Attachment 3

USACE Permit Application

Applicant's Categorization of Wetlands and Proposed Mitigation Statement

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Attachment 3
USACE Permit Application, Continuation of Block 23,
Description of Avoidance, Minimization, and Compensation

Introduction and Purpose

This document summarizes the wetland and waterbody rating system used for the Juneau Access Improvements (JAI) Project. Most wetlands and waterbodies are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act of 1899. Projects must avoid impacts to wetlands wherever practicable, minimize impacts where impacts are not avoidable, and in some cases compensate for unavoidable impacts. This document is the basis of Department of Transportation and Public Facilities (DOT&PF) project design that avoids and minimizes impacts to aquatic resources wherever practicable and proposes mitigation ratios to offset unavoidable impacts to aquatic resources as directed in the Federal Rule on Compensatory Mitigation: Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (33 Parts 332 and 40 CFR Part 230, Subpart J), dated April 10, 2008. The rating system is based on previous wetland delineations, wetland functional assessments, supporting National Environmental Protection Act (NEPA) documents, and extensive agency consultation conducted for the JAI Project. As part of the JAI Draft Supplemental Environmental Impact Statement (EIS) prepared in 2004 DOT&PF evaluated wetland and waterbody functions. This evaluation was contained in *Appendix O: Wetlands Technical Report.* The report evaluated functions using the rating system and valuation criteria described in *Juneau Wetlands: Function and Value Study* (Adamus, 1987).

The 2004 wetland delineation and functional assessment was amended in 2006 and 2014. As part of the 2006 Final EIS, new field data were incorporated into the 2006 *Addendum to Appendix O – Wetlands Technical Report* due to alignment changes. This information was subsequently updated as part of the 2014 Draft Supplemental EIS due to additional design refinements and was incorporated into the *2014 Update to Appendix O – Wetlands Technical Report*. The *2014 Update to Appendix O – Wetlands Technical Report* updates the 2004 *Wetlands Technical Report* and replaces the 2006 *Addendum to Appendix O – Wetlands Technical Report.* However, no changes to the methodology or substantial changes to the delineation and functional assessment conclusions occurred as part of these updates.

The Federal Highway Administration (FHWA) issued a Record of Decision (ROD) in 2006 identifying Alternative 2B as the selected alternative. In 2008, DOT&PF obtained a USACE Section 404/10 permit based on the previous wetland delineation and functional assessment. USACE issued permit POA-2006-597-2, Berners Bay/Lynn Canal authorizing the construction of the JAI Project. During permit negotiations the alignment of Alternative 2B was further modified to avoid and minimize impacts to wetlands, particularly emergent wetlands, and to reduce the extent of rock sidecast areas. The permit decision document identified Alternative 2B as the Least Environmentally Damaging Practicable Alternative (LEDPA), as required by the Section 404(b)(1) Guidelines (see 40 C.F.R. § 230.10(a)).

In order to rate wetlands and waterbodies for the purpose of determining appropriate compensatory mitigation ratios that comply with current regulations, a qualitative assessment was performed to classify wetlands and waterbodies into the following four categories: Category I, II, III, and IV. These categories are generally defined as:

Category I – High-functioning wetlands

These wetlands are recognized as regionally or nationally important for the level of functions they perform. Generally, these wetlands are less common. These are wetlands that: 1) provide a life-support function for threatened or endangered species that has been documented; 2) represent a high-quality example of a rare wetland type; 3) are rare within a given region; or 4) are undisturbed and contain ecological attributes that are impossible or difficult to replace within a human lifetime, if at all. The position of the wetland in the landscape plays an integral role in overall watershed health.

Category II – High- to moderate-functioning wetlands

These wetlands are those that: 1) provide habitat for very sensitive or important wildlife or plants; 2) are either difficult to replace (such as bogs); or 3) provide very high functions, particularly for wildlife habitat. These wetlands occur more commonly than Category I wetlands, but still need a high level of protection.

Category III – Moderate- to low-functioning wetlands

These wetlands can provide important functions and values. They can be important for a variety of wildlife species and can provide watershed protection functions depending on where they are located. Generally these wetlands will be smaller and/or less diverse in the landscape than Category II wetlands. These wetlands usually have experienced some form of degradation, but to a lesser degree than Category IV wetlands.

Category IV – Degraded and low-functioning wetlands

These wetlands are the smallest, most isolated, have the least diverse vegetation, may contain invasive species, and have been degraded by humankind. These are wetlands that we should be able to replace and, in some cases, be able to improve from a habitat standpoint. These wetlands can provide important habitat functions and values, and should to some degree be protected depending on where they are located in the watershed and the condition of that watershed (urban vs. rural). In some areas, these wetlands may be providing groundwater recharge and water pollution prevention functions and, therefore, may be more important from a local point of view.

Categorization Results

Category I – High-functioning wetlands

Category I represent wetlands and waterbodies that are less common or provide life-support functions for important species. The waters of Berners Bay and the flooded wetlands adjacent to Berners Bay meet this criterion. Berners Bay has routinely been protected and managed as an important aquatic resource due to the seasonal concentrations of foraging Steller sea lions (*Eumetopias jubatus*), humpback whales (*Megaptera novaeangliae*), harbor seals (*Phoca vitulina*), and other marine mammals, and regionally important concentrations of spawning and rearing forage fish, including the remaining spawning habitat for the Lynn Canal Pacific Herring (*Clupea pallasii*) population (National Marine Fisheries Service, 2005). For this project, the waters of Berners Bay, along with any adjacent wetlands with a flooded water regime, are rated as Category I. Flooded water regimes in the project area include aquatic resources with the following National Wetland Inventory (NWI) code modifiers:

- A – Temporarily Flooded
- N – Regularly Flooded – Tidal
- P – Irregularly Flooded – Tidal
- R – Seasonally Flooded – Tidal
- S – Temporarily Flooded – Tidal

Table 1 lists the 9 individual wetland and waterbody polygons within the project area rated Category I. As is show in the attached map set, none of the Category I aquatic resources will be impacted by the proposed JAI Project.

Table 1. Proposed Category I Wetlands and Waterbodies

Wetland IDs	Map #	NWI Code	Description
735-4	6	PFO1A/PSS1A	Palustrine broad-leaved deciduous forest/scrub-shrub, temporarily flooded
680-2	5	PFO1A	Palustrine broad-leaved deciduous forest, temporarily flooded
735-2	6	PEM1S	Palustrine persistent emergent vegetation, temporarily flooded - tidal
680-3	5	PSS1S/PFL1S	Palustrine deciduous scrub-shrub/river flats, temporarily flooded - tidal
690-2	5	PSS1R	Palustrine deciduous scrub-shrub, seasonally flooded - tidal
735-1, 900-1	6 7	E2EM1P	Estuarine intertidal persistent emergent vegetation, irregularly flooded
370-T	3-7	E2RS2N	Estuarine intertidal rocky shores with rubble substrate, regularly flooded
900-T	7	E2BB1N	Estuarine intertidal beach bar with cobble-gravel substrate, regularly flooded

Category II – High- to moderate- functioning wetlands

Category II wetlands also provide high functions, however they are more common than Category I wetlands. In the project area, this refers to wetlands that provide support functions to the rivers flowing into Berners Bay and emergent wetlands or wetlands with an emergent vegetation component.

Berners Bay is fed primarily by four rivers: the Antler River, Berners River, Lace River, and Slate Creek. Wetlands in these watersheds are important for thermoregulation of water temperatures, carbon export to Berners Bay, and supporting fish and wildlife habitat. All palustrine forested and emergent wetlands within these watersheds in the project area are rated Category II.

During agency coordination for the original USACE Section 404/10 permitting process in 2008, resource agencies emphasized the importance of emergent wetlands within the project area. Emergent wetlands are less extensive in Southeast Alaska when compared to the more abundant forested wetlands and unvegetated shorelines. Palustrine and emergent wetlands create edge habitat and diverse habitat structures important to many wildlife species, including songbirds and small mammals. Therefore all wetland types not included in Category I that are classified as emergent or have an emergent component are rated Category II.

Table 2 lists the 39 wetland and waterbody polygons within the project area rated Category II.

Table 2. Proposed Category II Wetlands and Waterbodies

Wetland ID	Map #	NWI Code	Description
Wetlands within the Antler River, Berners River, Lace River or Slate Creek watersheds			
800-1, 800-3, 830-1, 895-1, 910-2, 955-2 (within Slate Creek watershed)	6 6 6 7 7 7	PFO4B	Palustrine needle-leaved evergreen forest, saturated
800-2, 800-4, 830-2	6 6 6	PEM1B	Palustrine persistent emergent vegetation, saturated
920-1, 950-1 (within Slate Creek watershed)	7 7	PEM1B/PSS4B	Palustrine persistent emergent vegetation and needle-leaved evergreen scrub-shrub, saturated
Emergent wetlands or wetlands with an emergent component			
420-1, 440-1, 955-1, 950-1 (outside Slate Creek watershed), 975-1, 1010-1, 1040-1, 1110-1, 1135-1, 1150-1, 1260-2	3 4 7 7 7 7 8 8 8 8 9	PEM1B/PSS4B	Palustrine persistent emergent vegetation and needle-leaved evergreen scrub-shrub, saturated
325-1	3	PEM1B/PSS1B	Palustrine persistent emergent vegetation and broad-leaved deciduous scrub-shrub, saturated
330-2	3	PEM1B/PFO4B	Palustrine persistent emergent vegetation and needle-leaved evergreen forest, saturated
270-1, 275-1, 1125-1, 1185-2, 3560-1	2 2 8 9 NA	PEM1B	Palustrine persistent emergent vegetation, saturated
990-1	7	PSS4B/PEM1B	Palustrine needle-leaved evergreen scrub-shrub and persistent emergent vegetation, saturated
1015-1, 1020-1, 1070-1	8 8 8	PFO4B/PEM1B	Palustrine needle-leaved evergreen forest and persistent emergent vegetation, saturated
2590-1, 2630-1, 2735-1, 2750-1	18 19 19 19	E2EM1N	Estuarine intertidal persistent emergent vegetation, regularly flooded
2670-1, 2690-1	19 19	E2EM1P	Estuarine intertidal persistent emergent vegetation, irregularly flooded

Category III – Moderate- to low- functioning wetlands

The remaining wetlands and waterbodies not rated as Category I or Category II are rated Category III. Category III wetlands and waterbodies are comprised of forested wetlands without an emergent component and rocky or unconsolidated shorelines. These wetlands and waterbodies are common in Southeast Alaska and the functions performed by these areas are similar to many upland habitats in the region.

These Category III forested and scrub-shrub wetlands are the most common freshwater wetland types in Southeast Alaska. NWI mapping for the area between Juneau and Skagway was analyzed between Lynn Canal and the Canadian border. For this area, forested and scrub shrub wetlands covered over 28,000 acres or approximately 69% of all palustrine wetlands in the region (USFWS, 2014; Figure 1). Generally these areas are effective at recharging groundwater and for supporting the lateral flow of groundwater. These functions are also common in widespread upland forested vegetation types within the region. These wetland types typically contribute minimally to wildlife and fish habitat due to their homogeneity and the steepness of the terrain. During the 2008 permitting process, the USACE noted in their ROD that palustrine forested wetlands are typical for Southeast Alaska and that forested wetlands not adjacent to anadromous fish streams are of low value (POA-2006-597-2).

NWI mapping was also evaluated to compare estuarine and marine shoreline types. Of the approximately 8,900 acres of shoreline, 6,300 of these acres were characterized by rocky or unconsolidated shore (USFWS, 2014; Figure 2). These rocky and unconsolidated shorelines do not meet the USACE definition of a special aquatic site and perform most functions assessed to a low degree. However, during times of tidal inundation they may perform functions that support fish habitat.

Table 3 lists the 36 wetland and waterbody polygons within the project area rated Category III.

Figures 1 and 2. Palustrine and Estuarine NWI Types between Juneau and Skagway (USFWS, 2014)

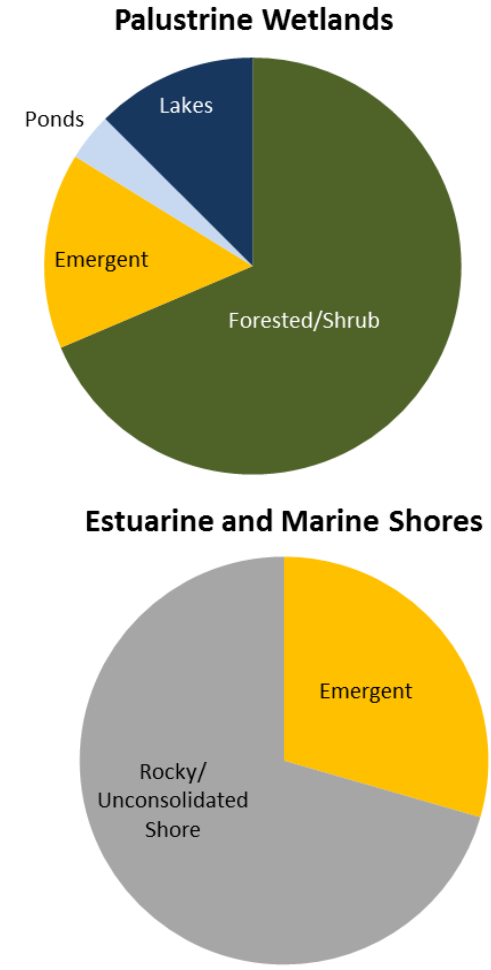

Table 3. Proposed Category III Wetlands and Waterbodies

Wetland IDs	Map #	NWI Code	Description
75+08, 79+41, 93+59, 107+39, 116+94, 165+92, 167+41, 172+39, 178+91, 185+40, 191+50, 194+00, 202+00, 205+26, 265-1 415-1, 955-2 (outside Slate Creek watershed), 1260-1, 1275-1, 1360-1, 1375-1	1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 3 7-8 9 9 10 10	PFO4B	Palustrine needle-leaved evergreen forest, saturated
340-1	3	PSS1B/PFO4B	Palustrine broad-leaved deciduous scrub-shrub and needle-leaved evergreen forest, saturated
330-1, 1185-1, 1220-1	3 8 9	PFO4B/PSS1B	Palustrine needle-leaved evergreen forest and broad-leaved deciduous scrub-shrub, saturated
3565-1	NA	PSS4B	Palustrine needle-leaved evergreen scrub-shrub, saturated
1300-1, 1380-1	10 10	E2RS2N/E2US1N	Estuarine intertidal rocky shores with rubble substrate and unconsolidated shore with cobble-gravel substrate, regularly flooded
1480-1, 2745-T, 2765-1, 2800-1, 2985-1, 3000-1, 3300-1, 3580-1	11 19 19 NA NA NA NA NA	E2RS2N	Estuarine intertidal rocky shores with rubble substrate, regularly flooded
2620-1	18-19	E1UBL	Estuarine subtidal with an unconsolidated bottom

Category IV – Degraded- to low- functioning wetlands

Category IV wetlands and waterbodies provide limited functions and likely have been degraded by human influence. No wetlands and waters are proposed for a Category IV designation.

Proposed Mitigation Statement

Federal regulations and guidelines associated with Section 404 of the Clean Water Act require that project proponents eliminate or reduce adverse impacts on wetlands and waters of the U.S. by taking certain specific steps during project planning (33 USC 1344, 33 CFR Part 323, 40 CFR Part 230, 23 CFR 777). These steps are as follows (emphasis added):

1. Design the project to *avoid adverse impacts*.
2. Incorporate measures to *minimize adverse impacts*.
3. Plan to *restore sites* that must be temporarily adversely affected by the project.
4. *Compensate for unavoidable adverse impacts* through preservation, restoration, or creation of wetlands.

Each of the steps listed above is to be implemented to the extent practicable before moving on to the next step. Together, these steps mitigate the overall adverse effects of a project to wetlands and waters of the U.S.

The USACE and the Environmental Protection Agency issued the Final Rule on Compensatory Mitigation on April 10, 2008. The final rule establishes criteria for the use of appropriate and practicable compensatory mitigation for unavoidable functional losses of aquatic resources issued by USACE permits (33 CFR Part 332). The final rule requires functional assessments of wetlands and waterbodies, mitigation ratios greater than one-to-one, and a preference scale of compensatory mitigation alternatives. In order of preference, mitigation banks approved by the USACE are preferable for offsetting unavoidable impacts to aquatic resources, followed by in-lieu fee (ILF) programs, and then followed by permittee-responsible mitigation. Currently, there are no mitigation banks with a service area that encompasses the JAI Project. Therefore, an ILF program is considered the preferred, practicable option for satisfying the regulations of the 2008 Mitigation Rule. Under this scenario, DOT&PF would purchase credits for the JAI Project from an ILF program serving Southeast Alaska.

In accordance with 33 CFR Part 325.1(d)(7), "For activities involving discharges of dredged or fill material into waters of the U.S., the application must include a statement describing how impacts to waters of the United States are to be avoided and minimized. The application must also include either a statement describing how impacts to waters of the United States are to be compensated for or a statement explaining why compensatory mitigation should not be required for the proposed impacts." Measures to avoid, minimize, and mitigate are described in the following sections.

Avoidance and Minimization Measures

Suitable upland-only build alternatives cannot be defined because of the length and landscape complexity of the JAI Project area. The proposed alternative crosses several large rivers, numerous wetland complexes, and many unnamed streams. Total avoidance of wetlands with this project is unachievable. Various project alignments have been adjusted several times over the course of the JAI Projects initial environmental and preliminary engineering studies. In 2008, a Section 404/10 USACE permit was issued that authorized the construction of Alternative 2B. The USACE Record of Decision and Permit Evaluation for POA-2006-597-2, Berners Bay/Lynn Canal, analyzed a suite of project alternatives and determined that Alternative 2B was the

LEDPA confirming that the project properly avoided and minimized impacts to wetlands, marine areas, wildlife, and cultural resources to the maximum extent practicable.

Under the current design concept for Alternative 2B, all Category I wetlands, palustrine emergent wetlands, and estuarine emergent have been avoided. Furthermore the need for deepwater disposal has been eliminated. Potential impacts to forested wetlands and intertidal areas have been further avoided and minimized by alignment changes, extensions of bridges, and construction using the minimum-width fill footprint necessary. This has resulted in a footprint reduction of 14.5 acres over what was originally authorized by USACE (Table 4). Within wetlands and other sensitive areas, the roadway is designed with a low-profile embankment to limit embankment heights and side slopes so that the fill footprint is minimized. This height may be different based upon location and underlying substrate. The overall profile designed for this project minimized embankment height as much as possible while still providing adequate clearance for stream crossings. Whenever possible the embankment profile follows the profile of the original ground and uses the minimum necessary embankment material. Culverts are proposed in appropriate locations to maintain natural flow patterns for surface water, and roadside swales are designed to keep surface water within the natural drainage basins.

All known anadromous fish streams are crossed by bridges to avoid fill in streams and adjacent riparian habitat, where practicable. A number of parameters were used in determining the most appropriate structures for each stream crossing. Adjacent riparian wetlands were preserved to the extent practicable – weighed in part with other issues of logistics (abutment placement, span length, and locations of piers), cost, and approach curvature and gradient. Bridges are considerably more expensive than any other project feature. For that reason, span lengths had to be evaluated both individually and within context of the total overall project cost. Each crossing was rigorously evaluated by project scientists and engineers to determine the longest span(s) that could be used that avoids open water, preserves riparian habitats, considers overall project cost, and accounts for logistical concerns. Anadromous fish streams that can be crossed with 130-foot or shorter bridges would not have any structure or fill in the stream channel. To reduce impacts to riparian wetlands, the Lace and Antler rivers both have 50-foot bridge extensions on each side, and an additional 100-foot section has been added to the north side of the Katzehin River bridge. During final design, DOT&PF will investigate additional measures to reduce impacts, including whether additional alignment changes can be made.

During construction, slope limits in wetlands areas would be separately identified to ensure that workers are aware of wetlands and the need to avoid impacts beyond the slope and clearing limits. Construction camps, staging sites, borrow pits, and waste areas would be located in upland areas and stabilized during and after use to avoid water quality impacts to aquatic resources. The construction contractor would be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) and Erosion and Sediment Control Plan that describes the Best Management Practices (BMPs) to be used to minimize water quality impacts. The SWPPP would include procedures for locating and installing specific erosion control measures (e.g., silt fences, straw waddles, etc.), sediment basins, and installation of temporary erosion controls such as mulching and hydroseeding. Construction equipment would be steam cleaned prior to use on the project to reduce the potential for introducing invasive species.

Secondary impacts from the proposed JAI project are expected to be minimal. Careful examination of existing fill embankments along the Glacier Highway within nearby wetland areas was conducted to determine how upslope/downslope wetland would react to a similar linear development. Glacier Highway embankment within wetlands have wetland cross drainage culverts installed within the embankment and none of the wetlands adjacent to the crossings demonstrate a significant change in wetland type or hydrologic regime. The JAI Project would also be a DOT&PF-constructed road using similar construction techniques.

Table 4. Reduction of Wetland Impacts Since 2008

2006 Alternative 2B as Permitted under POA-2006-597-2	Current Alternative 2B
62 acres of wetland fill	60.7 acres of wetland fill
0.2 acre of estuarine emergent wetland fill	No emergent wetland fill
32 acres of intertidal and subtidal fill	32.1 acres of intertidal and subtidal fill
14.8 acres of deepwater rock disposal	No deepwater rock disposal
1.3 acres of channel work	2.9 acres of channel work*
4.4 acres of intertidal and subtidal dredging	4.4 acres of dredging intertidal and subtidal

*This increase is the result of additional fill required to prevent culvert failures, and the inclusion of additional culverts resulting from shifting the alignment uphill to avoid geotechnical concerns and bald eagle nests.

Compensation for Unavoidable Impacts

There are no mitigation banks with targeted mitigation projects or lands within the vicinity of the JAI Project. Therefore, using an ILF program to mitigate for unavoidable project impacts to aquatic resources is the preferred option for DOT&PF.

Of the 92.8 wetland and waterbody acres unavoidably impacted by the project, 60.7 acres are freshwater wetlands and approximately 32.1 are estuarine and marine shores (Table 5). Impacts of the project will be limited to Category II and III wetland and waterbodies. Locations of the impacted aquatic resources are shown on the attached map set. The proposed compensatory mitigation ratios included in Table 6 comply with the 2008 Final Rule on Compensatory Mitigation. These ratios also align with mitigation ratios required by the USACE for other projects in Southeast Alaska, e.g., the Whitman Lake Hydroelectric Project in Ketchikan, the Skagway Gateway Intermodal Project, Glacier Highway Extension Project, and the Statter Harbor Improvements Project in Juneau.

As part of the 2008 USACE permit (POA-2006-597-2), DOT&PF committed to paying $780,000 as ILF to offset for the loss of 32.1 acres of estuarine and marine shores. Through 2014, DOT&PF has paid $324,000 (2006 dollars) as mitigation for anticipated estuarine and marine shore impacts. This money was used to construct two artificial reefs at Yankee Cove in cooperation with the National Marine Fisheries Service. In a letter to FHWA from the USACE on February 21, 2014, the USACE requested proposed mitigation in accordance with the 2008 Final Rule on Compensatory Mitigation.

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Table 5. Aquatic Resource Impacts

Aquatic Resource Type	Category	Impacted	Map #	NWI Code	Acreage of Impact
Palustrine	II	800-1	6	PFO4B	0.43
Palustrine	II	895-1	7	PFO4B	4.91
Palustrine	II	910-2	7	PFO4B	0.88
Palustrine	II	955-2	7	PFO4B	7.31
				Palustrine Category II Aquatic Resource Total	***13.53***
Palustrine	III	75+08	1	PFO4B	0.03
Palustrine	III	79+41	1	PFO4B	0.04
Palustrine	III	107+39	1	PFO4B	0.11
Palustrine	III	116+94	1-2	PFO4B	0.29
Palustrine	III	165+92	2	PFO4B	<0.01
Palustrine	III	167+41	2	PFO4B	0.05
Palustrine	III	172+39	2	PFO4B	0.01
Palustrine	III	178+91	2	PFO4B	<0.01
Palustrine	III	185+40	2	PFO4B	<0.01
Palustrine	III	191+50	2	PFO4B	<0.01
Palustrine	III	194+00	2	PFO4B	0.01
Palustrine	III	202+00	2	PFO4B	<0.01
Palustrine	III	205+26	2	PFO4B	0.04
Palustrine	III	340-1	3	PSS1B/PFO4B	0.74
Palustrine	III	415-2	3	PFO4B	4.01
Palustrine	III	955-2	7-8	PFO4B	25.91
Palustrine	III	1185-1	8-9	PFO4B/PSS1B	9.86
Palustrine	III	1220-1	9	PFO4B/PSS1B	1.81
Palustrine	III	1260-1	9	PFO4B/PSS4B	1.62
Palustrine	III	1275-1	9	PFO4B	1.07
Palustrine	III	1360-1	10	PFO4B	0.96
Palustrine	III	1375-1	10	PFO4B	0.60
				Palustrine Category III Aquatic Resource Total	***47.16***
Estuarine and Marine Shores	III	1454+15	11	E2RS2N/E2US1N	0.01
Estuarine and Marine Shores	III	EIT-36	11	E2RS2N/E2US1N	2.92
Estuarine and Marine Shores	III	EIT-35	11	E2RS2N/E2US1N	0.37
Estuarine and Marine Shores	III	EIT-34	11	E2RS2N/E2US1N	0.03
Estuarine and Marine Shores	III	EIT-24 & STN-3	12-13	E2RS2N/E2US1N	3.48
Estuarine and Marine Shores	III	EIT-22	13	E2RS2N/E2US1N	0.02
Estuarine and Marine Shores	III	EIT-21	13, 18	E2RS2N/E2US1N	7.03
Estuarine and Marine Shores	III	STN-6-8	15	E2RS2N/E2US1N	7.22
Estuarine and Marine Shores	III	EIT-14	18	E2RS2N/E2US1N	0.63
Estuarine and Marine Shores	III	EIT-13	18-19	E1UBL	3.15
Estuarine and Marine Shores	III	KATZ1-4	19	E2RS2N/E2US1N	7.19
				Estuarine and Marine Shores Category III Total	***32.05***
				Aquatic Resource Total	***92.74***

The DOT&PF intends to coordinate with the USACE to develop a Compensatory Mitigation Plan that would outline the twelve elements required by the Final Rule for permittee-responsible mitigation projects. This process will determine the credits from the already completed Yankee Cove mitigation project. In addition, the area created from the riprap breakwater for the Katzehin Ferry Terminal also provides an opportunity for permittee-responsible aquatic resource enhancement that that may be included in the Compensatory Mitigation Plan. Calculations of credits from the two potential permittee-responsible mitigation projects, as well as the amount of credits to be purchased from an ILF provider will be detailed in the Compensatory Mitigation Plan approved by the USACE during the Section 404/10 permitting process. The Compensatory Mitigation Plan will use the mitigation ratios outlined in Table 6 to offset the direct loss of 92.8 acres of wetlands and waterbodies associated with the development of the JAI Project

Table 6. Proposed Compensatory Mitigation Ratios

Category	NWI Type	Water of the U.S. Type	Impact (acres)	Proposed Compensatory Mitigation Ratio	ILF Mitigation Credits
II	Palustrine Wetland	Special Aquatic Site	13.5	2:1	27.0
III	Palustrine Wetland	Special Aquatic Site	47.2	1.5:1	70.8
III	Marine Area	Water of the U.S.	32.1	1.5:1	48.2
		Totals	***92.8***		***146.0***

No compensatory mitigation is proposed for the 4.4 acres of dredging associated with the Katzehin Ferry Terminal. The marine areas would return to functioning intertidal areas following the dredging activities but would be lowered in elevation over the 4.4-acre area by an average of 5.6 feet. Dredging would not substantially alter the existing habitat or the functions and values currently performed by the area.

References

Adamus Resource Assessment, Inc. (Adamus) 1987. *Juneau Wetlands: Functions and Values*. Prepared for the City and Borough of Juneau, Alaska.

Alaska Department of Transportation and Public Facilities (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

——. 2005. *Juneau Access Improvements Supplemental Draft Environmental Impact Statement.* Juneau, Alaska. January 2005. Available online at http://dot.alaska.gov/sereg/projects/juneau_access/assets/SDEIS_JAN05/SDEIS_complete_nofigs.pdf

——. 2006. *Juneau Access Project: Final Environmental Impact Statement.* Juneau, Alaska. Available online at: http://dot.alaska.gov/sereg/projects/juneau_access/documents.shtml#feis.

National Marine Fisheries Service (NMFS). 2005. Letter from National Marine Fisheries Service to DOT&PF. Comments on the Draft Supplemental Environmental Impact Statement for the Juneau Access Project. May 16, 2005.

USACE 2008. USACE Permit POA-2006-597-2, Berners Bay/Lynn Canal.

U.S. Federal Register. 1986. Part II. Rules and Regulations, Vol. 51, No. 219. November 13, 1986. U.S. Department of Defense. Corps of Engineers, Department of the Army. 33 CFR Parts 320-330, Regulatory Programs of the Corps of Engineers; Final Rule.

U.S. Federal Register. 2008. Part II. Rules and Regulations, Vol. 73. No. 70. April 10, 2008. U.S. Department of Defense. Corps of Engineers, Department of the Army. 33 CFR Parts 325 and 332. Environmental Protection Agency, 40 CFR Part 230, Compensatory Mitigation for Losses of Aquatic Resources; Final Rule.

U.S. Fish and Wildlife Service (USFWS). 2014. National Wetland Inventory mapping for the state of Alaska, AK_wet_poly.gdb. Downloaded from http://www.fws.gov/wetlands/Data/State-Downloads.html on June 9, 2014.

Juneau Access Improvements

Attachment 3 Map Set

Map 1 of 19

Start of Project

Glacier Highway

PFO4B 75+08

PFO4B 79+41

PFO4B 79+41

PFO4B 75+08

PFO4B 93+59

PFO4B 116+94

PFO4B 107+39

PFO4B 116+94

PFO4B 107+39

PFO4B 116+94

PFO4B 116+94

MATCHLINE - PAGE 1

MATCHLINE - PAGE 2

ECHO COVE

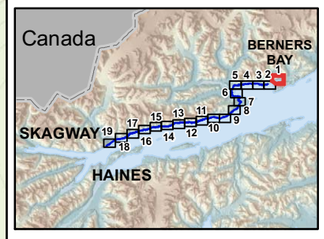
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



8/7/2014

Source: AK DOT&PF

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Juneau Access Improvements

Attachment 3 Map Set

Map 2 of 19

PFO4B 116+94
PFO4B 107+39
PFO4B 165+92
PFO4B 167+41
PFO4B 172+39
PFO4B 178+91
PFO4B 185+40
PFO4B 191+50
PFO4B 194+00
PFO4B 202+00
PFO4B 205+26
202+65
250+00
PEM1B 275-1
PEM1B 270-1
PFO4B 265-1
MATCHLINE - PAGE 1
MATCHLINE - PAGE 2
MATCHLINE - PAGE 3
MATCHLINE - PAGE 2
ECHO COVE
LYNN CANAL
Tongass National Forest Wilderness Area
Couvet Creek

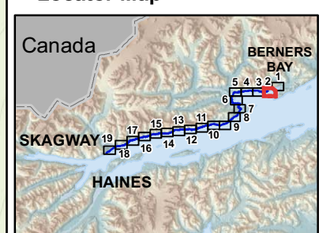
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



8/7/2014

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Juneau Access Improvements

Attachment 3 Map Set

Map 3 of 19

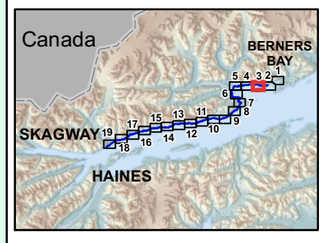
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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Attachment 3 Map Set

Map 4 of 19

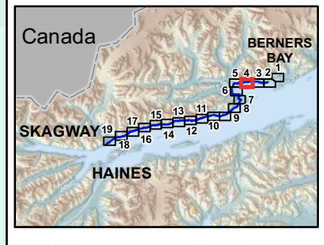
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



8/7/2014

Source: AK DOT&PF

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Map 5 of 19

Areas within 100' of the centerline were determined to be upland in the 2006 field effort. The exact location of wetland boundaries north and south are unknown.

UNNAMED CR

R3OWH
600-1

600+00

550+00

PF01A
680-2

PSS1S/PFL1S
680-3

650+00

ANTLER RIVER

PF01A
680-2

E2EM1P

R1UBV/R1FLR
690-1

BERNERS BAY

PSS1R

R1UBV/R1FLR
690-1

MATCHLINE - PAGE 5

MATCHLINE - PAGE 4

MATCHLINE - PAGE 5

MATCHLINE - PAGE 6

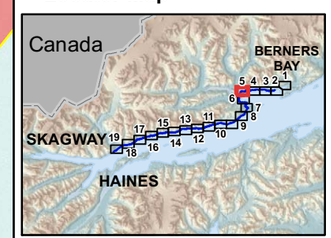
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



8/7/2014

Source: AK DOT&PF

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MATCHLINE - PAGE 5

MATCHLINE - PAGE 6

PSS1R

R1UBV/R1FLR
690-1

700+00

PFO1A/PSS1A
735-4

PEM1S
735-2

R3UBH

E2EM1P
735-1

Area delineated during
2006 field effort

BERNERS BAY

LACE RIVER

750+00

PFO4B
800-1

PEM1B
800-2

PFO4B
800-3

PEM1B
800-4

800+00

PFO4B
830-1

PEM1B
830-2

850+00

MATCHLINE - PAGE 6

MATCHLINE - PAGE 7

Juneau Access Improvements

Attachment 3 Map Set

Map 6 of 19

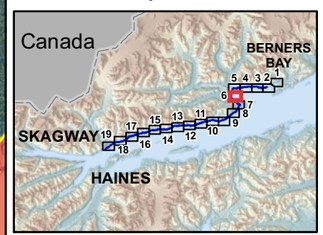
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



8/7/2014

Source: AK DOT&PF

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MATCHLINE - PAGE 6

MATCHLINE - PAGE 7

850+00

BERNER'S BAY

SLATE COVE

900+00

PFO4B
895-1

E2BB1N

E2EM1P
900-1

PFO4B
910-2

PEM1B/PSS4B
920-1

PEM1B/PSS4B
950-1

SLATE CR

R2OWH
915-1

Slate Creek Watershed Boundary

950+00

PEM1B/PSS4B
950-1

PEM1B/PSS4B
955-1

PEM1B/PSS4B
975-1

PFO4B
955-2

1000+00

PSS4B/PEM1B
990-1

PFO4B/PEM1B
1015-1

MATCHLINE - PAGE 7

MATCHLINE - PAGE 8

Juneau Access Improvements

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Map 7 of 19

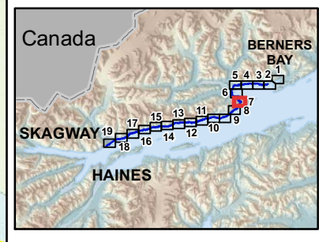
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



8/7/2014

Source: AK DOT&PF

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MATCHLINE - PAGE 7

MATCHLINE - PAGE 8

PSS4B/PEM1B
990-1

PFO4B/PEM1B
1015-1

PFO4B/PEM1B
1020-1

PEM1B/PSS4B
1040-1

1050+00

PFO4B
955-2

PFO4B/PEM1B
1070-1

1100+00

PEM1B/PSS4B
1110-1

PEM1B
1125-1

PEM1B/PSS4B
1135-1

1150+00

PEM1B/PSS4B
1150-1

LYNN CANAL

MATCHLINE - PAGE 8

MATCHLINE - PAGE 9

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Map 8 of 19

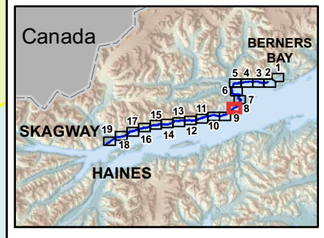
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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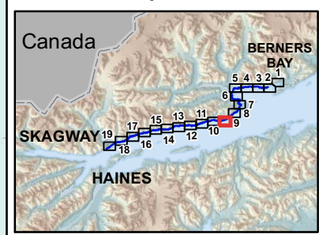
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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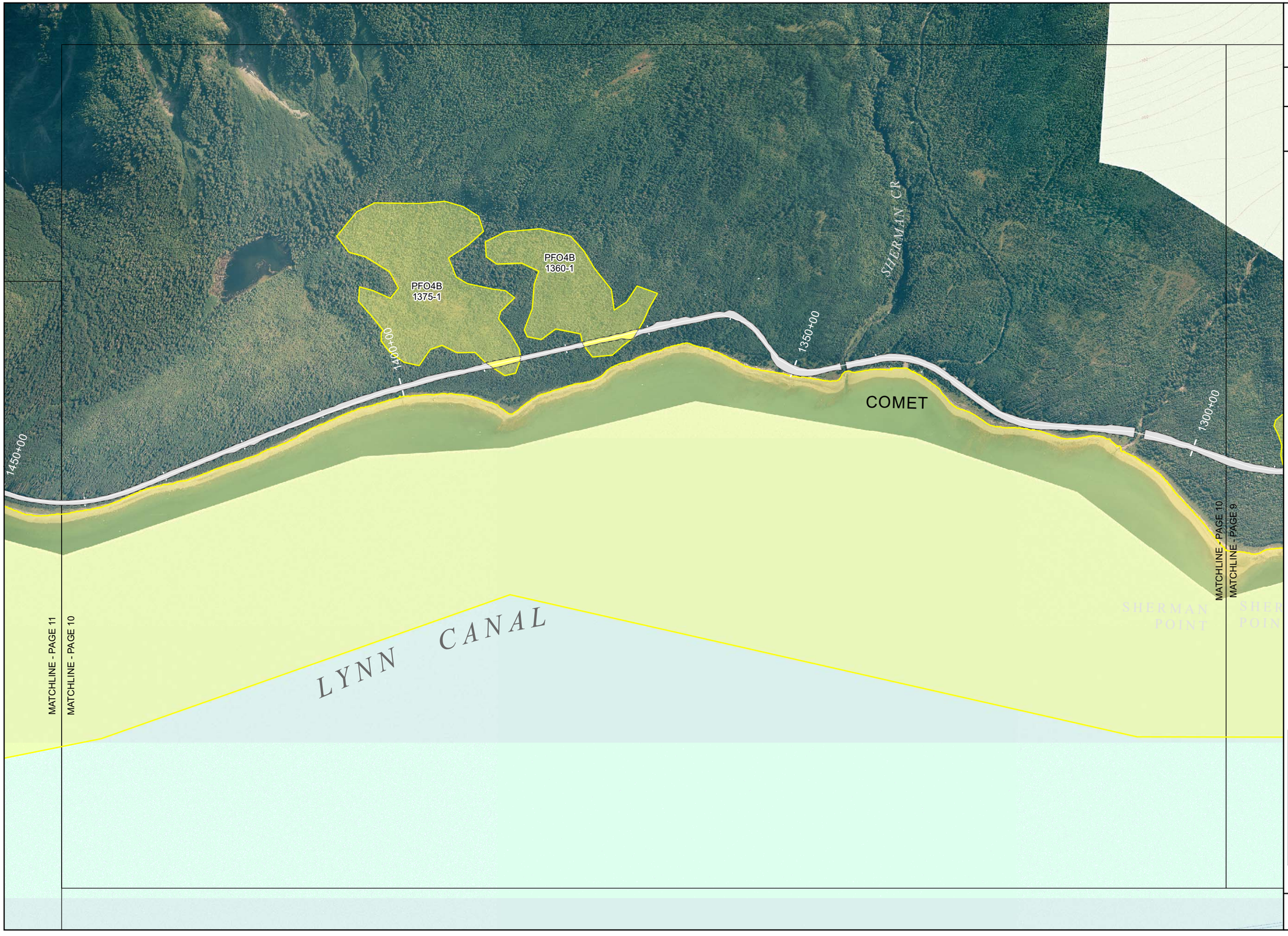


Juneau Access Improvements

Attachment 3 Map Set

Map 10 of 19

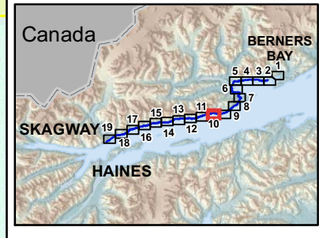
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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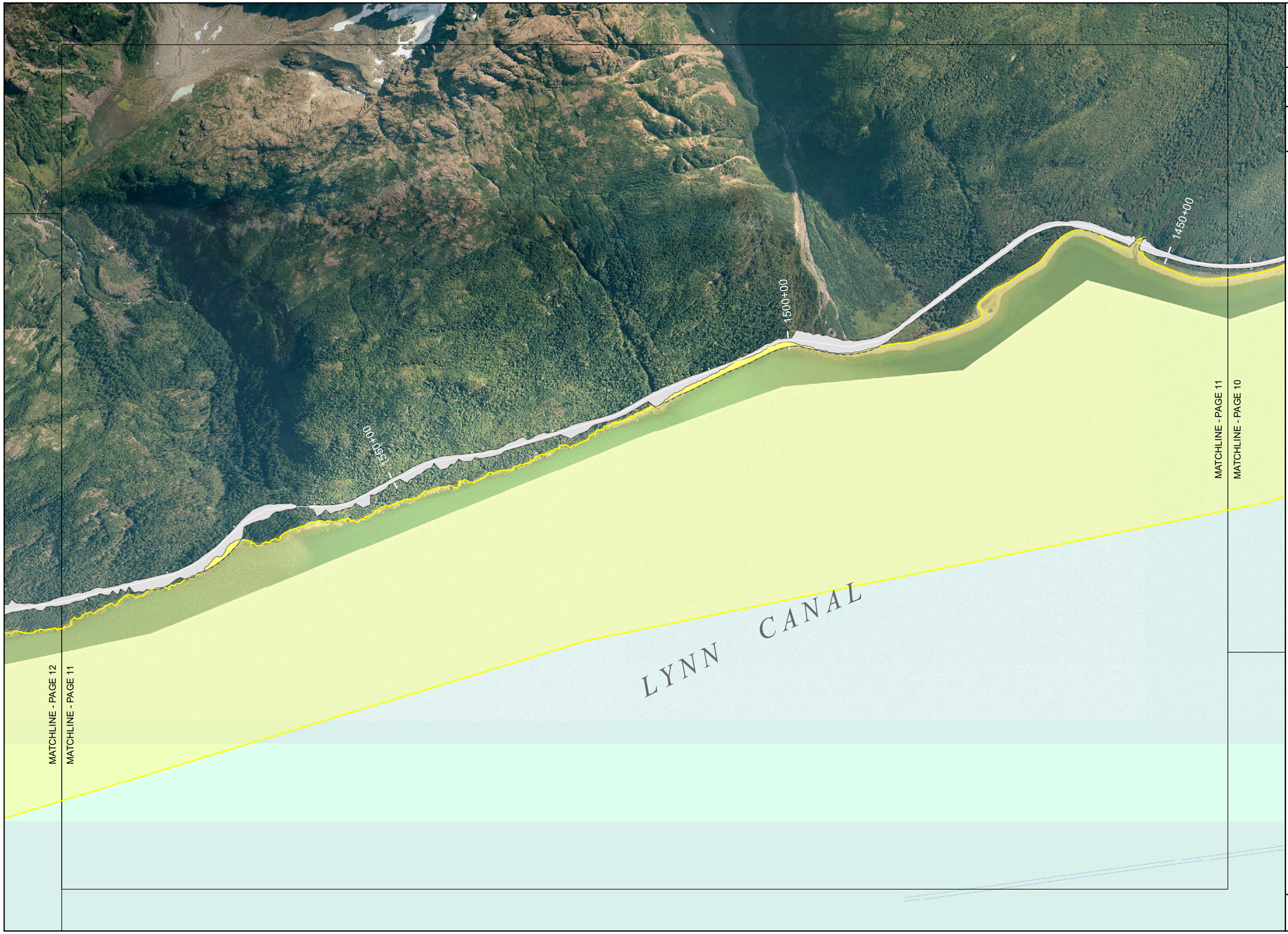

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Map 11 of 19

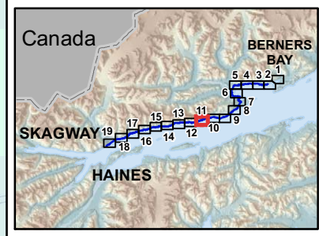
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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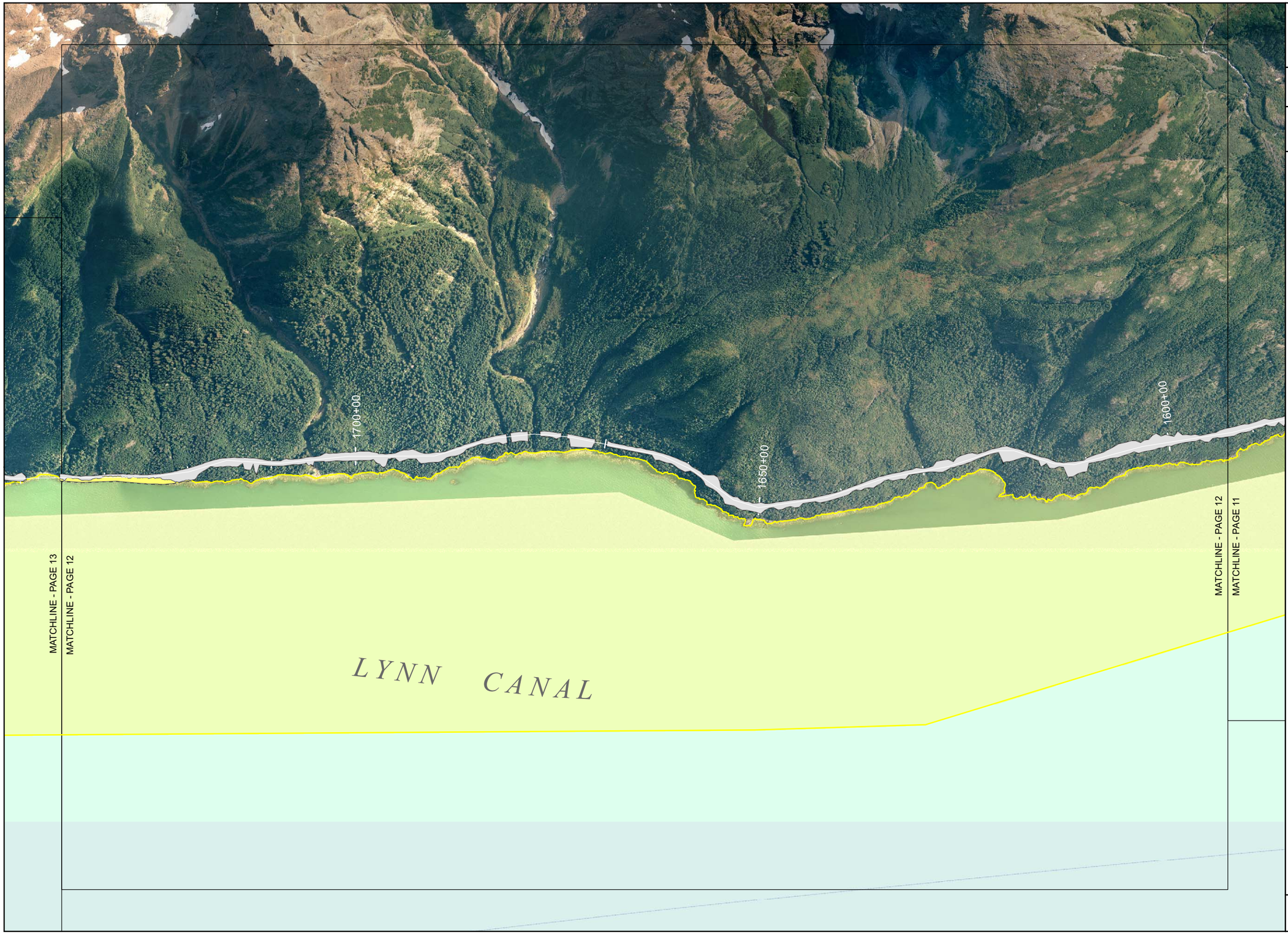


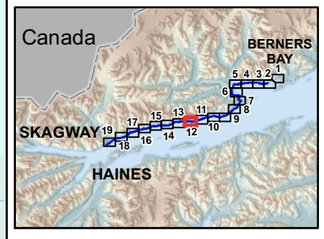
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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