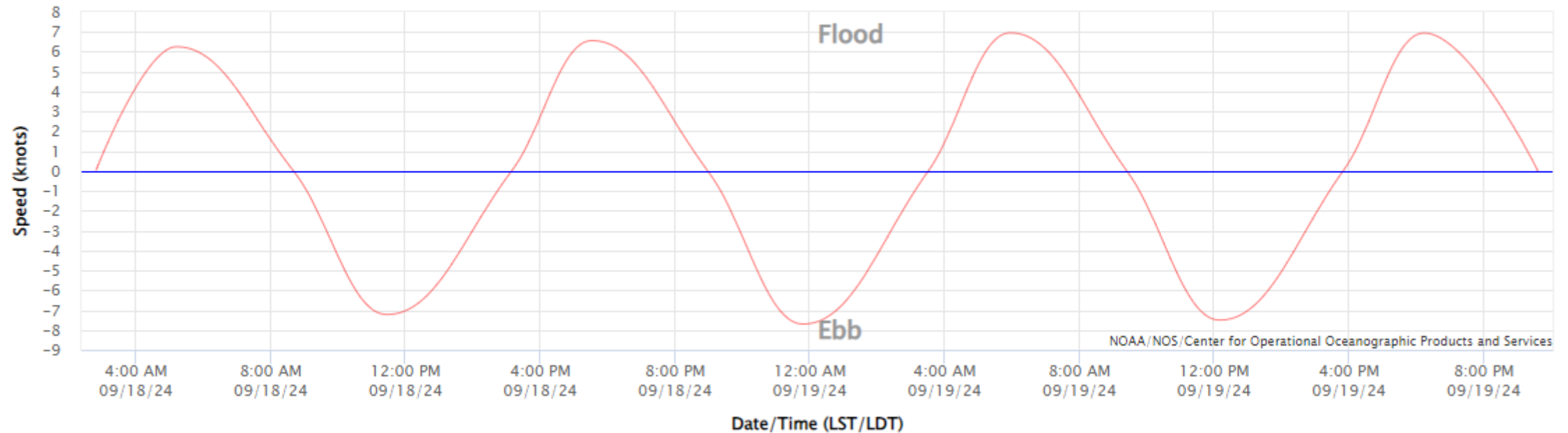




Barge Loadout
At the Bow Ramp

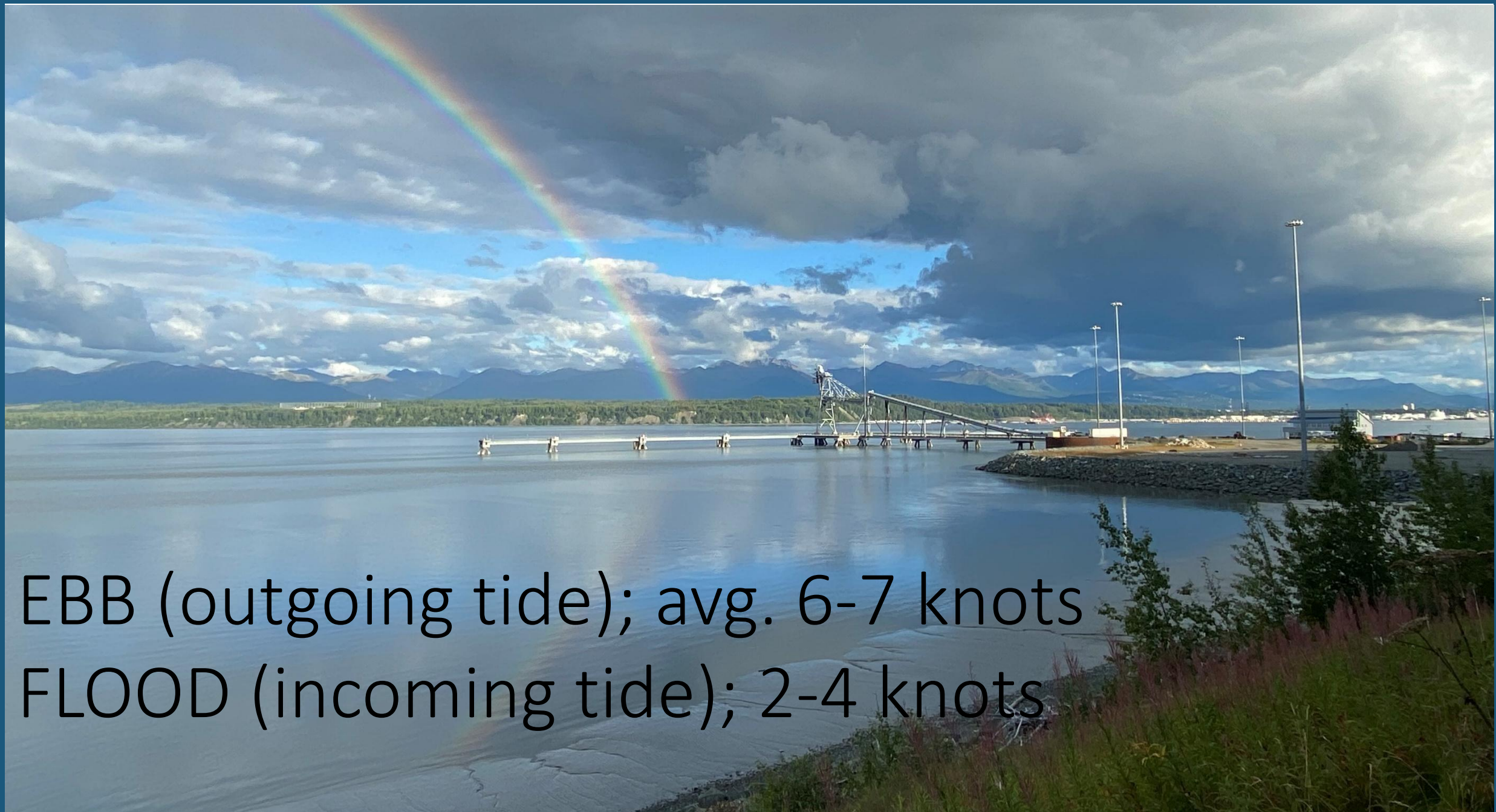
CURRENT

NOAA / NOS / CO-OPS
Tidal Current Predictions at COI0301, Knik Arm, NW of Anchorage; Depth: 10 feet
From 2024-09-18 to 2024-09-19 (LST/LDT)
Mean Flood Dir: 15° (T); Mean Ebb Dir: 192° (T)



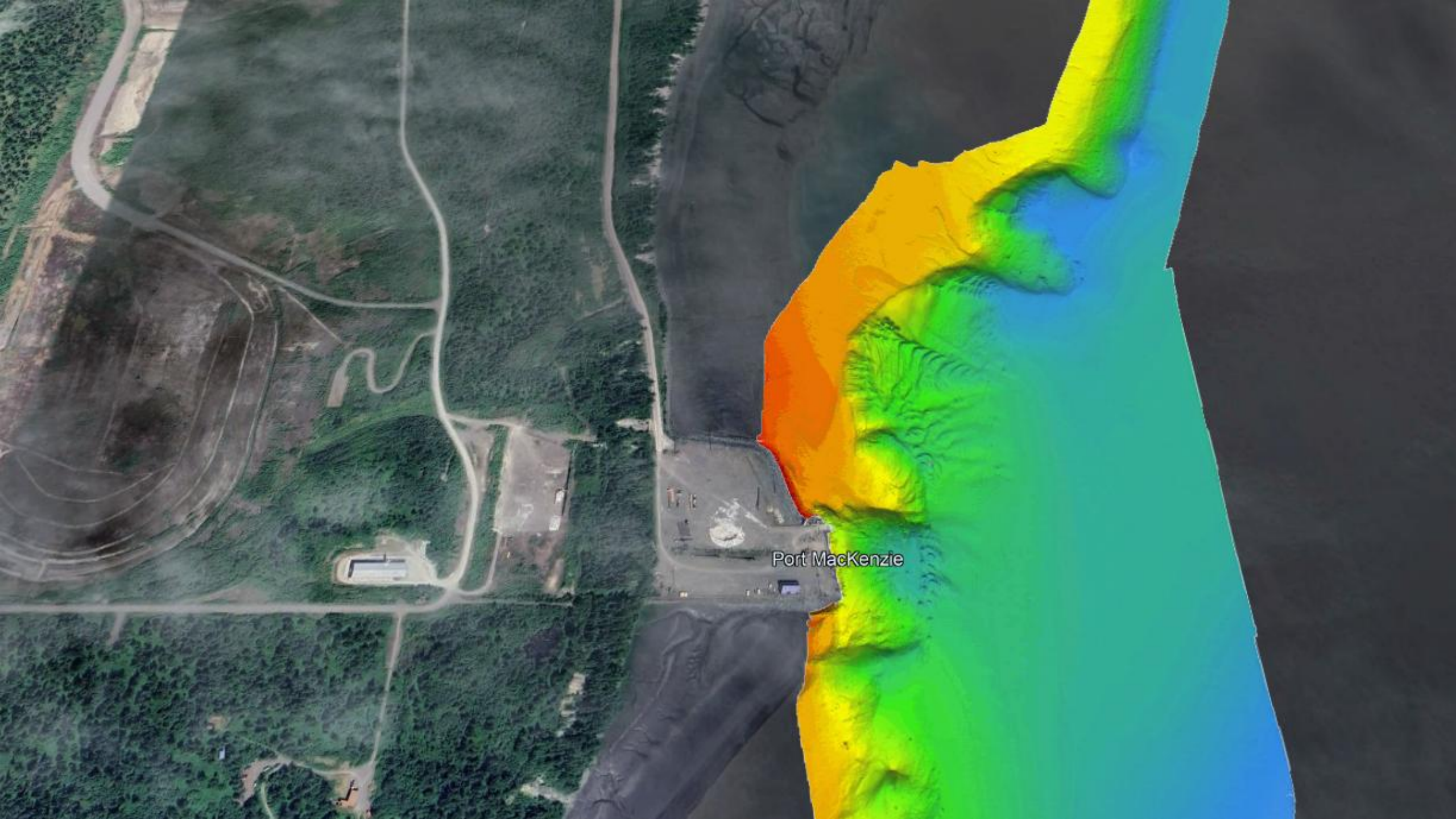
NOAA/NOS/Center for Operational Oceanographic Products and Services

Disclaimer: The predictions from NOAA Current Predictions are based upon the latest information available as of the date of your request.



EBB (outgoing tide); avg. 6-7 knots
FLOOD (incoming tide); 2-4 knots

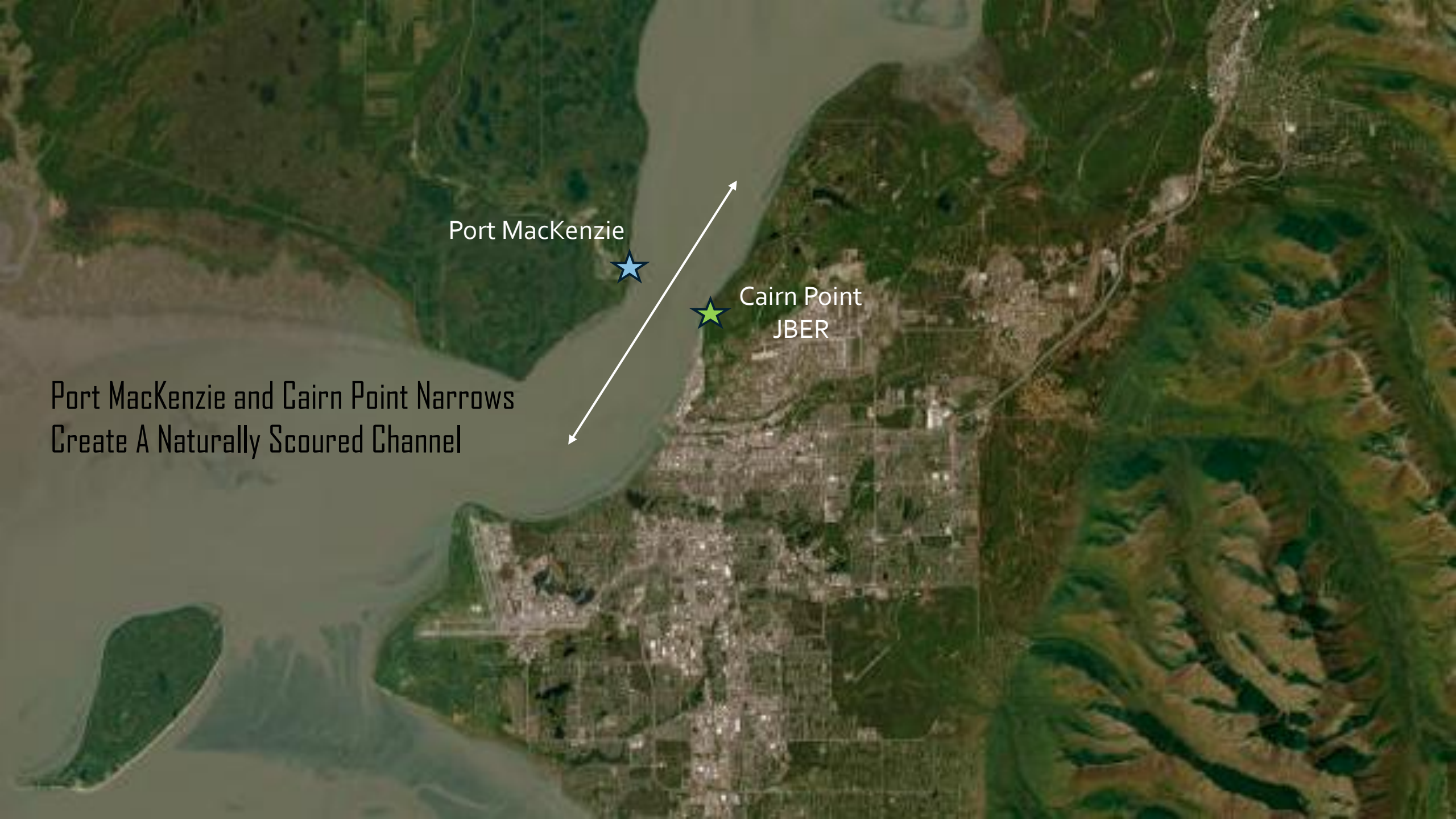




Port MacKenzie



Dredging is Not Required At Port MacKenzie

A satellite map showing a coastal area with a large body of water on the left and a narrow channel leading to a town on the right. The town is surrounded by green hills. A blue star marks a point on the left side of the channel, and a green star marks a point on the right side. A white double-headed arrow connects these two points, passing through the narrow channel. The text 'Port MacKenzie' is located above the blue star, and 'Cairn Point JBER' is located above the green star. The text 'Port MacKenzie and Cairn Point Narrows Create A Naturally Scoured Channel' is located on the left side of the image.

Port MacKenzie



Cairn Point
JBER



Port MacKenzie and Cairn Point Narrows
Create A Naturally Scoured Channel



ICE





Keoyang Majesty, February 3, 2005



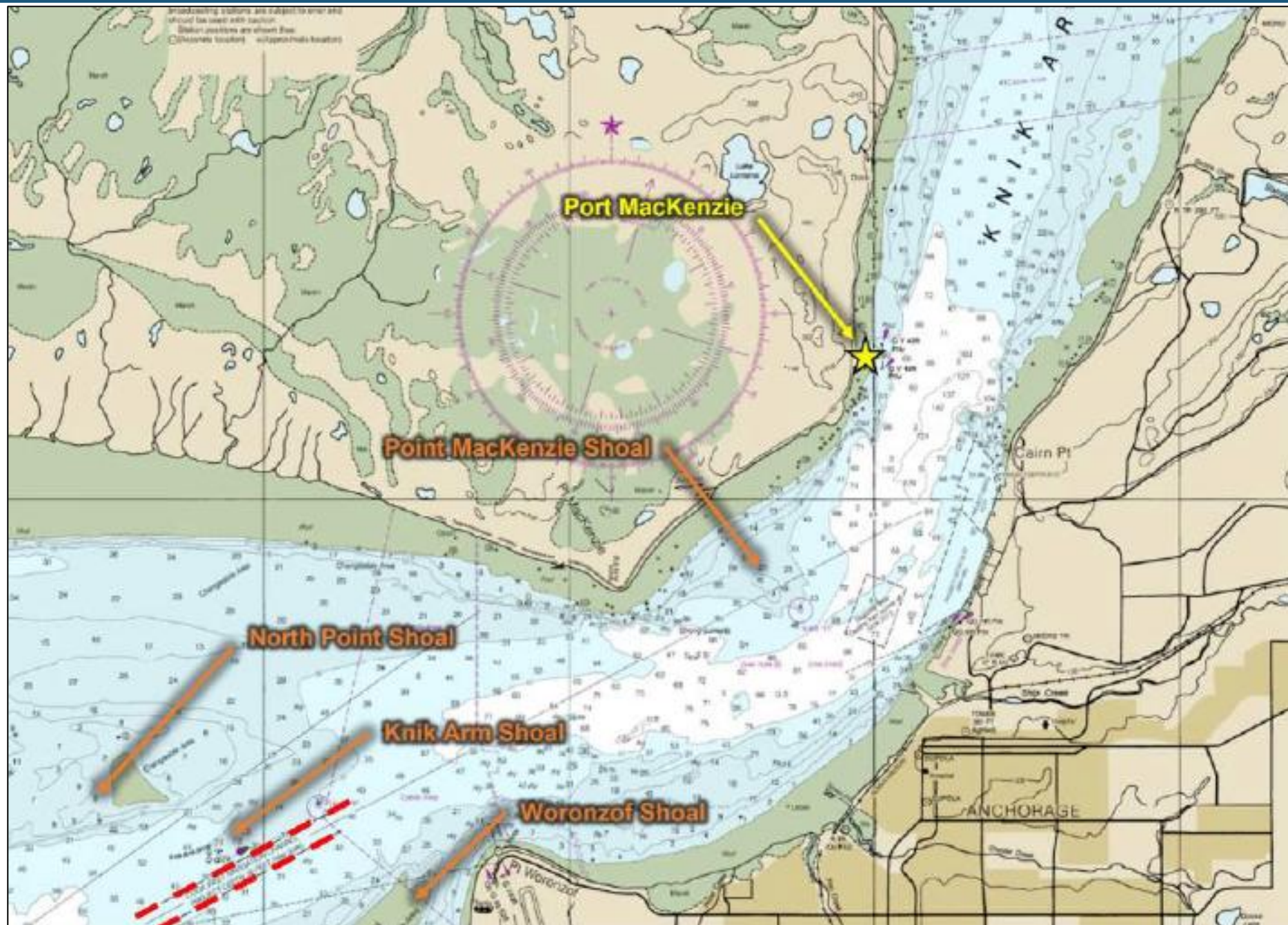
Keoyang Majesty, February 9, 2005

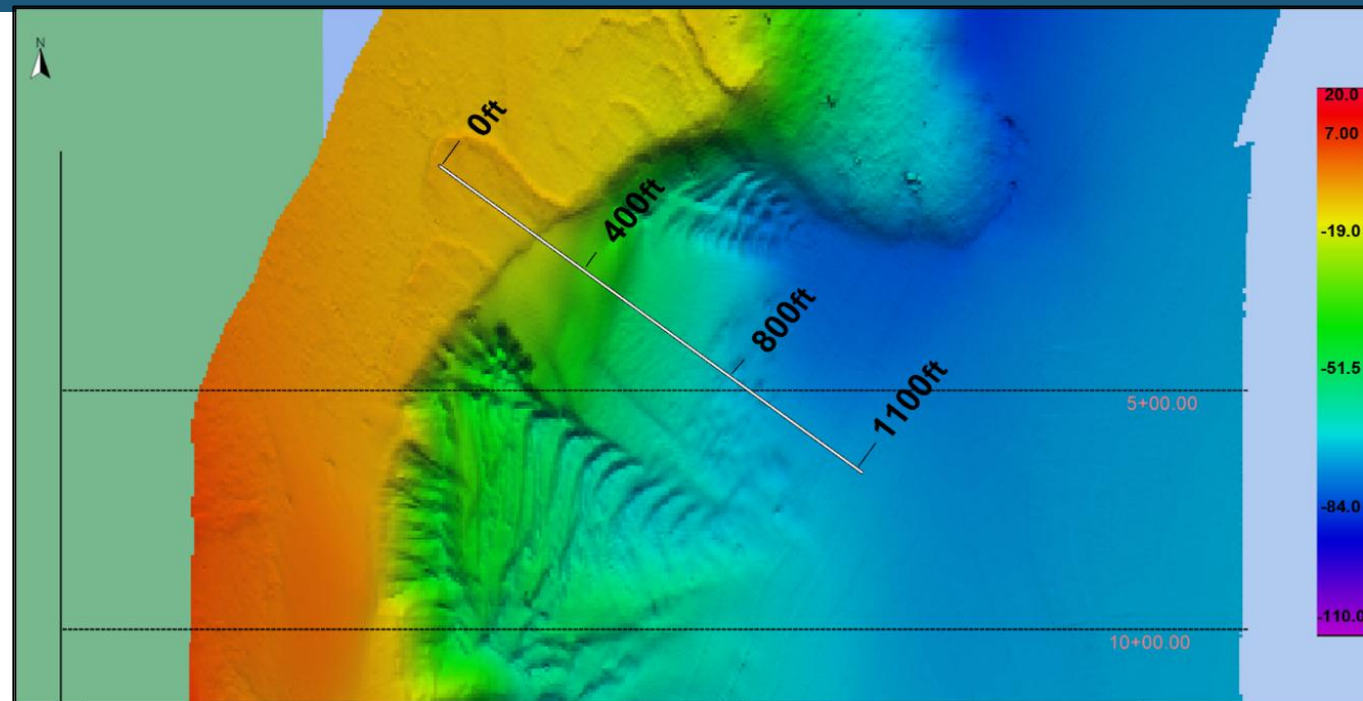
SEDIMENT





KNIK RIVER







Barge Dock Sheet Pile Face Bulkhead





Sacrificial Anodes Installation
Summer of 2024





Barge Dock -20' MLLW

Deep Draft Dock -60' MLLW

Low Tide

Ise Harmony, July 2023

Pile Sleeve Project – Summer 2024









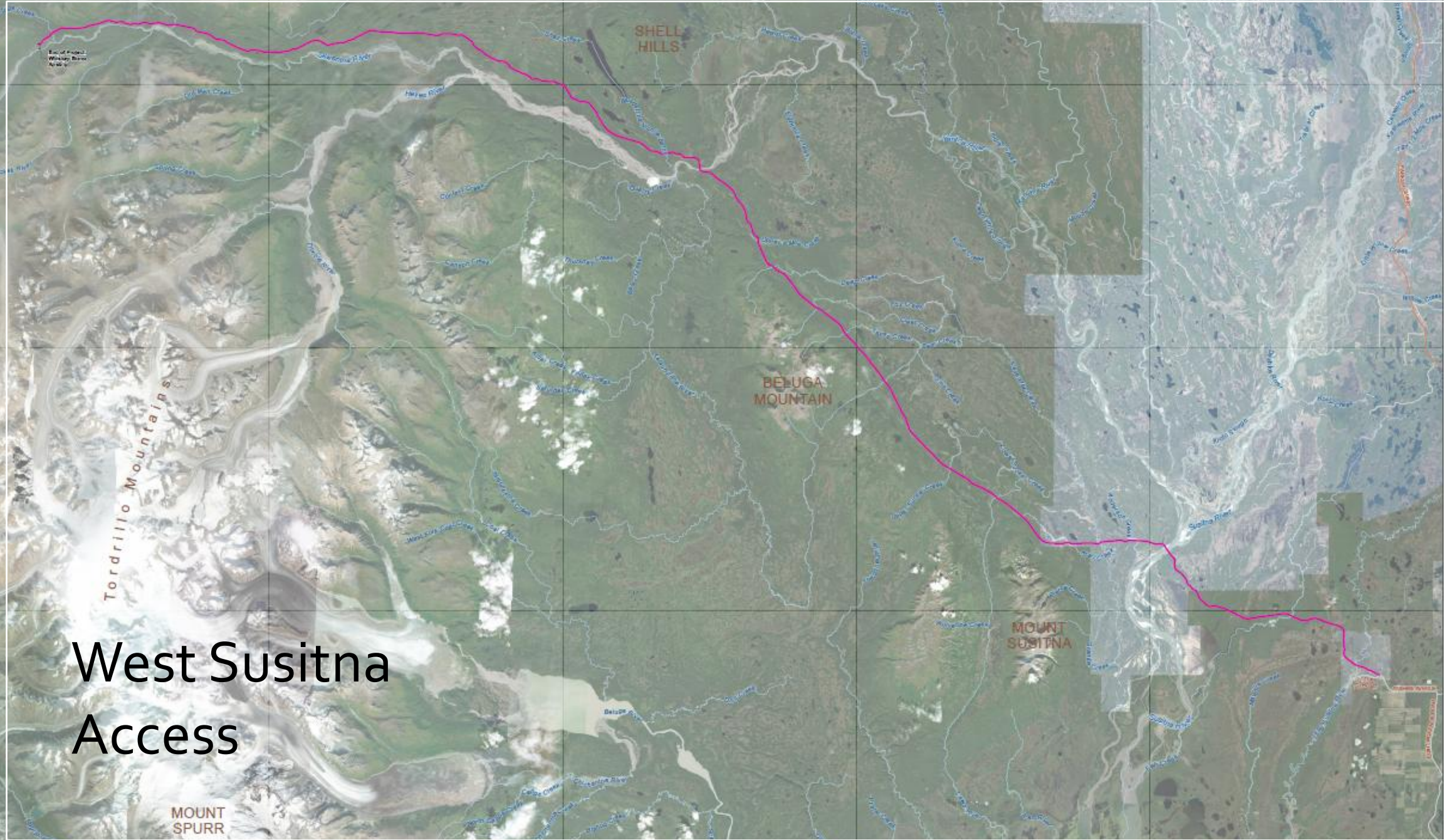
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Reviewed by: _____			Drawing scale: _____		
Submitted by: _____			Drawing title: _____		
CHARLES BALZARINI MOFFATT & NICHOL			File name: 1_1 (D-BH-EET)		
PORT MACKENZIE PILE SLEEVES AND RORO CARGO RAMP PILE SLEEVE AND CATHODIC PROTECTION FEDERAL AWARD ID NUMBER: 07-79-07638 VESSEL HAULOUT FACILITY CONCEPTUAL DESIGN					





Knik Arm Bridge

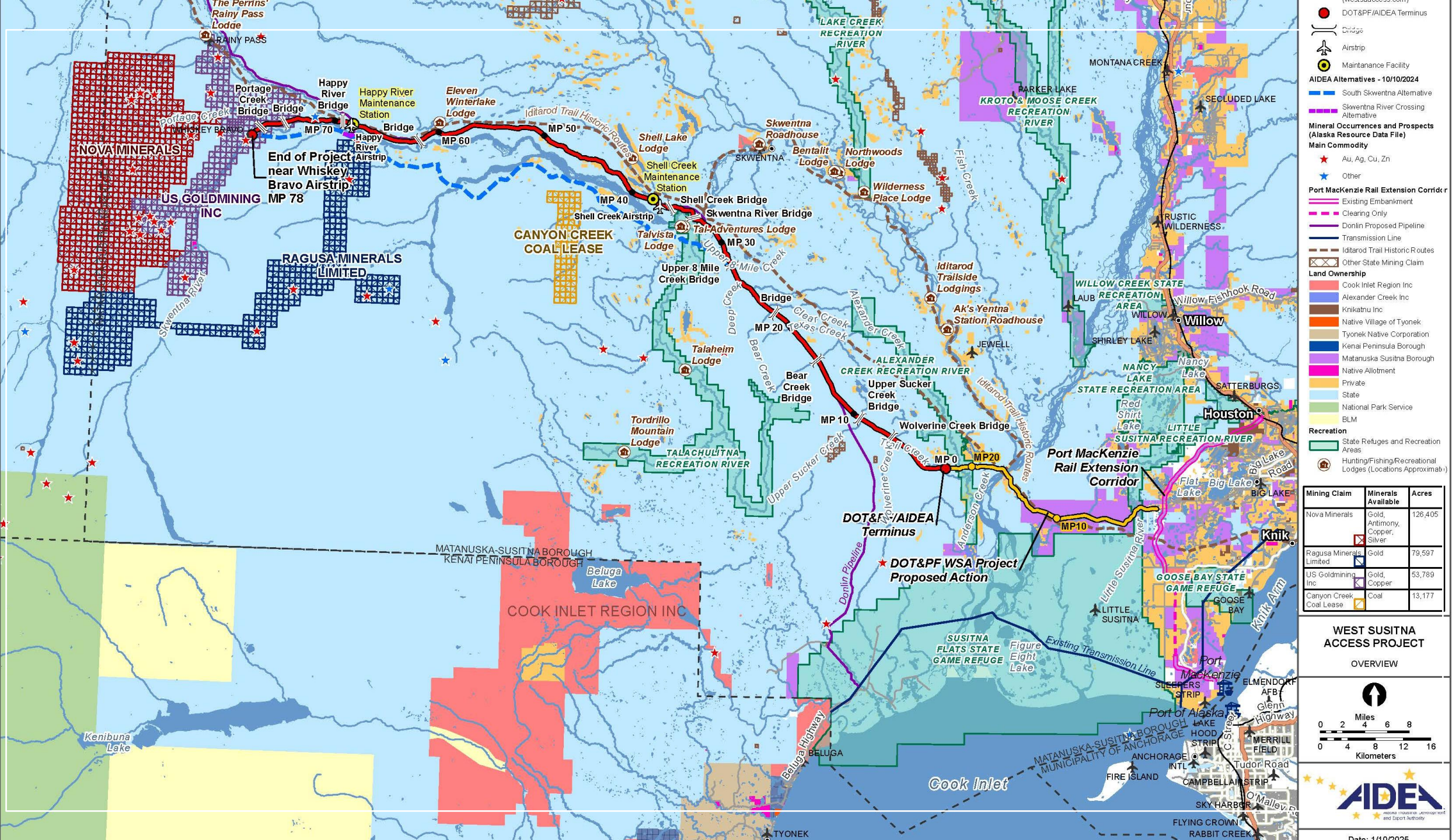




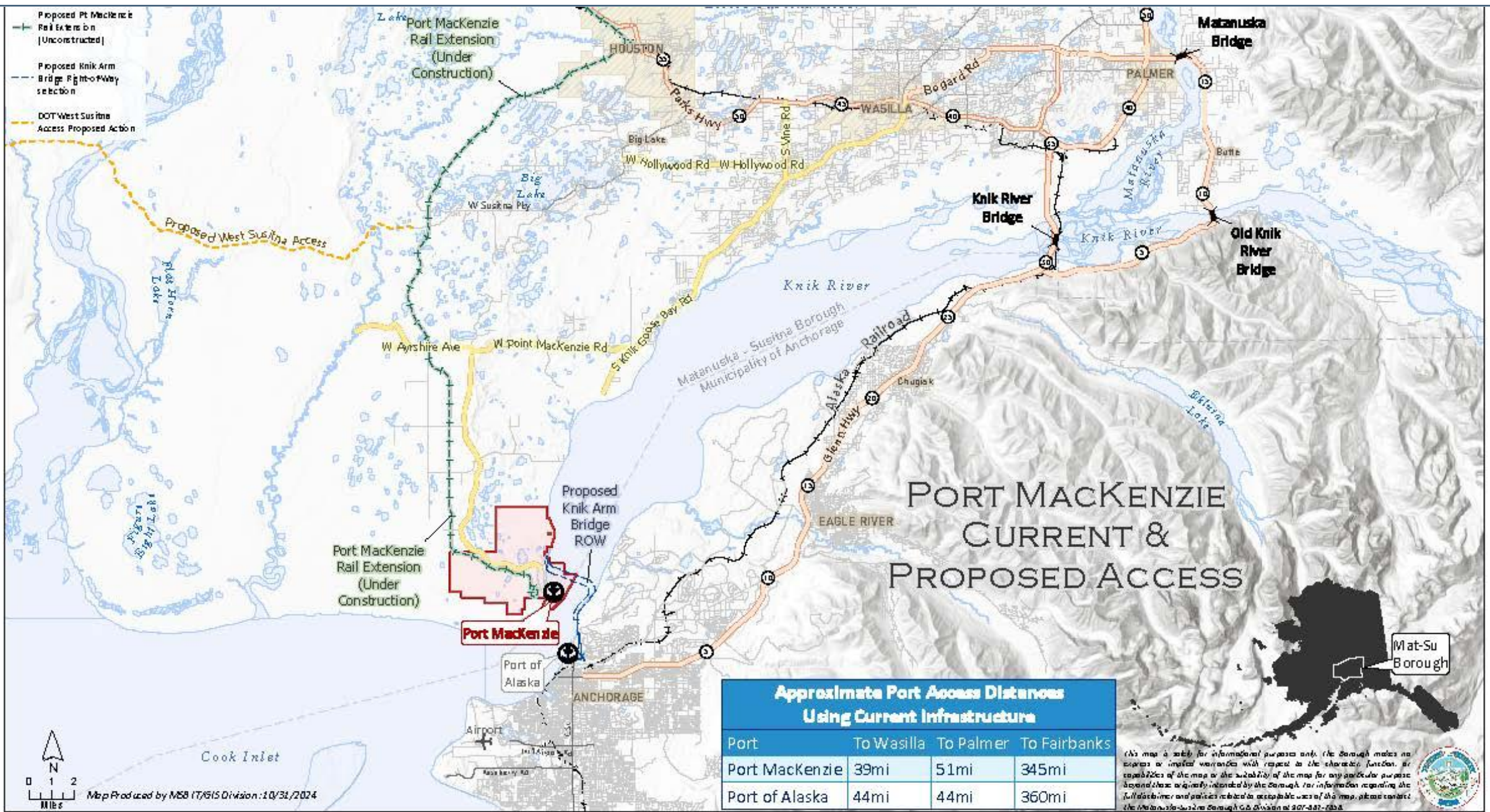
West Susitna Access





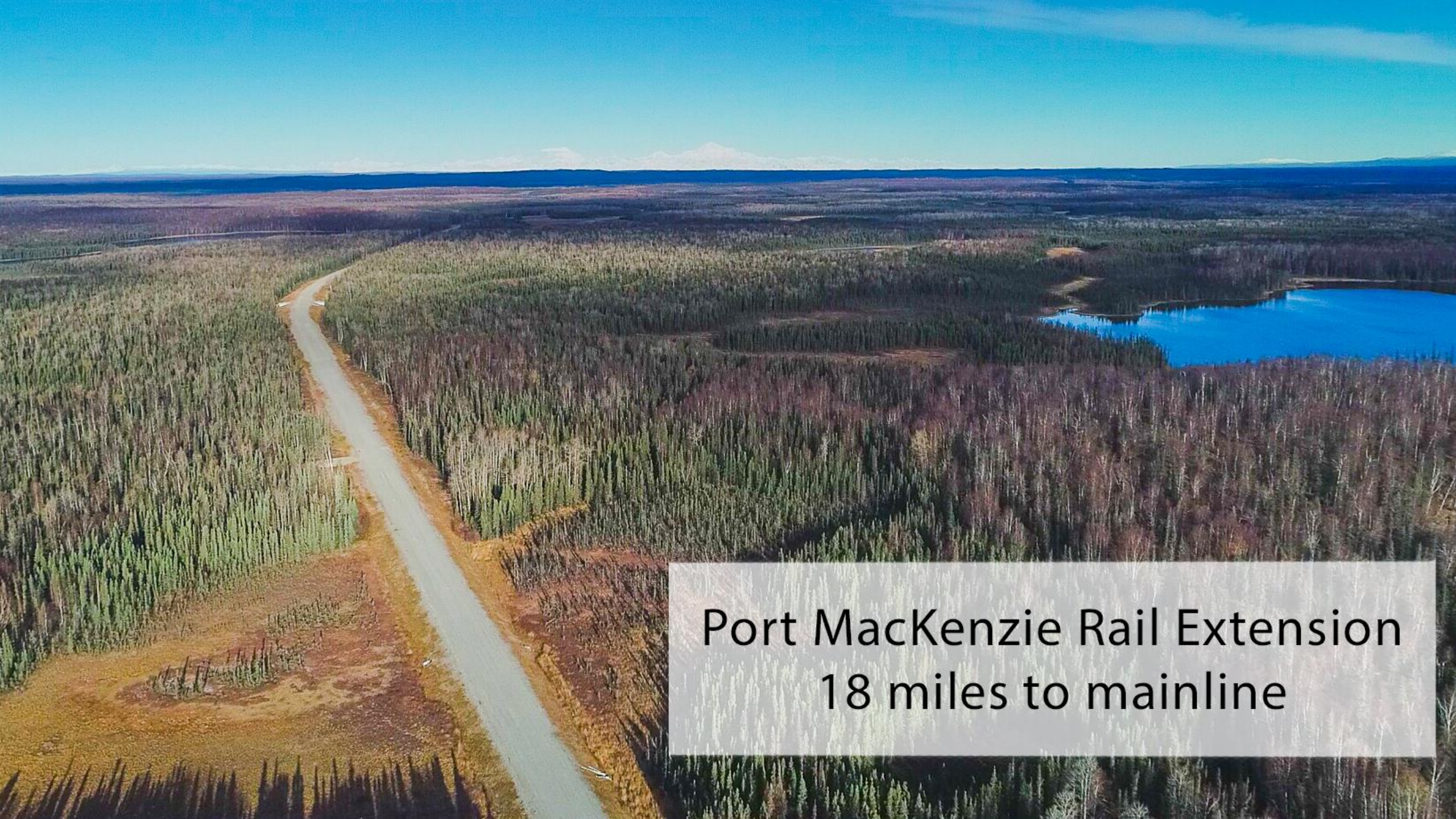






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Port MacKenzie Rail Extension
18 miles to mainline



**Port MacKenzie Rail
Extension - View SW
(Seg. 5,6)
18 miles to Titan Plant**

An aerial photograph showing a long, straight, light-colored rail extension cutting through a vast, dark, swampy landscape. The terrain is flat with scattered patches of snow and small, irregular ponds. In the far distance, a range of mountains with significant snow cover is visible against a clear blue sky. The rail line curves slightly to the right as it recedes into the distance.

Port MacKenzie Rail Extension
(seg. 5)
SW view

An aerial photograph showing a wide, snow-covered road or path that curves through a dense forest of evergreen trees. The road leads towards a large, frozen body of water, likely a lake or reservoir, which occupies the upper right portion of the image. The surrounding landscape is flat and covered in snow, with some distant structures visible on the horizon.

PMRE Segment 4

An aerial photograph of a winter landscape. A wide, snow-covered road with visible tire tracks curves from the bottom left towards the center of the image. To the left of the road is a dense forest of tall, thin trees, mostly without leaves. To the right of the road is a large, flat, snow-covered area that appears to be a frozen body of water or a cleared field, with some small evergreen trees scattered across it. In the background, there is a dense forest of evergreen trees, and further back, a range of mountains with snow-capped peaks under a clear blue sky.

Segment 3

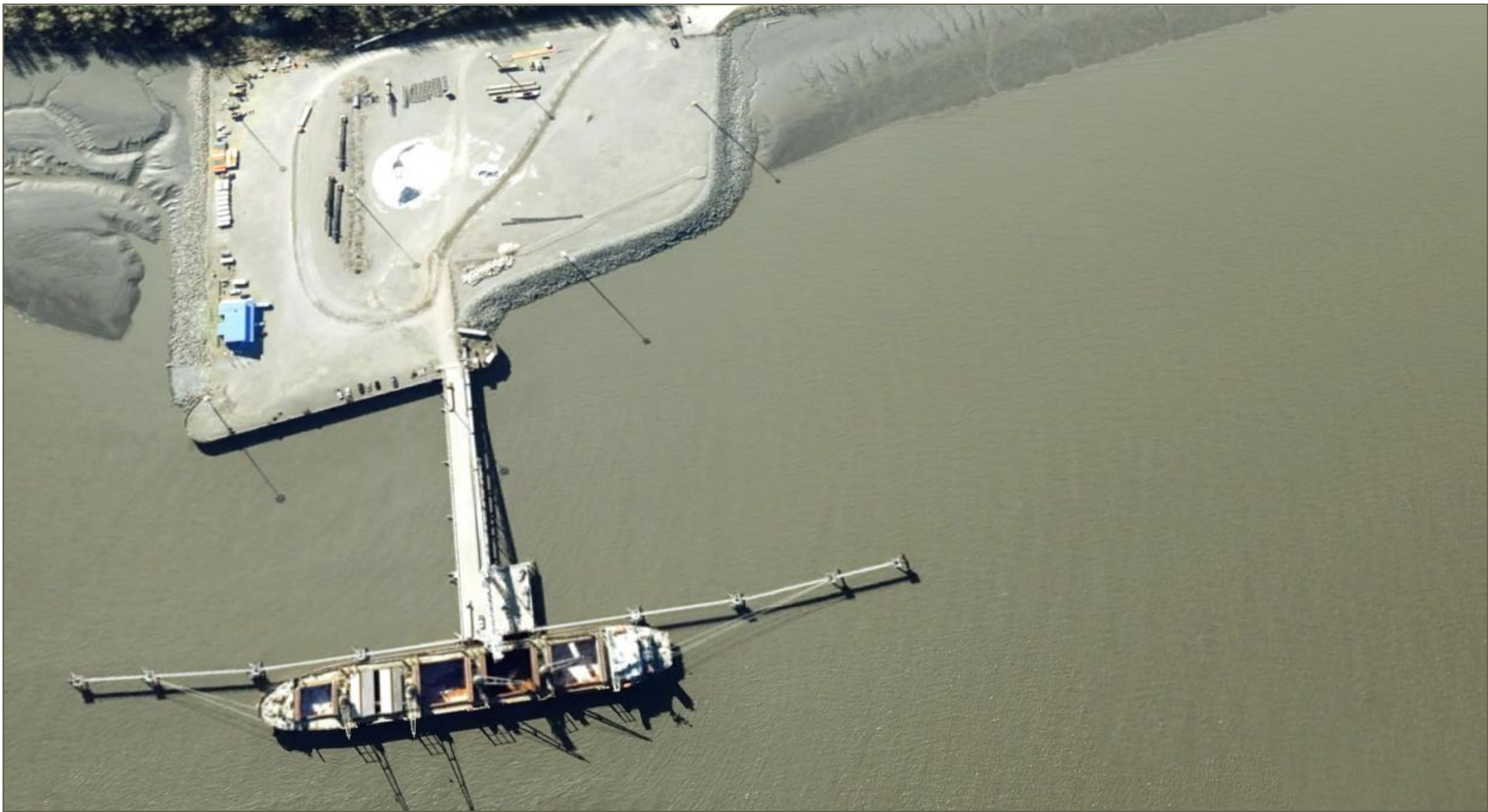
An aerial photograph showing a large dam structure with a central spillway and two long, sloping embankments on either side. The surrounding landscape is covered in snow, with patches of brown grass and small evergreen trees. A dense forest of tall evergreen trees is visible in the background. The reservoir behind the dam is partially frozen, with ice floes visible. The overall scene is a winter landscape.

PMRE Segment 1/2



PMRE Segment 1
– Rail Loop





David Griffin, Port Director
Phone: (907) 861-7799
Cell: (907) 707-4174
Email: david.griffin@matsugov.us
www.portmackenzie.matsugov.us

