



**Juneau Access Improvements Project
Final Supplemental
Environmental Impact Statement**

**2014 Update to Appendix O
Wetlands Technical Report
*2017 Errata***

Prepared for:

**Alaska Department of Transportation
& Public Facilities
6860 Glacier Highway
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Federal Project Number: STP-000S(131)**

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2017 ERRATA

2014 Update to Appendix O – Wetlands Technical Report

ERRATA

Page, Section	Reads	Should Read (changes shown)
<i>Page 3, Section 1.1.2, para 1</i>	<p>Similar to Alternative 1, Alternative 1B includes a continuation of mainline ferry service in Lynn Canal; the AMHS would continue to be the NHS route from Juneau to Haines and Skagway; no new roads or ferry terminals would be built; and in addition to the Day Boat ACFs, programmed improvements include improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs as well as expansion of the Haines Ferry Terminal to include a new double bow berth to accommodate the Day Boat ACFs. Service to other communities would remain the same as with the No Action Alternative. Alternative 1B keeps the M/V Malaspina in service after the second Day Boat ACF is brought online to provide additional capacity in Lynn Canal.</p>	<p>Similar to Alternative 1, Alternative 1B includes: a continuation of mainline ferry service in Lynn Canal; the AMHS would continue to be the NHS route from Juneau to Haines and Skagway; no new roads or ferry terminals would be built; and in addition to the Day Boat ACFs, programmed improvements include improved vehicle and passenger staging areas at the Auke Bay and Haines Ferry Terminals to optimize traffic flow on and off the Day Boat ACFs as well as expansion of the Haines Ferry Terminal to include a new double bow berth to accommodate the Day Boat ACFs. Service to other communities would remain the same as Alternative 1 – No Action. Alternative 1B keeps the <i>M/V Malaspina</i> in service after the second Day Boat ACF is brought online to provide additional capacity in Lynn Canal.</p>
<i>Page 3-4, Section 1.1.2, para 2</i>	<p>During the summer, the M/V Malaspina would make one round trip per day seven days per week on a Skagway-Auke Bay-Skagway route, while one Day Boat ACF would make one round trip between Auke Bay and Haines six days per week, and one would make two round trips per day between Haines and Skagway six days per week. The Day Boat ACFs would not sail on the seventh day because the mainliner would be on a similar schedule.</p>	<p>During the summer, the <i>M/V Malaspina</i> would make one round trip per day five days per week on a Skagway-Auke Bay-Skagway route. On the sixth day, the <i>M/V Malaspina</i> would sail on the Skagway-Auke Bay-Haines-Skagway route, and on the seventh day, it would sail that route in reverse (Skagway-Haines-Auke Bay-Skagway). One Day Boat ACF would make one round trip between Auke Bay and Haines seven days per week. The other Day Boat ACF would make two round trips per day between Haines and Skagway six days per week; it would not sail on the seventh day because the mainliner would be on a similar schedule.</p>

2017 ERRATA

2014 Update to Appendix O – Wetlands Technical Report

Page, Section	Reads	Should Read (changes shown)
<i>Page 10, Section 3.0</i>	The affected environment is described in Section 3.0 in the 2004 <i>Wetlands Technical Report</i> . There are no changes to the general descriptions of the wetland and waterbody types within the project area.	The affected environment is described in Section 3.0 in the 2004 <i>Wetlands Technical Report</i> . There are no changes to the general descriptions of the wetland and waterbody types within the project area. The USACE, in its comment letter on the Draft SEIS (dated November 25, 2014), noted that mudflats may be present near the Katzehin Ferry Terminal and Katzehin River. As described in the 2004 <i>Wetlands Technical Report</i> , no mudflats were identified in this area. FHWA reevaluated the Katzehin area for the presence of mudflats using 2014 high-resolution digital orthomosaic photography, photographs and video clips from Alaska ShoreZone, and Alaska ShoreZone Coastal Mapping. According to the reevaluation, both sites (Katzehin Ferry Terminal and Katzehin River delta) have rock and gravel visible on the 2014 aerials and are not classified as mudflats by ShoreZone; therefore, these areas would not be characterized as a special aquatic site according to Section 404(b)(1) Guidelines (40 CFR Part 230; see Attachment C).
<i>Page 15, Section 4.5.1.1, para 1</i>	The upgrade would impact 0.6 acre of wetlands and extension of the highway from Cascade Point to Sawmill Cove would require the filling of approximately 0.9 acre of scrub-shrub/forested wetlands and 1.9 acres of marine fill at the Sawmill Cove Ferry Terminal site; 1.2 acres of subtidal dredging would be required for the ferry terminal.	The upgrade would impact 0.6 acre of wetlands and extension of the highway from Cascade Point to Sawmill Cove would require the filling of approximately 0.9 acre of scrub-shrub/forested wetlands and 1.9 acres of marine fill at the Sawmill Cove Ferry Terminal site; 1.3 acres of subtidal dredging would be required for the ferry terminal.
<i>Page 17, Section 5.0</i>	<i>Section 5.0 is replaced in its entirety with the following:</i> The No Action Alternative would not result in impacts to wetlands; therefore, no mitigation is required or proposed.	
<i>Attachment C</i>	This errata attaches the memo, “Reevaluation of Mudflats at the Katzehin Ferry Terminal Site and Katzehin River Bridge Crossing,” to the 2014 Update to Appendix O – Wetlands Technical Report as Attachment C.	

Memo

Date: Thursday, January 29, 2015

Project: Juneau Access Improvements Project

To: Gary Hogins, DOT&PF

From: Mac Salway, HDR

Subject: Reevaluation of mudflats at the Katzeihin Ferry Terminal site and Katzeihin River bridge crossing

Introduction

In the U.S. Army Corps of Engineers' (USACE) comment letter dated November 25, 2014 on the Draft Supplemental Environmental Impact Statement (DSEIS) for the Juneau Access Improvements (JAI) Project, the USACE requested more information on the potential presence of mudflats in and adjacent to the proposed Katzeihin River bridge and the Katzeihin Ferry Terminal location (USACE 2014). The U.S. Environmental Protection Agency (USEPA) similarly noted the potential for mudflats along the south shore of the Katzeihin River in their comment letter, also dated November 25, 2014 (USEPA 2014). The purpose of this memorandum is to examine the potential for mudflats or other special aquatic sites within these two areas using newly available information.

Existing Information

Mudflats are classified as special aquatic sites under the *Section 404(b)(1) Guidelines for the Specification of Disposal Sites for Dredged or Fill Material* (Guidelines; 40 CFR Part 230, U.S. Federal Register 2010). The Guidelines define them as follows:

Mud flats are broad flat areas along the sea coast and in coastal rivers to the head of tidal influence and in inland lakes, ponds, and riverine systems. When mud flats are inundated, wind and wave action may resuspend bottom sediments. Coastal mud flats are exposed at extremely low tides and inundated at high tides with the water table at or near the surface of the substrate. The substrate of mud flats contains organic material and particles smaller in size than sand. They are either unvegetated or vegetated only by algal mats.

The Katzechin Ferry Terminal location and the southern Katzechin River bridge embankment were originally mapped in the 1994 *Wetlands Technical Report*, and mapping was subsequently updated in 2004, 2006, and 2014 (DOT&PF 1994, 2004, 2006, 2014a). Mapping was completed using National Wetland Inventory (NWI) codes according to the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Field work was completed in 2003 and 2006. The 2006 field effort resulted in a refined boundary for the estuarine emergent wetland located at the Katzechin Ferry Terminal site. Neither the Katzechin Ferry Terminal location nor the Katzechin River delta was mapped for the JAI Project with an NWI code that would indicate the presence of mudflats.

Typical NWI codes characterizing mudflats begin with E2US3 (estuarine, intertidal, unconsolidated shore composed of mud). No mudflats were mapped in these two areas during the original effort or any of the subsequent updates.

Wetland mapping performed in 2004 and subsequent years occurred on a digital orthomosaic aerial image taken in 2003 with a pixel resolution of 1.5 feet. The 2003 aerial

photography appears to be collected during high tide. Exhibit 1 shows a photograph of the Katzechin ferry terminal site taken during the 2003 field work (DOT&PF 2004).



Exhibit 1. Photograph taken July 27, 2003 of the Katzechin Ferry Terminal site.

2015 Reevaluation of Mudflats

The potential for mudflats at the Katzechin Ferry Terminal location and Katzechin River delta were reevaluated in 2015. New information used for this reevaluation includes:

- Alaska ShoreZone Coastal Mapping (National Oceanic and Atmospheric Administration [NOAA] 2014)
- Photographs and video clips from Alaska ShoreZone (NOAA 2014)
- High-resolution digital orthomosaic photography flown in summer 2014 with 3-inch pixel resolution

The Alaska ShoreZone Coastal Mapping project (ShoreZone website) is sponsored by NOAA Fisheries and includes a standardized system for cataloguing high-resolution geomorphic and biological resources. The ShoreZone website includes low-tide oblique aerial images and access to the biophysical data. The area around the Katzechin River was flown for the ShoreZone website on June 4, 2004; however, these data were not evaluated for previous JAI wetland mapping efforts. The ShoreZone mapping resources, along with the new high-resolution 2014 aerial imagery, allow for detailed analysis of the intertidal areas sufficient to determine the current presence of mudflats. Each area, the Katzechin Ferry Terminal location and the southern embankment of the Katzechin River bridge, is examined separately below.

Katzechin Ferry Terminal Location

The wetland and waterbody mapping was updated in 2014 for the entire study area for the DSEIS (DOT&PF 2014a) and was used to calculate impacts for the project's USACE Section 404 permit

application (DOT&PF 2014b) currently under review. Mapping for Katzechin Ferry Terminal location included the following two NWI codes:

- **E2US1N/E2RS2N** – Estuarine, Intertidal, Unconsolidated Shore with Cobble-Gravel, Regularly Flooded/Estuarine, Intertidal, Rocky Shore, Rubble, Regularly Flooded
- **E2EM1N** – Estuarine, Intertidal, Emergent Vegetation, Regularly Flooded

Exhibit 2 shows the Katzechin Ferry Terminal site along with the 2014 aerial imagery, the 2014 JAI wetland mapping, and the 2004 ShoreZone classification (NOAA 2014). The relevant ShoreZone mapping codes are described in Table 1.

Table 1. ShoreZone mapping at the proposed Katzechin Ferry Terminal site

ID	Habitat Class	Shore Type	Environmental Sensitivity Index*
1	Semi-Protected/ Immobile/Rock	Cliff with gravel beach	Sheltered rocky rubble shores
2	Semi-Protected/ Partially Mobile/ Sediment or Rock Sediment	Gravel beach - narrow	Gravel beaches (cobbles and boulders)
3	Semi-Protected/ Mobile/Sediment	Organics/fines	Sheltered tidal flats
4	Semi-Protected/ Mobile/Sediment	Sand and gravel flat fan	Sheltered tidal flats

*Environmental Sensitivity Index is a shore type classification that provides a concise summary of coastal resources that are at risk if an oil spill occurs nearby (NOAA 2014).

Rocks and gravels are visible in the 2014 aerial photography and in the ShoreZone photograph (Exhibit 3) throughout the area where the proposed ferry terminal would be sited. The shore types mapped by ShoreZone generally describe rocky/gravel beaches. No part of the Katzechin Ferry Terminal area is mapped as mudflat by ShoreZone (NOAA 2014). One section of ShoreZone mapping (ID# 3) identifies organics and fines in its mapping. This code represents vegetation and fines that can be located either in the intertidal or supratidal region. Additional information from the ShoreZone website was collected for the across-shore components of this area (Table 2; NOAA 2014). This mapping zone (ShoreZone ID# 3) covers an area mapped as E2EM1N in the DSEIS and USACE permit application.

Table 2. Additional information on across-shore components of ShoreZone ID# 3 (from land waterward)

Beach, storm ridge-Anthropogenic, logs (cut trees)/Clastic, pebbles (0.5 to 6cm), sand (very fine to very coarse, 0.5 to 2mm)
Beach, berm-Clastic, pebbles (0.5 to 6cm), sand (very fine to very coarse, 0.5 to 2mm)
Marsh, mid to low (discontinuous)-Biogenic, grass on dunes/Clastic, sand (very fine to very coarse, 0.5 to 2mm), pebbles (0.5 to 6cm)
Tidal Flat, flats-Clastic, sand (very fine to very coarse, 0.5 to 2mm), pebbles (0.5 to 6cm)

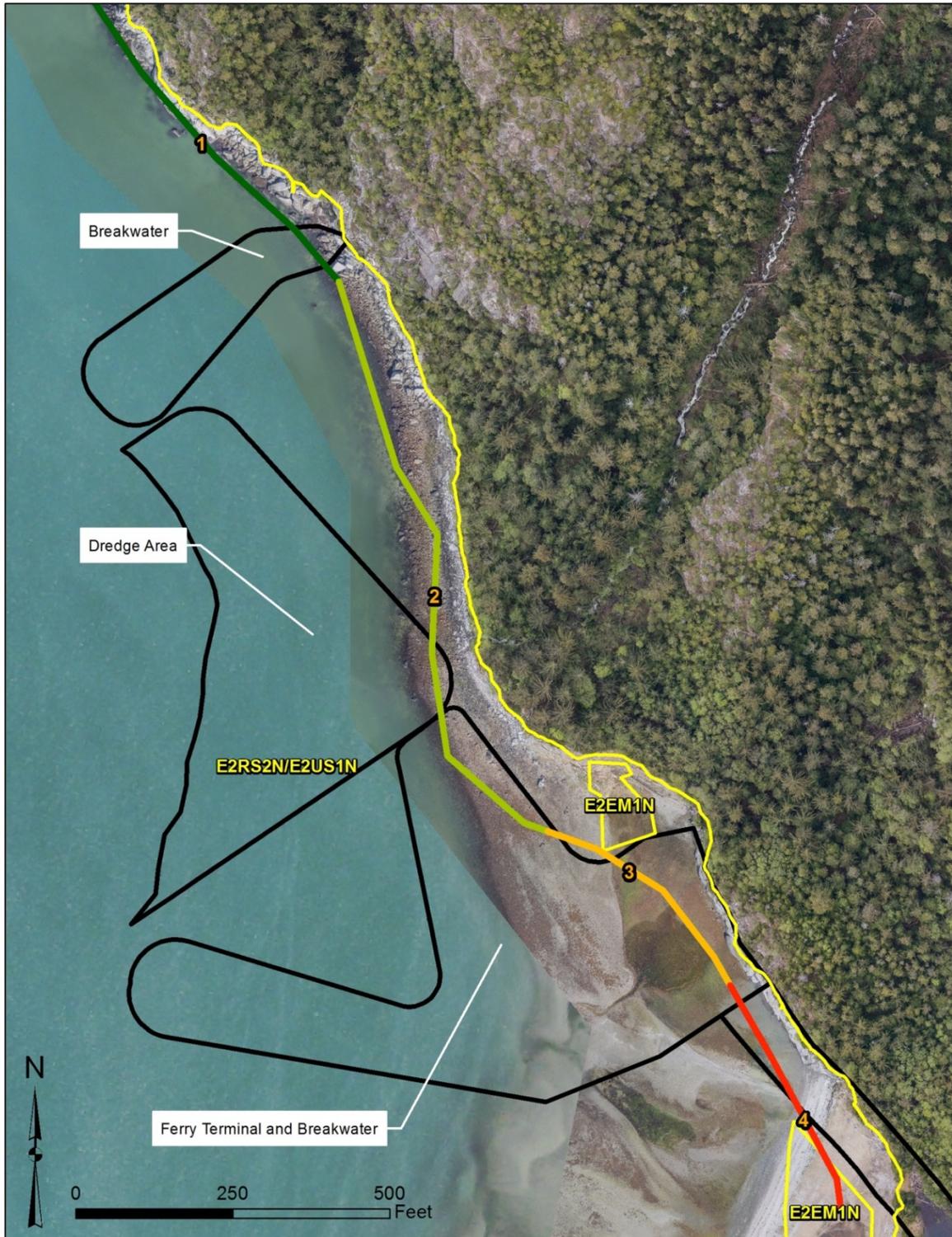


Exhibit 2. 2014 aerial imagery, JAI wetland mapping, and 2004 ShoreZone mapping of the Katzehin Ferry Terminal site.



Exhibit 3. Photograph of the Katzeihin Ferry Terminal site from the ShoreZone website (NOAA 2014). Photo taken June 4, 2004 looking southeast.

The discontinuous marsh documented in the third across-shore component of ShoreZone ID# 3 accounts for the emergent estuarine wetland currently mapped. Rocks and gravel are present in all across-shore components in all areas where the proposed ferry terminal would be located. The smallest particle size mapped by ShoreZone in the area is sand.

Rocks and gravel are visible throughout the area on the 2014 aerial photography. The ShoreZone mapping does not identify mudflats and classifies the area as being dominated by pebbles and sand. Consequently, this area would not meet the definition of mudflats and therefore would not be characterized as a special aquatic site according to Section 404(b)(1) Guidelines (40 CFR Part 230).

Katzeihin River South Shore Embankment

The southern embankment of the Katzeihin River bridge was mapped for the DSEIS and Section 404 permit application with the following two NWI codes:

- **E1UBL** – Estuarine, Subtidal, Unconsolidated Bottom
- **E2EM1N** – Estuarine, Intertidal, Emergent Vegetation, Regularly Flooded

Exhibit 4 shows the southern embankment for the Katzeihin River bridge with the 2014 aerial photography and the 2004 ShoreZone mapping. No part of the Katzeihin River south shore embankment is mapped as mudflat by ShoreZone (NOAA 2014). The ShoreZone mapping near the proposed embankment is described in Table 3. Two ShoreZone types are mapped in the area, both describing the area as sand flats.

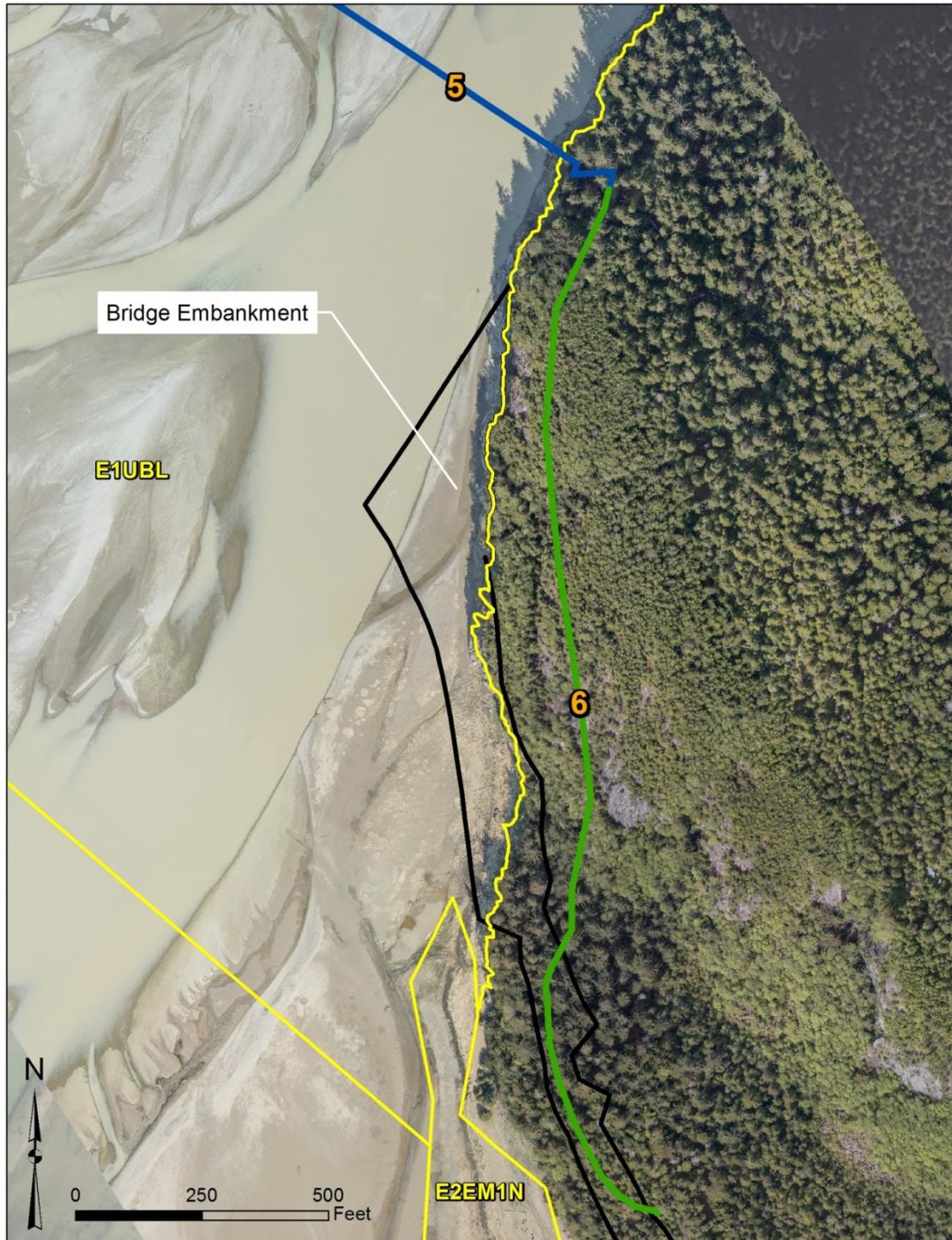


Exhibit 4. 2014 aerial imagery, JAI wetland mapping, and 2004 ShoreZone mapping of the Katzehin River bridge southern embankment.

Table 3. ShoreZone mapping at proposed southern Katzeihin River bridge embankment

ID	Habitat Class	Shore Type	Environmental Sensitivity Index*
5	Very Protected/Estuary	Sand flat	Sheltered tidal flat
6	Very Protected/Partially Mobile/Sediment or Rock and Sediment	Sand flat	Sheltered tidal flat

*Environmental Sensitivity Index is a shore type classification that provides a concise summary of coastal resources that are at risk if an oil spill occurs nearby (NOAA 2014).

Additional information from the ShoreZone website was collected for the across-shore components of the two ShoreZone types (Table 4; NOAA 2014). These components are described in Table 4. Aside from the cliff component on ShoreZone ID# 6, all other components list sand before mud or fines, meaning that sand is present in greater abundance than mud or fines. Rocks and gravel are visible on the 2014 aerial imagery directly adjacent to the river channel and sporadically throughout the entire area that would be impacted.

Table 4. Additional information on across-shore components of ShoreZone ID#s 5 and 6 (from land waterward)

ShoreZone ID# 5	ShoreZone ID# 6
Delta, fan, bars, multiple channels-Clastic, sand (very fine to very coarse, 0.5 to 2mm), fines or mud (mix of silt or clay, < 0.5mm)	Cliff, eroding, inclined (20 to 35deg), low (<5m)- Bedrock
Tidal Flat, flats, bar, ridge, multiple tidal channels-Clastic, sand (very fine to very coarse, 0.5 to 2mm), fines or mud (mix of silt or clay, < 0.5mm)	River Channel, single channel-Clastic, sand (very fine to very coarse, 0.5 to 2mm), fines or mud (mix of silt or clay, < 0.5mm)
River Channel, multiple channels-Clastic, sand (very fine to very coarse, 0.5 to 2mm), fines or mud (mix of silt or clay, < 0.5mm)	Tidal Flat, flats, bar, ridge, multiple tidal channels-Clastic, sand (very fine to very coarse, 0.5 to 2mm), fines or mud (mix of silt or clay, < 0.5mm)??
	Delta, fan, multiple channels-Clastic, sand (very fine to very coarse, 0.5 to 2mm), fines or mud (mix of silt or clay, < 0.5mm)
	River Channel, multiple channels-Clastic, sand (very fine to very coarse, 0.5 to 2mm), fines or mud (mix of silt or clay, < 0.5mm)

Due to the presence of rocks and gravel visible on the 2014 aeriels and the classification of the area as sand flats by ShoreZone, this area would not meet the definition of mudflats and therefore would not be characterized as a special aquatic site according to Section 404(b)(1) Guidelines (40 CFR Part 230).

Summary

The 2014 wetland mapping used in the 2014 DSEIS and USACE permit application was reevaluated using new information to determine the presence of mudflats in two locations: the Katzeihin Ferry Terminal location and the south shore embankment of the Katzeihin Ferry Terminal. The information evaluated included site photographs, video, and coastal mapping from a 2004 low-altitude flyover from the ShoreZone website and high-resolution aerial photography taken during summer 2014.

The ShoreZone coastal mapping does not identify mudflats in either area in any across-shore component. The coastal mapping identifies the Katzeihin Ferry Terminal site to be dominated by pebbles and sand and the bridge embankment site to be dominated by sand. Rocks and gravel are also visible in both locations in the 2014 aerial photography.

Upon reevaluation, it appears that the areas were correctly identified as waters of the U.S. and not mudflats. These areas would not be characterized as a special aquatic site according to Section 404(b)(1) Guidelines (40 CFR Part 230).

References

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Office of Biological Services, U.S. Fish and Wildlife Service, FWS/OBS-79-31. Washington, DC.
- DOT&PF (Alaska Department of Transportation and Public Facilities). 1994. *Wetlands Technical Report*. Prepared for DOT&PF.
- DOT&PF. 2004. *Appendix O - Wetlands Technical Report for the Juneau Access Improvements Supplemental Draft Environmental Impact Statement*. Juneau, Alaska, October 2004. Available online at http://dot.alaska.gov/sereg/projects/juneau_access/assets/SDEIS_JAN05/Appendix_O.pdf
- DOT&PF. 2006. *Juneau Access Project: Final Environmental Impact Statement*. Juneau, Alaska. Available online at: http://dot.alaska.gov/sereg/projects/juneau_access/assets/FEIS_06/Appendix_W.pdf.
- DOT&PF. 2014a. *2014 Update to Appendix O – Wetlands Technical Report*. Juneau Access Project: Draft Supplemental Environmental Impact Statement. Juneau, Alaska. Available online at: http://dot.alaska.gov/sereg/projects/juneau_access/assets/2014_DSEIS_appendices/AppendixZ_Update_O_Wetlands_Tech_Rprt.pdf
- DOT&PF. 2014b. Section 404/10 Permit Application to the U.S. Army Corps of Engineers for the Juneau Access Improvements Project. Available online at: http://dot.alaska.gov/sereg/projects/juneau_access/assets/2014_DSEIS_appendices/AppendixZ_Update_X_Section404.pdf
- NOAA (National Oceanic and Atmospheric Administration). 2014. ShoreZone coastal mapping, photographs and video images. National Marine Fisheries Service, Alaska Regional Office. Available online at <http://alaskafisheries.noaa.gov/mapping/szflex/>
- USACE (U.S. Army Corps of Engineers). 2014. Letter from Shannon Morgan (Chief, South Branch, U.S. Army Corps of Engineers) to Tim Haugh (Federal Highway Administration), November 25, 2014.

USEPA (U.S. Environmental Protection Agency). 2014. Letter from R. David Allnutt (Director, Office of Ecosystems, U.S. Environmental Protection Agency) to Tim Haugh (Federal Highway Administration), November 25, 2014.

U.S. Federal Register. 2010. Part 230 – Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material. U.S. Department of Defense. Corps of Engineers, Department of the Army. 40 CFR Part 230 Subparts A through J. Source: 45 FR 85344, December 24, 1980.

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